CSX CORP
Form 4
January 15, 2016

FORM 4

UNITED STATES SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

STATEMENT OF CHANGES IN BENEFICIAL OWNERSHIP OF SECURITIES

Filed pursuant to Section 16(a) of the Securities Exchange Act of 1934, Section 17(a) of the Public Utility Holding Company Act of 1935 or Section 30(h) of the Investment Company Act of 1940

OMB APPROVAL
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Check this box if no longer subject to Section 16. Form 4 or Form 5 obligations may continue. *See* Instruction 1(b).

(Print or Type Responses)

1. Name and Address of Reporting Person *
Lonegro Frank A

(Last) (First) (Middle)

500 WATER STREET

(Street)

JACKSONVILLE, FL 32202

(City) (State) (Zip)

2. Issuer Name **and** Ticker or Trading Symbol
CSX CORP [CSX]

3. Date of Earliest Transaction (Month/Day/Year)
01/13/2016

4. If Amendment, Date Original Filed(Month/Day/Year)

5. Relationship of Reporting Person(s) to Issuer

(Check all applicable)

_____ Director _____ 10% Owner
__X__ Officer (give title below) _____ Other (specify below)
EVP & CFO

6. Individual or Joint/Group Filing(Check Applicable Line)
_X_ Form filed by One Reporting Person
___ Form filed by More than One Reporting Person

Table I - Non-Derivative Securities Acquired, Disposed of, or Beneficially Owned

1.Title of Security (Instr. 3)	2. Transaction Date (Month/Day/Year)	2A. Deemed Execution Date, if any (Month/Day/Year)	3. Transaction Code (Instr. 8)		4. Securities Acquired (A) or Disposed of (D) (Instr. 3, 4 and 5)			5. Amount of Securities Beneficially Owned Following Reported Transaction(s) (Instr. 3 and 4)	6. Ownership Form: Direct (D) or Indirect (I) (Instr. 4)	7. Nature of Indirect Beneficial Ownership (Instr. 4)
			Code	V	Amount	(A) or (D)	Price			
Common Stock	01/13/2016		A		6,597 (1)	A	$ 22.35	65,204	D	
Common Stock	01/13/2016		F		1,548 (2)	D	$ 22.35	63,656	D	
Common Stock								4,830	I	CSX Corporation 401(k) Plan (3)
Common Stock								150	I	General Partnership (4)
								1,742	I	

Common Stock	Executive Deferred Compnsation Plan (5)

Reminder: Report on a separate line for each class of securities beneficially owned directly or indirectly.

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SEC 1474 (9-02)

Table II - Derivative Securities Acquired, Disposed of, or Beneficially Owned
(*e.g.*, puts, calls, warrants, options, convertible securities)

1. Title of Derivative Security (Instr. 3)	2. Conversion or Exercise Price of Derivative Security	3. Transaction Date (Month/Day/Year)	3A. Deemed Execution Date, if any (Month/Day/Year)	4. Transaction Code (Instr. 8)		5. Number of Derivative Securities Acquired (A) or Disposed of (D) (Instr. 3, 4, and 5)		6. Date Exercisable and Expiration Date (Month/Day/Year)		7. Title and Amount of Underlying Securities (Instr. 3 and 4)		8. Price of Derivative Security (Instr. 5)	9. Nu Deriv Secur Bene Owne Follo Repo Trans (Instr
				Code	V	(A)	(D)	Date Exercisable	Expiration Date	Title	Amount or Number of Shares		

Reporting Owners

Reporting Owner Name / Address	Relationships			
	Director	10% Owner	Officer	Other
Lonegro Frank A 500 WATER STREET JACKSONVILLE, FL 32202			EVP & CFO	

Signatures

/s/ Mark D. Austin, Attorney-in-Fact	01/14/2016
**Signature of Reporting Person	Date

Explanation of Responses:

***** If the form is filed by more than one reporting person, *see* Instruction 4(b)(v).

****** Intentional misstatements or omissions of facts constitute Federal Criminal Violations. *See* 18 U.S.C. 1001 and 15 U.S.C. 78ff(a).

(1) Shares awarded pursuant to the CSX 2013 - 2015 Long Term Incentive Plan.

(2) Withholding of stock to satisfy tax obligation.

(3) By Trustee, CSX Corporation Savings Thrift Plan. Reflects equivalent shares of cash value held in CSX Stock Fund, which amounts will fluctuate dependent upon daily net asset value of the fund.

(4) A general partnership of which the Reporting Person holds a 25% interest.

(5) By Trustee, CSX Corporation Executive Deferred Compensation Plan.

Note: File three copies of this Form, one of which must be manually signed. If space is insufficient, *see* Instruction 6 for procedure.
Potential persons who are to respond to the collection of information contained in this form are not required to respond unless the form displays a currently valid OMB number. TYLE=" margin-top:0pt ; margin-bottom:0pt; border-top:1.00px solid #000000">

Total liabilities, preferred stock, and stockholders deficit

$23,536,000 $7,119,000

See accompanying notes to these consolidated financial statements.

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Miragen Therapeutics, Inc.

Consolidated Statements of Operations

	Year Ended December 31, 2015	2014
Revenue:		
Revenue under strategic alliance and collaboration	$ 4,977,000	$ 7,641,000
Grant revenue	27,000	
Total revenue	5,004,000	7,641,000
Operating expenses:		
Research and development	13,312,000	9,488,000
General and administrative	3,850,000	4,068,000
Total operating expenses	17,162,000	13,556,000
Loss from operations	(12,158,000)	(5,915,000)
Other income:		
Interest and other income	3,000	9,000
Interest and other related expense	(3,531,000)	
Net loss	(15,686,000)	(5,906,000)
Accretion of preferred stock to redemption value	(34,000)	(30,000)
Net loss applicable to common stockholders	$ (15,720,000)	$ (5,936,000)
Net loss per share, basic and diluted	$ (18.37)	$ (7.03)
Shares used in computing net loss per share, basic and diluted	855,734	844,093

See accompanying notes to these consolidated financial statements.

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Miragen Therapeutics, Inc.

Consolidated Statements of Preferred Stock and Stockholders Deficit

Redeemable Convertible Preferred Stock						Stockholders deficit			
Series A		Series B		Series C		Common stock		Additional paid-in capital	Accumulated deficit
Shares	Amount	Shares	Amount	Shares	Amount	Shares	Amount		
7,149,176	$ 23,080,000	999,991	$ 5,961,000		$	834,776	$ 1,000	$ 972,000	$ (28,097,000)
		1,166,660	6,986,000						
						20,958		9,000	
								229,000	
	18,000		12,000						(30,000)
									(5,906,000)
7,149,176	$ 23,098,000	2,166,651	$ 12,959,000		$	855,734	$ 1,000	$ 1,210,000	$ (34,033,000)
				3,632,342	15,882,000				

				2,003,884	8,877,000				
								2,960,000	
								292,000	
	18,000		11,000		5,000				(34,000)
									(15,686,000)
7,149,176	$ 23,116,000	2,166,651	$ 12,970,000	5,636,226	$ 24,764,000	855,734	$ 1,000	$ 4,462,000	$ (49,753,000)

See accompanying notes to these consolidated financial statements.

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Miragen Therapeutics, Inc.

Consolidated Statements of Cash Flows

	Year Ended December 31,	
	2015	2014
Cash flows from operating activities:		
Net loss	$ (15,686,000)	$ (5,906,000)
Adjustments to reconcile net loss to net cash used in operating activities:		
Depreciation and amortization	280,000	388,000
Stock-based compensation	292,000	229,000
Gain on sale or disposition of property and equipment	(3,000)	(1,000)
Interest expense and other charges related to convertible notes	2,978,000	
Interest expense on convertible notes converted into equity	377,000	
Amortization and accretion expenses on notes payable	112,000	
Decrease in value of preferred stock warrants	(44,000)	(5,000)
Changes in operating assets and liabilities:		
Prepaid expenses and other assets	(261,000)	172,000
Deferred revenue	(1,180,000)	(3,348,000)
Accounts payable	256,000	(246,000)
Accrued and other liabilities	(71,000)	1,013,000
Net cash used in operating activities	(12,950,000)	(7,704,000)
Cash flows from investing activities:		
Purchases of marketable securities		(327,000)
Sale and maturities of marketable securities		2,299,000
Proceeds from sale of property and equipment	3,000	
Purchases of property and equipment	(315,000)	(71,000)
Net cash provided by (used in) investing activities	(312,000)	1,901,000
Cash flows from financing activities:		
Proceeds from issuance of redeemable convertible preferred stock	16,091,000	7,000,000
Redeemable convertible preferred stock issuance costs	(133,000)	(14,000)
Proceeds from issuance of convertible notes payable	8,500,000	
Convertible notes payable issuance costs	(18,000)	
Proceeds from issuance of notes payable	5,000,000	
Notes payable issuance costs	(57,000)	
Proceeds from issuance of common stock		9,000
Net cash provided by financing activities	29,383,000	6,995,000
Net increase in cash and cash equivalents	16,121,000	1,192,000
Cash and cash equivalents at beginning of period	5,114,000	3,922,000

Cash and cash equivalents at end of period	$ 21,235,000	$ 5,114,000
Noncash investing and financing activities:		
Preferred stock issued in conjunction with notes payable	$ 121,000	$
Conversion of convertible notes payable into Series C Preferred	$ 8,500,000	$
Conversion of interest payable into Series C Preferred	$ 377,000	$
Series C preferred stock issuance costs included in accrued liabilities	$ 76,000	$

See accompanying notes to these consolidated financial statements.

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Miragen Therapeutics, Inc.

Notes to Consolidated Financial Statements

(1) Description of Business

Miragen Therapeutics, Inc. was originally formed as a Delaware corporation in February 2006. The corporation changed its name to Miragen Therapeutics, Inc. in July 2007 and the Company began its operations. In January 2011, Miragen Therapeutics Europe Limited (Miragen Europe) was formed as a wholly-owned subsidiary of Miragen Therapeutics, Inc. for the sole purpose of submitting regulatory filings in Europe. Miragen Europe has no employees or operations. As used in this report, unless the context suggests otherwise, the Company, and Miragen means Miragen Therapeutics, Inc.

Miragen is a clinical-stage biopharmaceutical company discovering and developing proprietary RNA-targeted therapeutics with a specific focus on microRNAs and their role in diseases where there is a high unmet medical need. microRNAs are short RNA molecules, or oligonucleotides, that regulate gene expression or activity and play a vital role in influencing the pathways responsible for many disease processes. Miragen uses its expertise in systems biology and oligonucleotide chemistry to discover and develop a pipeline of product candidates. Miragen s two lead product candidates, MRG-106 and MRG-201, are currently in Phase 1 clinical trials. Miragen s clinical product candidate for the treatment of certain cancers, MRG-106, is an inhibitor of microRNA-155, or miR-155, which is found at abnormally high levels in several blood cancers. Miragen s clinical product candidate for the treatment of pathological fibrosis, MRG-201, is a replacement for miR-29, which is found at abnormally low levels in a number of pathological fibrotic conditions, including cardiac, renal, hepatic, and pulmonary fibrosis, as well as systemic sclerosis. In addition to Miragen s clinical programs, it is developing a pipeline of pre-clinical product candidates. The goal of Miragen s translational medicine strategy is to progress rapidly to first in human studies once it has established the pharmacokinetics (the movement of drug into, through, and out of the body), pharmacodynamics (the effect and mechanism of action of a drug) and safety of the product candidate in pre-clinical studies.

Liquidity

Miragen has funded its operations to date principally through proceeds from the sale of its preferred stock of $56 million (including notes payable that have converted to preferred stock) and $32 million in proceeds under its strategic alliance with Les Laboratoires Servier and Institute de Recherches Servier (together, Servier). Since Miragen s inception and through December 31, 2015, Miragen has generated cumulative losses of $50 million. Miragen s ability to fund ongoing operations is highly dependent upon its ability to raise additional capital through sales of its equity securities, continued performance under Miragen s strategic alliance with Servier, securing additional partnerships and collaborations, and issuing debt or other financing vehicles. Miragen s ability to secure capital is dependent upon success in developing its technology and drug product candidates. Miragen can provide no assurance that additional capital will be available on acceptable terms. The sale of additional equity or issuance of debt securities would likely result in substantial additional dilution to Miragen s stockholders. If Miragen raises additional funds through the incurrence of indebtedness, the obligations related to such indebtedness could be senior to rights of holders of Miragen s capital stock and could contain covenants that may restrict its operations. Should additional capital not be available to Miragen in the near term, or not be available on acceptable terms, Miragen may be unable to realize value from Miragen s assets and discharge its liabilities in the normal course of business, which may, among other alternatives, cause Miragen to further delay, substantially reduce, or discontinue operational activities to conserve Miragen s cash resources.

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Miragen believes that the $21.2 million of cash and cash equivalents on hand at December 31, 2015 will be sufficient to fund its operations in the normal course of business and allow Miragen to meet its liquidity needs through at least December 31, 2016.

(2) Summary of Significant Accounting Policies

Basis of Presentation and Consolidation

The accompanying consolidated financial statements have been prepared in accordance with U.S. generally accepted accounting principles (U.S. GAAP) and include all adjustments necessary for the fair presentation of Miragen s financial position, results of operations and cash flows for the periods presented. The accompanying consolidated financial statements included the accounts of Miragen and its wholly-owned subsidiary. All significant intercompany balances have been eliminated in consolidation. Miragen s management performed an evaluation of its activities through the date of filing of these financial statements and concluded that there are no subsequent events, other than as disclosed.

Use of Estimates

Miragen s consolidated financial statements are prepared in accordance with U.S. GAAP, which requires Miragen to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and contingent liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Although these estimates are based on Miragen s knowledge of current events and actions it may undertake in the future, actual results may ultimately differ from these estimates and assumptions.

Revenue Recognition

Miragen recognizes revenue principally from upfront payments for licenses or options to obtain licenses in the future, milestone payments that are generated from defined research or development events, as well as amounts for other research and development services under strategic alliance and collaboration agreements. Miragen recognizes revenue when all four of the following criteria are met: (1) persuasive evidence of an arrangement exists; (2) products have been delivered or services rendered; (3) the selling price is fixed or determinable; and (4) collectability is reasonably assured.

Multiple element arrangements are examined to determine whether the deliverables can be separated or must be accounted for as a single unit of accounting. The Servier Collaboration Agreement, for example, includes a combination of upfront license fees, payments for research and development activities, and milestone payments that are evaluated to determine whether each deliverable under the agreement has value to the customer on a stand-alone basis and whether reliable evidence of fair value for the deliverable exists. Deliverables in an arrangement that do not meet this separation criteria are treated as a single unit of accounting, generally applying applicable revenue recognition guidance for the final deliverable to the combined unit of accounting.

Miragen recognizes revenue from non-refundable upfront license fees over the term of performance under the Servier Collaboration Agreement. When the performance period is not specified, Miragen estimates the performance period based upon provisions contained within the agreement, such as the duration of the research or development term, the existence, or likelihood of achievement of development commitments and any other significant commitments. These advance payments are deferred and recorded as deferred revenue upon receipt, pending recognition, and are classified as a short-term or long-term liability in the accompanying consolidated balance sheets. Expected performance periods

are reviewed periodically and, if applicable, the amortization period is adjusted which, Miragen may accelerate or decelerate revenue recognition. The timing of revenue recognition, specifically as it relates to the amortization of upfront license fees, is significantly influenced by Miragen s estimates.

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Stock-Based Compensation

Miragen accounts for stock-based compensation expense related to stock options granted to employees and members of its board of directors under its 2008 Equity Incentive Plan (the 2008 Equity Plan) by estimating the fair value of each stock option or award on the date of grant using the Black-Scholes model. Miragen recognizes stock-based compensation expense on a straight-line basis over the vesting term. Compensation expense is reduced for estimated forfeitures, which are estimated at the time of grant and revised, if necessary, in subsequent periods if actual forfeitures differ from those estimates.

Miragen accounts for stock options issued to non-employees by valuing the award using an option pricing model and remeasuring such awards to the current fair value until the awards are vested or a performance commitment has otherwise been reached.

Research and Development

Research and development costs are expensed as incurred and include compensation and related benefits, stock-based compensation, license fees, laboratory supplies, facilities, and overhead costs. Miragen often makes non-refundable advance payments for goods and services that will be used in future research and development activities. These payments are capitalized and recorded as expense in the period that Miragen receives the goods or when the services are performed.

Miragen records upfront and milestone payments to acquire contractual rights to licensed technology as research and development expenses when incurred if there is uncertainty in Miragen receiving future economic benefit from the acquired contractual rights. Miragen considers future economic benefits from acquired contractual rights to licensed technology to be uncertain until such a drug candidate is approved by the U.S. Food and Drug Administration (the FDA) or when other significant risk factors are abated.

Clinical Trial and Pre-clinical Study Accruals

Miragen makes estimates of its accrued expenses as of each balance sheet date in its consolidated financial statements based on certain facts and circumstances at that time. Miragen s accrued expenses for pre-clinical studies and clinical trials are based on estimates of costs incurred for services provided by clinical research organizations, manufacturing organizations, and for other trial related activities. Payments under Miragen s agreements with external service providers depend on a number of factors such as site initiation, patient screening, enrollment, delivery of reports, and other events. In accruing for these activities, Miragen obtains information from various sources and estimate level of effort or expense allocated to each period. Adjustments to Miragen s research and development expenses may be necessary in future periods as its estimates change. As these activities are generally material to Miragen s overall financial statements, subsequent changes in estimates may result in a material change in its accruals.

Cash and Cash Equivalents

Miragen classifies all highly liquid investments that have maturities of 90 days or less at the date of purchase as cash equivalents. Cash equivalents are reported at cost, which approximates fair value due to the short maturities of these instruments.

Fair Value of Financial Instruments

The carrying amounts of financial instruments, including cash and cash equivalents, accrued compensation, pre-clinical study accruals and accounts payable, approximate fair value due to their short-term maturities. The carrying amount of the note payable approximates its fair value as its terms are comparable to what would be included in similar debt instruments.

The Company accounts for its preferred stock warrants pursuant to ASC Topic 480, *Distinguishing Liabilities from Equity*, and classifies warrants for redeemable preferred stock as liabilities. The warrants are reported at their estimated fair value and any changes in fair value are reflected in interest expense and other related expenses.

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Fair value is defined as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. Inputs used to measure fair value are classified into the following hierarchy:

Level 1 Unadjusted quoted prices in active markets for identical assets or liabilities

Level 2 Unadjusted quoted prices in active markets for similar assets or liabilities; unadjusted quoted prices for identical or similar assets or liabilities in markets that are not active; or inputs other than quoted prices that are observable for the asset or liability

Level 3 Unobservable inputs for the asset or liability

Assets and liabilities measured at fair value on a recurring basis consisted of the following:

	As of December 31, 2015		As of December 31, 2014	
	Level 1	**Level 3**	**Level 1**	**Level 3**
Assets measured at fair value:				
Short-term investment (included in cash and cash equivalents)	$ 248,000	$	$ 248,000	$
Liabilities measured at fair value:				
Preferred stock warrants	$	$ 169,000	$	$ 92,000

A reconciliation of the beginning and ending balances of Miragen s liabilities measured at fair value using significant unobservable, or Level 3, inputs are as follows:

Balance of liability as of December 31, 2013	$ 97,000
Change in estimated value of warrants	(5,000)
Balance of liability as of December 31, 2014	92,000
Issuance of Series B preferred stock warrants	121,000
Change in estimated value of warrants	(44,000)
Balance of liability as of December 31, 2015	$ 169,000

Concentrations of Credit Risk

Financial instruments that potentially subject Miragen to concentrations of credit risk consist primarily of cash equivalents, which include short-term investments that all have maturities of less than three months. Miragen maintains deposits in federally insured financial institutions in excess of federally insured limits. Miragen has not

experienced any losses in such accounts. Miragen invests its excess cash primarily in deposits and money market funds held with two financial institutions. There were no elements of comprehensive loss during the years ended December 31, 2015 and 2014.

Property and Equipment

Miragen carries its property and equipment at cost, less accumulated depreciation and amortization. Depreciation is computed using the straight-line method over the estimated useful lives of the assets, generally three to five years. Leasehold improvements are amortized over the shorter of the life of the lease (including any renewal periods that are deemed to be reasonably assured) or the estimated useful life of the assets. Construction in progress is not depreciated until placed in service. Repairs and maintenance costs are expensed as incurred and expenditures for major improvements are capitalized.

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Impairment of Long-Lived Assets

Miragen assesses the carrying amount of its property and equipment whenever events or changes in circumstances indicate the carrying amount of such assets may not be recoverable. No impairment charges were recorded during the year ended December 31, 2015 or 2014.

Net Loss per Share

Basic net loss per share is calculated by dividing the net loss applicable to common stockholders by the weighted average number of shares of common stock outstanding during the period without consideration of common stock equivalents. Since Miragen was in a loss position for all periods presented, diluted net loss per share is the same as basic net loss per share for all periods as the inclusion of all potential common shares outstanding would have been anti-dilutive.

Comprehensive Loss

Comprehensive loss is defined as the change in equity during a period from transactions and other events and/or circumstances from non-owner sources. Comprehensive gains (losses) are reflected in the statements of operations and comprehensive loss and as a separate component in the statements of stockholders equity. There were no elements of comprehensive loss during the years ended December 31, 2015 and 2014.

Income Taxes

Miragen accounts for income taxes by using an asset and liability method of accounting for deferred income taxes. Deferred tax assets and liabilities are recognized for the future tax consequences attributable to differences between the financial statement carrying amounts of existing assets and liabilities and their respective tax bases. A valuation allowance is recorded to the extent it is more likely than not that a deferred tax asset will not be realized. Deferred tax assets and liabilities are measured using enacted tax rates expected to apply to taxable income in the years in which those temporary differences are expected to be recovered or settled. The effect on deferred tax assets and liabilities of a change in tax rates is recognized in operations in the period that includes the enactment date.

Miragen s only significant deferred tax assets are for net operating loss carryforwards and capitalized start-up costs. Miragen has provided a valuation allowance for its entire net deferred tax assets since inception as, due to uncertainty as to future utilization of its net operating loss carryforwards, and its history of operating losses, Miragen has concluded that it is not more likely than not that its deferred tax assets will be realized.

Miragen has no unrecognized tax benefits. Miragen classifies interest and penalties arising from the underpayment of income taxes in the consolidated statements of operations as general and administrative expenses.

Segment Information

Miragen operates in one operating segment and, accordingly, no segment disclosures have been presented herein. All of Miragen s equipment, leasehold improvements and other fixed assets are physically located within the United States, and all agreements with its partners are denominated in U.S. dollars, except where noted.

Recent Accounting Pronouncements

In May 2014, the Financial Accounting Standards Board (FASB) issued *ASU No. 2014-09, Revenue from Contracts with Customers*, an updated standard on revenue recognition. ASU No. 2014-09 provides

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enhancements to the quality and consistency of how revenue is reported by companies while also improving comparability in the financial statements of companies reporting using International Financial Reporting Standards or U.S. GAAP. The main purpose of the new standard is for companies to recognize revenue to depict the transfer of goods or services to customers in amounts that reflect the consideration to which a company expects to be entitled in exchange for those goods or services. The new standard also will result in enhanced disclosures about revenue, provide guidance for transactions that were not previously addressed comprehensively and improve guidance for multiple-element arrangements. In July 2015, the FASB voted to approve a one-year deferral of the effective date of ASU No. 2014-09, which will be effective for the Company in the first quarter of fiscal year 2018 and may be applied on a full retrospective or modified retrospective approach. The Company is currently evaluating the impact of implementation and transition approach of ASU 2014-09 on its financial statements and related disclosures.

In March 2016, the FASB issued *ASU No. 2016-08, Revenue from Contracts with Customers (Topic 606): Principal versus Agent Considerations*. The purpose of ASU No. 2016-08 is to clarify the implementation of guidance on principal versus agent considerations. For public entities, the amendments in ASU No. 2016-08 are effective for interim and annual reporting periods beginning after December 15, 2017. The Company is currently evaluating the impact of ASU No. 2016-08 on its financial statements and related disclosures.

In August 2014, the FASB issued *ASU No. 2014-15, Presentation of Financial Statements-Going Concern*, which defines management s responsibility to assess an entity s ability to continue as a going concern, and requires related footnote disclosures if there is substantial doubt about its ability to continue as a going concern. ASU No. 2014-15 is effective for the Company for the fiscal year ending on December 31, 2016, with early adoption permitted. The Company is currently evaluating the impact of ASU No. 2014-15 on its financial statements and related disclosures.

In November 2015, the FASB issued *ASU No. 2015-17, Balance Sheet Classification of Deferred Taxes*. ASU No. 2015-17 requires that deferred tax liabilities and assets be classified as noncurrent in a classified statement of financial position. ASU No. 2015-17 is effective for financial statements issued for fiscal years beginning after December 15, 2016, and interim periods within those fiscal years. The Company currently does not believe the impact of adopting ASU No. 2014-15 will have a material impact on its financial statements and related disclosures.

In January 2016, the FASB issued *ASU No. 2016-01, Recognition and Measurement of Financial Assets and Financial Liabilities*. ASU No. 2016-01 requires equity investments to be measured at fair value with changes in fair value recognized in net income; simplifies the impairment assessment of equity investments without readily determinable fair values by requiring a qualitative assessment to identify impairment; eliminates the requirement for public business entities to disclose the method(s) and significant assumptions used to estimate the fair value that is required to be disclosed for financial instruments measured at amortized cost on the balance sheet; requires public business entities to use the exit price notion when measuring the fair value of financial instruments for disclosure purposes; requires an entity to present separately in other comprehensive income the portion of the total change in the fair value of a liability resulting from a change in the instrument-specific credit risk when the entity has elected to measure the liability at fair value in accordance with the fair value option for financial instruments; requires separate presentation of financial assets and financial liabilities by measurement category and form of financial assets on the balance sheet or the accompanying notes to the financial statements and clarifies that an entity should evaluate the need for a valuation allowance on a deferred tax asset related to available-for-sale securities in combination with the entity s other deferred tax assets. ASU No. 2016-01 is effective for financial statements issued for fiscal years beginning after December 15, 2017, and interim periods within those fiscal years. The Company is currently evaluating the impact of ASU No. 2016-01 on its financial statements and related disclosures.

In February 2016, the FASB issued *ASU No. 2016-02, Leases (Topic 842), which supersedes FASB ASC Topic 840, Leases (Topic 840)* and provides principles for the recognition, measurement, presentation and disclosure of leases for

both lessees and lessors. The new standard requires lessees to apply a dual approach,

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classifying leases as either finance or operating leases based on the principle of whether or not the lease is effectively a financed purchase by the lessee. This classification will determine whether lease expense is recognized based on an effective interest method or on a straight-line basis over the term of the lease, respectively. A lessee is also required to record a right-of-use asset and a lease liability for all leases with a term of greater than twelve months regardless of classification. Leases with a term of twelve months or less will be accounted for similar to existing guidance for operating leases. The standard is effective for annual and interim periods beginning after December 15, 2018, with early adoption permitted upon issuance. The Company is currently evaluating the impact of ASU 2016-02 on its financial statements and related disclosures.

In March 2016, the FASB issued *ASU No. 2016-09, Compensation Stock Compensation (Topic 718): Improvements to Employee Share-Based Payment Accounting*. The amendment is to simplify several aspects of the accounting for stock-based payment transactions including the income tax consequences, classification of awards as either equity or liabilities, and classification on the statement of cash flows. The amendments in ASU No. 2016-09 are effective for interim and annual reporting periods beginning after December 15, 2016. The Company is currently assessing the impact of ASU No. 2016-09 on its financial statements and related disclosures.

In April 2016, the FASB issued *ASU No. 2016-10, Revenue from Contracts with Customer*. The new guidance is an update to ASC 606 and provides clarity on: identifying performance obligations and licensing implementation. For public companies, ASU No. 2016-10 is effective for annual periods, including interim periods within those annual periods, beginning after December 15, 2016. The Company is currently evaluating the impact of ASU No. 2016-10 on its financial statements and related disclosures.

In June 2016, the FASB issued *ASU No. 2016-13, Financial Instruments Credit Losses: Measurement of Credit Losses on Financial Instruments*. ASU 2016-13 requires that expected credit losses relating to financial assets measured on an amortized cost basis and available-for-sale debt securities be recorded through an allowance for credit losses. ASU 2016-13 limits the amount of credit losses to be recognized for available-for-sale debt securities to the amount by which carrying value exceeds fair value and also requires the reversal of previously recognized credit losses if fair value increases. The new standard will be effective for Miragen on January 1, 2020. Early adoption will be available on January 1, 2019. The Company is currently evaluating the impact of ASU 2016-13 on its financial statements and related disclosures.

(3) Strategic Alliance and Collaboration with Servier

In October 2011, Miragen entered into a strategic alliance with Les Laboratoires Servier and the Institut de Recherches Servier (Servier) for the research, development, and commercialization of RNA-targeting therapeutics in cardiovascular disease (the Servier Collaboration Agreement) which was subsequently amended in May 2013, May 2014 and May 2015. Under the Servier Collaboration Agreement, Miragen granted Servier an exclusive license to research, develop, and commercialize RNA-targeting therapeutics for three targets in the cardiovascular field. Under the terms of the amended Servier Collaboration Agreement, Servier has the limited right to replace each of the three original targets once through October 2016. As of December 31, 2015, three named targets exist under the Servier Collaboration Agreement, two of which are replaceable by Servier. Additionally, Servier has a limited right of first negotiation for the license of additional targets from Miragen in the cardiovascular field through October 2016. These rights and the collaboration term below can be extended by mutual agreement between Miragen and Servier at any time on or before October 2016.

Servier s rights to each of the targets are limited to therapeutics in the cardiovascular field in their territory, which is worldwide except for the United States and Japan. Miragen retains all rights for each named target in the United States

and Japan and for any products or product candidates outside of the cardiovascular field.

In connection with entering into the strategic alliance with Servier, Miragen received a nonrefundable upfront payment of $8.4 million (6.0 million) in 2011 and an additional $4.0 million (3.0 million) in 2013

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when Servier exercised their right to name a third target under the agreement. Miragen is also eligible to receive development milestone payments of 5.8 million to 13.8 million ($6.3 million to $15.1 million as of December 31, 2015) and regulatory milestone payments of 10.0 million to 40.0 million ($10.9 million to $43.6 million as of December 31, 2015) for each target. Additionally, Miragen may receive up to 175 million ($191 million as of December 31, 2015) in commercialization milestones as well as quarterly royalty payments between the low-double digits to the mid-teens (subject to reductions for patent expiration, generic competition, third-party royalty and costs of goods) on the net sales of any licensed product commercialized by Servier. Additionally, if Miragen undergoes a change of control in specified circumstances, Servier has agreed to increase this royalty by an additional percentage in the low-single digits if it seeks to use any of the acquiror s intellectual property in the development of product candidates under the Servier Collaboration Agreement. Servier is obligated to make any such royalty payment for a specified period under the Servier Collaboration Agreement.

As part of the Servier Collaboration Agreement, Miragen established a multiple-year research collaboration, under which Miragen jointly performs agreed upon research activities directed to the identification and characterization of named targets and oligonucleotides in the cardiovascular field, which Miragen refers to as the Research Collaboration. The initial three-year term of the Research Collaboration was extended by two additional years in May 2014 through October 2016. Servier is responsible for funding all of the costs of the Research Collaboration, as defined under the Servier Collaboration Agreement. During the years ended December 31, 2015 and 2014, Miragen recognized as revenue amounts reimbursable to Miragen under the Servier Collaboration Agreement for research and development activities of $3.8 million and $4.3 million, respectively.

Refer to Note 13 for disclosure of amendments to the Servier Collaboration Agreement entered into subsequent to December 31, 2015.

The development of each product candidate (commencing with registration enabling toxicology studies) under the Servier Collaboration Agreement is performed pursuant to a mutually agreed upon development plan to be conducted by the parties as necessary to generate data useful for both parties to obtain regulatory approval of such product candidates. Servier is responsible for a specified percentage of the cost of research and development activities through the completion of one or more Phase 2 clinical trials and will reimburse Miragen for a specified portion of such costs Miragen incurs. The costs of Phase 3 clinical trials for each product candidate will be allocated between the parties at a specied percentage of costs between the parties upon the occurrence of specified events under the Servier Colloboration Agreement, including if Miragen enters into a third-party agreement for the development and/or commercialization of a product in the United States at least 180 days before the initiation of the first Phase 3 clinical trial or if Miragen subsequently enters into a U.S. partner agreement or if Miragen does not enter into a U.S. partner agreement, but files for approval in the United States using data from the Phase 3 clinical trial. Miragen is responsible, by itself or through a third-party manufacturer, for the manufacture and supply of all licensed oligonucleotides during the pre-clinical phase of development under the Sevier Collaboration Agreement while Servier is primarily responsible for manufacture and supply of all licensed oligonucleotides and product during the clinical phase of development under the Servier Collaboration Agreement. The parties are each responsible for the commercial supply of any licensed product to be sold in each s respective territory under the Servier Collaboration Agreement.

Under the Servier Collaboration Agreement, Miragen also granted Servier a royalty-free, non-exclusive license to develop a companion diagnostic for any therapeutic product which may be developed by Servier under the Servier Collaboration Agreement. Miragen also granted Servier an exclusive, royalty free license to commercialize such a companion diagnostic for use in connection with such therapeutic product in its territory.

The Servier Collaboration Agreement will expire as to each underlying product candidate when Servier s royalty obligations as to such product candidate have expired. Servier may also terminate the Servier Collaboration

Agreement for (i) convenience upon a specified number of days prior notice to Miragen or

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(ii) upon determination of a safety issue relating to development under the agreement upon a specified number of days prior notice to Miragen. Either party may terminate the Servier Collaboration Agreement upon a material breach by the other party which is not cured within a specified number of days. Miragen may also terminate the agreement if Servier challenges any of the patents licensed by Miragen to Servier.

Miragen determined that the elements within the Servier Collaboration Agreement should be treated as a single unit of accounting because the delivered elements, the licenses, did not have standalone value to Servier at the time the license was granted. As such, Miragen recognizes license fees earned under the Servier Collaboration Agreement as revenue on a proportional performance basis over the estimated period to complete the activities under the Research Collaboration. The total period of performance is estimated to be equal to the term of the Research Collaboration. Through May 2014, the $12.4 million (9.0 million) in non-refundable license fees Miragen earned under the Servier Collaboration Agreement was being recognized as revenue through October 2014, the end of the three-year initial term of its Research Collaboration. In May 2014, Miragen changed its estimate as a result of Servier s extension of the period under which Miragen expected to perform services and, as such, began recognizing the remaining unamortized license revenue through October 2016, the estimated end of the Research Collaboration. Miragen measures its progress under the proportional performance method based on actual and estimated full-time equivalents. During the years ended December 31, 2015 and 2014, Miragen recognized license revenue of $1.2 million and $3.3 million, respectively,

In total, for the years ended December 31, 2015 and 2014, Miragen recognized $5.0 million and $7.6 million, respectively, as revenue under the Servier Collaboration Agreement. As of December 31, 2015 and 2014, deferred revenue totaled $0.5 million and $1.7 million, respectively. In addition, amounts incurred but not billed to Servier for research activities performed totaled $0.8 million as of December 31, 2015 and $1.0 million as of December 31, 2014. These amounts are included in prepaid expenses and other current assets in Miragen s consolidated balance sheets.

(4) Property and Equipment

Property and equipment consisted of the following:

	As of December 31,	
	2015	**2014**
Property and equipment, at cost:		
Lab equipment	$ 2,066,000	$ 2,010,000
Furniture and fixtures	54,000	44,000
Computer hardware and software	192,000	167,000
Leasehold improvements	629,000	449,000
	2,941,000	2,670,000
Less accumulated depreciation and amortization	(2,225,000)	(1,989,000)
Property and equipment, net	$ 716,000	$ 681,000

Depreciation and amortization expense was $0.3 million and $0.4 million for the years ended December 31, 2015 and 2014, respectively.

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(5) Accrued and Other Liabilities

Accrued and other liabilities consisted of the following:

	As of December 31,	
	2015	2014
Accrued employee compensation and related taxes	$ 496,000	$ 450,000
Deferred and accrued facility lease obligations	174,000	43,000
Accrued legal fees	24,000	142,000
Value of warrants on redeemable convertible preferred stock	169,000	92,000
Accrued property and franchise taxes	35,000	29,000
Accrued outsourced clinical and pre-clinical studies	859,000	938,000
Accrued consulting, supplies, and other expenses	51,000	32,000
	$ 1,808,000	$ 1,726,000

(6) Notes Payable

Convertible Notes Payable Issued to Investors

In February 2015, Miragen s stockholders approved the issuance of up to $20 million of convertible promissory notes and in February 2015, Miragen issued convertible promissory notes totaling $8.5 million (the Convertible Notes) to holders of its Series B redeemable convertible preferred stock (Series B). The Convertible Notes were issued in lieu of the third tranche under the Series B purchase agreement. The Convertible Notes accrued interest at a fixed rate of 6% per year and were scheduled to become due and payable any time on or after August 3, 2016 upon the demand of holders of a required threshold of the outstanding notes. The Convertible Notes and accrued interest thereon, were subject to an automatic conversion into a class of equity securities issued upon a financing that met specific criteria, which occurred in October 2015 upon the sale of Series C redeemable convertible preferred stock (Series C) (see Note 8). Under the terms of the Convertible Notes, the notes together with accrued interest were to convert at a conversion rate equal to 75% of the per share price paid for shares of Series C. However, this provision was waived by the note holders, and in October 2015, the Convertible Notes and accrued interest thereon totaling $8.9 million converted into 2,003,884 shares of Series C at a conversion rate equal to $4.43 per share, the per share price of the Series C.

Miragen concluded that the right to receive a 25% discount on the conversion to a class of equity securities in a qualified financing was a put option that needed to be valued separately. As such, Miragen recorded proceeds from the Convertible Notes based on the estimated fair value of the embedded put option ($2.7 million) and the Convertible Notes, which resulted in a debt discount of $2.7 million related to the value of the put option. This debt discount was being amortized over the term of the Convertible Notes. Upon conversion of the Convertible Notes in October 2015, Miragen recorded a loss on extinguishment of the Convertible Notes of $1.4 million, which reflects the difference between the fair value of the Series C issued in the conversion and the carrying value of the Convertible Notes.

Interest and related expenses recorded for the Convertible Notes in 2015 are as follows:

Interest based on the stated interest rate	$ 377,000

Amortization of debt discount	1,310,000
Loss on extinguishment	1,354,000
Increase in the estimated fair value of the put option	296,000
Total	$ 3,337,000

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In October 2015, the note holders waived the 25% discount. At that time and upon conversion, the put option was terminated and its estimated value of $3.0 million was transferred to additional paid-in capital. The gain was recorded to additional paid-in capital as the note holders were also holders of Series B.

2015 Notes Payable to Silicon Valley Bank

In April 2015, Miragen entered into a new loan and security agreement with Silicon Valley Bank to borrow up to $10 million in two separate tranches. The first tranche of $5.0 million was funded in May 2015 and is scheduled to be repaid over a 48-month period with interest only payments during the first 18 months (the 2015 Notes). Accelerated payments are due under certain circumstances. Amounts outstanding bear interest at the prime rate minus 0.25% (3.25% at December 31, 2015) with a final payment fee equal to 5.50% of amounts borrowed. Borrowings are secured by a priority security interest, right, and title in all business assets, excluding Miragen s intellectual property, which is subject to a negative pledge.

In April 2015 and in connection with the first tranche, Miragen issued detachable warrants to purchase up to 16,667 shares of its Series B at an exercise price of $6.00 per share. Miragen estimated the fair value of the warrants and the holder put right (see below), to be $0.1 million at the time of issuance. The fair value of the warrants was estimated using a valuation model with the following assumptions: risk free interest rate of 2.1%; 84% volatility; and contractual term of 10 years. The holder put right was valued using a probability adjusted present value method with the following assumptions as of December 31, 2015; term of two years, discount rate of 4.78%, and probability of 89.3%.

If the second tranche is requested and funded, Miragen will be required to issue additional warrants to purchase Series B. The warrants contain a put right under which Miragen may be required to repurchase the outstanding warrants for a purchase price of $0.2 million, which amount is prorated based on the proportion of the $10 million funded. The warrants were classified as a liability at the date of grant and are subject to re-measurement at each balance sheet date.

Amounts outstanding under notes payable as of December 31, 2015 are as follows:

Principal amount outstanding	$ 5,000,000
Unamortized debt discount	(89,000)
Unamortized debt issuance costs	(43,000)
Accretion of final payment fee	66,000
	4,934,000
Less: current maturities	(269,000)
Long-term notes payable	$ 4,665,000

Future annual principal payments under the 2015 Notes Payable to Silicon Valley Bank as of December 31, 2015 are as follows:

2016	$ 333,000
2017	2,000,000
2018	2,000,000

2019	667,000
Total	$ 5,000,000

(7) Commitments and Contingencies

Indemnifications

The Company has agreements whereby it indemnifies its directors and officers for certain events or occurrences while the individual is, or was, serving as a director, officer, employee, or other agent of the Company. The maximum potential amount of future payments the Company could be required to make under these indemnification agreements is unlimited.

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Employment Agreements

The Company has entered into agreements with its executives that provide for base salary, severance, eligibility for bonuses, and other generally available benefits. The agreements provide that we may terminate the employment of our executives at any time with or without cause. If an executive is terminated without cause or an executive resigns for good reason, as defined, then the executive is entitled to receive, upon the execution of a release agreement, a severance package consisting of: (i) the equivalent of 6 to 12 months of the executive s base salary as in effect immediately prior to date of termination, (ii) acceleration of vesting of the equivalent of 6 to 12 months of vesting of the executive s outstanding unvested options and other stock awards issued under our equity incentive plan, and (iii) other benefits. For the Company s chief executive, if such termination occurs one month before or thirteen months following a change of control, then, upon the execution of a release agreement, the executive is entitled to: (i) the equivalent of 24 months of the executive s base salary as in effect immediately prior to the date of termination, (ii) acceleration of vesting of all of the executive s outstanding unvested options to purchase common stock, and (iii) other benefits.

License Agreements with the University of Texas

As of December 31, 2015, Miragen had eight exclusive patent licenses agreements (the UT License Agreements) with the Board of Regents of The University of Texas System (the University of Texas). Under each of the UT License Agreements, the University of Texas granted Miragen exclusive and nonexclusive licenses to certain patent and technology rights. The University of Texas is a minority stockholder of the Company.

In consideration of rights granted by the University of Texas, Miragen agreed to (i) pay a nonrefundable upfront license documentation fee in the amount of $10 thousand per license, (ii) pay an annual license maintenance fee in the amount of $10 thousand per license starting one year from the date of each agreement, (iii) reimburse the University of Texas for actual costs incurred in conjunction with the filing, prosecution, enforcement, and maintenance of patent rights prior to the effective date, and (iv) bear all future costs of and manage the filing, prosecution, enforcement, and maintenance of patent rights. In 2015 and 2014, Miragen incurred upfront and maintenance fees under the UT License Agreements totaling $0.1 million, and recorded the amounts as research and development expense. All costs related to the filing, prosecution, enforcement, and maintenance of patent and technology rights are recorded as general and administrative expense when incurred.

Under the terms of the UT License Agreements, Miragen may be obligated to make the following future milestone payments for each licensed product candidate: (i) up to $0.6 million upon the initiation of defined clinical trials, (ii) $2.0 million upon regulatory approval in the United States, and (iii) $0.5 million per region upon regulatory approval in other specified regions. Additionally, if Miragen successfully commercializes any product candidate subject to the UT License Agreements, Miragen is responsible for royalty payments in the low-single digits and payments up to a percentage in the mid-teens of any sublicense income, subject to specified exceptions, based upon net sales of such licensed products. UT s right to these royalty payments will expire as to each license agreement upon the expiration of the last patent claim subject to the applicable UT License Agreement.

The license term extends on a country by country basis until the expiration of the last to expire of the licensed patents that covers such product in such country. Upon expiration of the royalty payment obligation, Miragen will have a fully paid license in such country. Miragen may also terminate each UT License Agreement for convenience upon a specified number of days prior notice to the University of Texas. The University of Texas also has the right to earlier terminate the UT License Agreements after a defined date under specified circumstances where Miragen has effectively abandoned its research and development efforts or has no sales. The UT License Agreements will terminate under customary termination provisions including Miragen s bankruptcy or insolvency, material breach, and

upon mutual written consent. Miragen has expensed all charges incurred under the UT License Agreements to date, due to the uncertainty as to future economic benefit from the acquired rights.

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Sponsored Research Agreements with the Hubrecht Institute

In 2013, Miragen entered into two separate sponsored research agreements (the Hubrecht Research Agreements) with the Hubrecht Institute (Hubrecht). Under the terms of the Hubrecht Research Agreements, Hubrecht is to provide the personnel, facilities, and equipment necessary to carry out a research program for Miragen s benefit. Miragen incurred expenses under these agreements of $0.1 million and $0.2 million during the years ended December 31, 2015 and 2014, respectively.

License Agreement with Roche Innovation Center Copenhagen A/S (formerly Santaris Pharma A/S)

In June 2010, Miragen entered into a license agreement with the Santaris Pharma A/S, which has changed its name to Roche Innovation Center Copenhagen A/S (RICC), which was subsequently amended in October 2011 and amended and restated in December 2012 (the RICC License Agreement). In 2014, Santaris Pharma A/S was acquired by F. Hoffmann-La Roche Ltd (Roche) and has become a wholly owned subsidiary of Roche.

Under the RICC License Agreement, Miragen received exclusive and nonexclusive licenses from RICC to use specified technology of RICC (the RICC Technology) for specified uses including research, development, and commercialization of pharmaceutical products using this technology worldwide. Under the RICC License Agreement, Miragen has the right to develop and commercialize the RICC Technology directed to four specified targets and the option to obtain exclusive product licenses for up to six additional targets. The acquisition of Santaris Pharma A/S by Roche was considered a change-of-control under the agreement, and as such, certain terms and conditions of the RICC License Agreement changed, as contemplated and in accordance with the RICC License Agreement. These changes primarily relate to milestone payments reflected in the disclosures below. As consideration for the grant of the license and option, Miragen previously paid RICC $2.3 million and issued RICC 856,806 shares of its Series A preferred stock, which are now owned by Roche Finance Ltd, an affiliate of Roche. If Miragen exercises its option to obtain additional product licenses or to replace the target families, Miragen will be required to make additional payments to RICC.

Under the terms of the RICC License Agreement, milestone payments were previously decreased by a specified percentage as a result of the change of control by RICC referenced above. Miragen is obligated to make future milestone payments for each licensed product for up to $5.2 million. Certain of these milestones will be increased by a specified percentage if Miragen undergoes a change in control during the term of the RICC License Agreement. If Miragen grants a third party a sublicense to the RICC Technology, in lieu of the fixed milestone payments noted above, Miragen is required to remit to Roche up to a specified percentage of the upfront and milestone payments Miragen receives under its sublicense.

If Miragen successfully commercializes any product candidate subject to the RICC License Agreements, then RICC is entitled to royalty payments in the mid-single digits on the net sales of such product, provided that if such net sales are made by a sublicensee under the RICC License Agreement, RICC is entitled to royalty payments equal to the lesser of a percentage in the mid-single digits on the net sales of such product or a specified percentage of the royalties paid to Miragen by such sublicensee, subject to specified restrictions. Miragen is obligated to make any such royalty payments until the later of (i) a specified anniversary of the first commercial sale of the applicable product or (ii) the expiration of the last valid patent claim licensed by RICC under the RICC License Agreement underlying such product. Upon the occurrence of specified events, the royalty owed to RICC will be decreased by a specified percentage.

The RICC License Agreement will terminate upon the latest of the expiration of all of RICC s royalty rights, the termination of the last Miragen target or the expiration of its right to obtain a product license for a new target under

the RICC License Agreement. Miragen may also terminate the RICC License Agreement for convenience upon a specified number of days prior notice to RICC, subject to specified terms and conditions. Either party may terminate the RICC License Agreement upon an uncured material breach by the other party and RICC may terminate the RICC License Agreement upon the occurrence of other specified events that are not cured within a specified number of days.

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Miragen has expensed all charges incurred under the RICC License Agreement to date, due to the uncertainty as to future economic benefit from the acquired rights.

Subcontract Agreement with Yale University

In October 2014, Miragen entered into a subcontract agreement (the Yale Agreement) with Yale University (Yale) which was subsequently amended in February 2016 and November 2016. Under the Yale Agreement, Miragen agreed to provide specified services regarding the development of a proprietary compound that targets microRNA-29 in the indication of idiopathic pulmonary fibrosis. Yale entered into the Yale Agreement in connection with a grant that Yale received from the National Institutes of Health (NIH) for the development a microRNA-29 mimicry as a potential therapy for pulmonary fibrosis.

In consideration of Miragen s services under the Yale Agreement, Yale has agreed to pay Miragen up to $1.1 million. Under the terms of the Yale Agreement, Miragen retains all rights to any and all intellectual property developed solely by Miragen in connection with the Yale Agreement. Yale has also agreed to provide Miragen with an exclusive option to negotiate in good faith for an exclusive, royalty-bearing license from Yale for any intellectual property developed by Yale or jointly by the parties under the Yale Agreement. Yale is responsible for filing, prosecuting and maintaining foreign and domestic patent applications and patents on all inventions jointly developed by the parties under the Yale Agreement.

The Yale Agreement terminates automatically on the date that Yale delivers its final research report to the NIH under the terms of the grant underlying the Yale Agreement. Either party may also terminate the Yale Agreement upon a specified number of days notice in the event that the NIH s grant funding is reduced or terminated or upon material breach by the other party.

License Agreements with the t2cure GmbH

In October 2010, Miragen entered into a license and collaboration agreement (the t2cure Agreement) with the t2cure GmbH (t2cure), which was subsequently amended in July 2014. Under the t2cure Agreement, Miragen received a worldwide, royalty bearing, and exclusive license to specified patent and technology rights to develop and commercialize product candidates targeted at miR-92.

In consideration of rights granted by t2cure, Miragen paid a onetime upfront fee of $46 thousand and agreed to: (i) pay an annual license maintenance fee in the amount of 3 thousand ($3 thousand at December 31, 2015), and (ii) reimburse t2cure for 100% of actual costs incurred in conjunction with the filing, prosecution, enforcement, and maintenance of patent rights prior to the effective date. All costs related to the filing, prosecution, enforcement, and maintenance of patent and technology rights are recorded as general and administrative expense when incurred.

Under the terms of the t2cure Agreement, Miragen is obligated to make the following future milestone payments for each licensed product: (i) up to $0.7 million upon the initiation of certain defined clinical trials, (ii) $2.5 million upon regulatory approval in the United States, and (iii) up to $1.5 million per region upon regulatory approval in the European Union or Japan. Additionally, if Miragen successfully commercializes any product candidate subject to the t2cure Agreement, Miragen is responsible for royalty payments in the low-single digits upon net sales of licensed products and sublicense fees equal to a percentage in the low-twenties of sublicense income to Miragen. Miragen is obligated to make any such royalty payment until the later of (i) the tenth anniversary of the first commercial sale of the applicable product or (ii) the expiration of the last valid claim to a patent licensed by t2cure under the t2cure Agreement covering such product. If such patent claims expire prior to the end of the ten year term, then the royalty owed to t2cure will be decreased by a specified percentage.

The license term extends on a country by country basis until the later of: (i) the tenth anniversary of the first commercial sale of a licensed product in a country, and (ii) the expiration of the last to expire valid claim that claims such licensed product in such country. Upon expiration of the royalty payment obligation,

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Miragen will have a fully paid license in such country. Miragen has the right to terminate the t2cure Agreement at will, on a country-by-country basis, after 60 days written notice.

Miragen has expensed all charges incurred under the t2cure Agreement to date, due to the uncertainty as to future economic benefit from the acquired rights.

Facility Lease

In December 2010, Miragen entered into a lease agreement for office and lab space (Crestview Lease) and in 2015, Miragen amended this lease agreement to extend its term through August 2020.

In April 2013, Miragen entered into separate lease agreement for additional office space (Westview Lease) and in 2015, Miragen amended this lease agreement to extend its term by four months through October 2015. This lease expired in 2015 and was not renewed.

Miragen s Crestview Lease is noncancelable. Minimum base lease payments, including the impact of tenant improvement allowances, under the operating lease are recognized on a straight-line basis over the full term of the lease. Rent expense for the Crestview and Westview Leases was $0.2 million during 2015 and 2014. Miragen is also required to pay for a portion of the operating expenses for each facility and during 2015 and 2014, Miragen expensed $0.2 million related to this additional rent expense.

Future minimum payments under the Crestview Lease is as follows:

2016	$ 328,000
2017	379,000
2018	391,000
2019	404,000
2020	277,000
Total	$ 1,779,000

(8) Capital Stock

Miragen is authorized to issue 43,435,888 shares of its stock; 24,780,394 shares have been designated as common stock with a par value of $0.001 per share (Common Stock); and 18,655,494 shares have been designated as preferred stock (Series Preferred) with a par value of $0.001 per share. Of the 18,655,494 shares of preferred stock, 7,169,176 shares are designated as Series A redeemable convertible preferred stock (Series A); 2,183,318 shares are designated as Series B; and 9,303,000 shares are designated as Series C. The number of authorized shares of Common Stock may be increased or decreased by the affirmative vote of the holders of a majority of Miragen s stock who are entitled to vote.

Common Stock

Each share of Common Stock is entitled to one vote. Subject to prior rights of the Series Preferred, the holders of Miragen s Common Stock are entitled to receive dividends when and as declared or paid by its board of directors.

Series Preferred

In June 2014, Miragen sold 1,166,660 shares of its Series B at $6.00 per share. Total proceeds were $7.0 million, net of $14 thousand in issuance costs.

In October 2015, Miragen sold 3,632,342 shares of its Series C at $4.43 per share. Total proceeds were $15.9 million, net of $0.2 million in issuance costs. Concurrent with this financing, all of the outstanding Convertible Notes together with interest accrued thereon together totaling $8.9 million converted into 2,003,884 shares of Series C at a conversion rate equal to $4.43 per share.

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Holders of Series Preferred have the following rights and preferences:

Dividends Provisions

Holders of Series Preferred, in preference to holders of common stock, are entitled to receive when, as, and if declared by Miragen s board of directors, noncumulative dividends at the rate of 8% of the original purchase price per year.

Except for certain defined exclusions, as long as shares of Series Preferred are outstanding, no i) payment or declaration of any dividend, ii) distribution on Common Stock, or iii) purchase for value any shares of Common Stock shall occur until dividends on Series Preferred have been paid or declared.

Liquidation Preferences

With respect to rights on liquidation, shares of preferred stock rank senior and prior to the shares of Common Stock. In the event of any liquidation, dissolution, or winding up of the Company or an acquisition or asset transfer, each as defined, preferred stockholders shall be entitled to receive an amount per share equal to the original purchase price, plus all declared but unpaid preferred stock dividends, if any, before any payment shall be made to the holders of Common Stock. After payment of the full liquidation preference to Series Preferred, the holders of Series Preferred participate with holders of Common Stock in the remaining proceeds on an as-if-converted to Common Stock basis. At December 31, 2015, the aggregate liquidation preference of the Series A, B, and C was $21.5 million, $13.0 million and, $25.0 million, respectively.

Redemption Rights

At the election of the holders of at least 70% of the then outstanding Series Preferred, Miragen is required to redeem, in three annual installments beginning not prior to the fifth anniversary of the original issue date of the Series C (not prior to October 2020), all of the shares of Series Preferred then outstanding at a redemption price per share equal to the sum of the original issue price of $3.00 per share for Series A preferred, $6.00 per share for Series B, and $4.43 per share for Series C, plus declared but unpaid dividends, if any.

As the Series Preferred stockholders can collectively control the redemption of the Series Preferred stock, Miragen has elected to present the Series Preferred within temporary equity.

Conversion to Common Stock

Series Preferred stockholders have the right, at any time, to convert any or all of their Series Preferred into fully paid and nonassessable shares of Common Stock in a ratio equal to the quotient of the original purchase price ($3.00 per share for Series A, $6.00 per share for Series B, and $4.43 per share for Series C) divided by the Series Preferred conversion price, as adjusted ($3.00 per share for Series A, $6.00 per share for Series B, and $4.43 per share for Series C at December 31, 2015). Automatic conversion of all outstanding shares of Series Preferred into shares of Common Stock occurs if elected by at least 70% of the holders of Series Preferred or immediately upon the closing of a firm commitment underwritten public offering pursuant to an effective registration statement under the Securities Act of 1933, in which the per share price is at least $9.00, as adjusted, and net cash proceeds are at least $35 million.

The conversion price of the Series Preferred is subject to customary anti-dilution provisions and automatic downward adjustments in the event of certain sales or issuances of Miragen s Common Stock or equivalents thereof, subject to specified exceptions, at a price below the conversion price of the Series Preferred ($3.00 per Series A share, $6.00 per Series B share, and $4.43 per Series C share at December 31, 2015). Miragen evaluated this contingently adjustable

conversion feature and concluded that incremental intrinsic value

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should be recognized when and if such an anti-dilution adjustment is triggered. In 2015, Miragen issued Series C at $4.43 per share, which was below the Series B Preferred conversion price of $6.00 per share. Concurrent with this transaction, holders of Series B Preferred waived the contingently adjustable conversion feature for this transaction. The impact of this anti-dilution adjustment and subsequent waiver was immaterial to Miragen s financial statements.

At December 31, 2015, Miragen had 14,952,053 shares of Common Stock reserved for the conversion of Series Preferred into common stock.

Voting Rights

Each holder of Series Preferred is entitled to the number of votes equal to the number of shares of common stock into which shares of preferred stock could be converted. Under certain circumstances, however, holders of Series Preferred are entitled to vote as a separate class or separate classes, as the case may be.

For so long as at least 500,000 shares Series Preferred remain outstanding, the vote of the holders of at least 70% of the outstanding Series Preferred is required for certain actions including but not limited to: authorization of a new class of stock, amendment to the bylaws of the company, declaration or payment of dividends, approval of asset transfers, mergers, liquidation of the company, exclusive license of intellectual property, change in the authorized number of members of Miragen s board of directors, changes in chief executive officer, and new borrowings of the company in excess of $250,000.

The consent of holders of at least 65% of Series A and a holders of a majority of Series B, as the case may be, is required for any changes to Miragen s certificate of incorporation or bylaws that alters the voting or other powers, preferences, or rights of the respective Series A and Series B so as to affect them adversely in a manner different from other Series Preferred.

The consent of a majority of the outstanding shares of Series C, which shall include the affirmative vote of at least one of two named Series C, is required for: a) any changes to Miragen s certificate of incorporation or bylaws that alters the voting or other powers, preferences, or rights of the respective Series C adversely in a manner different from other Series Preferred; and b) any authorization or designation of any new class or series of stock or any other convertible securities or any increase in the authorized or designated number of any such new class or series.

For so long as at least 300,000 shares of Series A, B, and C remain outstanding, the holders of Series A, B, and C Preferred each voting as a separate class are entitled to elect a total of five members of Miragen s board of directors (two by Series A holders, one by Series B holders, and two by Series C holders). Voting as a single class, the Series A, Series B, Series C, and common stockholders are entitled to elect all remaining members of Miragen s board of directors. Miragen s bylaws provide that the number of directors shall be fixed by the board of directors from time to time. Currently, there are seven members of Miragen s board of directors and one open Series C seat.

(9) Stock-Based Compensation

Equity Incentive Plan

In 2008, Miragen s board of directors approved the 2008 Equity Plan. The 2008 Equity Plan was subsequently amended in June 2009, April 2012, and October 2015 to increase the number of shares authorized for issuance. As of December 31, 2015, there were 3,672,515 shares authorized for issuance as awards under the Equity Plan, of which 922,991 shares remain available for future issuances.

The 2008 Equity Plan provides for the issuance of rights to receive common stock including stock options, restricted stock awards, and other similar awards. Common stock options granted under the 2008 Equity Plan may be either incentive or nonstatutory stock options. Incentive stock options, or ISOs, may only be granted to employees. Nonstatutory stock options may be granted to employees, directors, and non-employee consultants.

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The 2008 Equity Plan is administered by Miragen s board of directors, which has the authority to select individuals to whom awards will be granted, the number of shares, vesting, exercise price, and term of each option grant. Options granted under the 2008 Equity Plan have an exercise price equal to the market value of the underlying shares at the date of grant and expire 10 years from the date of grant. Generally, options vest 25% on the first anniversary of the vesting commencement date and 75% ratably in equal monthly installments over the remaining 36 months. Miragen has also granted options that vest in equal monthly or quarterly amounts over periods ranging from 24 to 48 months.

Fair Value Assumptions

Miragen uses the Black-Scholes option pricing model to estimate the fair values of stock options. The Black-Scholes model requires inputs for risk-free interest rate, dividend yield, volatility, and expected lives of the options. Since Miragen has a limited history of stock purchase and sale activity, expected volatility is based on historical data from public companies similar to Miragen in size and nature of operations. Miragen will continue to use similar entity volatility information until its historical volatility is relevant to measure expected volatility for option grants. Miragen has not applied a forfeiture rate to its assumptions as the impact would not be material to the consolidated financial statements. The risk-free rate for periods within the contractual life of each option is based on the U.S. Treasury yield curve in effect at the time of the grant for a period commensurate with the expected term of the grant. The expected term (without regard to forfeitures) for options granted represents the period of time that options granted are expected to be outstanding and is derived from the contractual terms of the options granted and expected option exercise behaviors. Miragen estimates the fair value of underlying common shares using a third-party valuation report that has derived the fair value using the probability-weighted expected return method.

The fair values of employee stock options were estimated at the date of grant using the Black-Scholes model with the following weighted-average assumptions and had the following estimated weighted average grant-date fair value per share during the years ended December 31, 2015 and 2014:

	2015	2014
Expected term	5 years	5 years
Expected volatility	84%	95%
Risk-free interest rate	1.68%	1.66%
Expected dividend yield	0.00%	0.00%
Weighted-average fair value of underlying common stock at the grant date	$ 0.74	$ 0.79
Weighted-average grant date fair value per option	$ 0.49	$ 0.57

Miragen accounts for stock options issued to non-employees by valuing the awards using the Black-Scholes option pricing model and adjusting the value of such awards to current fair value each reporting period until the awards are vested or a performance commitment has otherwise been reached. The following weighted-average assumptions were used to value non-employee stock options granted or vested during the years ended December 31, 2015 and 2014:

	2015	2014
Remaining contractual term	9.94 years	9.70 years
Expected volatility	84%	95%
Risk-free interest rate	2.27%	2.17%
Expected dividend yield	0.00%	0.00%

Weighted-average fair value of underlying common stock	$ 0.74	$ 0.78
Weighted-average fair value per option	$ 0.62	$ 0.68

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Summary of Activity

A summary of stock options activity under the 2008 Equity Plan for the years ended December 31, 2015 and 2014 is as follows:

	Number of options	Weighted-average exercise price	Weighted-average remaining contractual term (years)	Aggregate intrinsic value
Options outstanding at December 31, 2013	2,436,000	$ 0.66		
Granted	282,000	0.79		
Exercised	(21,000)	0.42		
Canceled	(14,000)	0.76		
Options outstanding at December 31, 2014	2,683,000	0.67		
Granted	18,000	0.74		
Canceled	(22,000)	0.71		
Options outstanding at December 31, 2015	2,679,000	0.67	5.57	$ 353,000
Vested or expected to vest at December 31, 2015	2,679,000	0.67	5.57	$ 353,000
Exercisable as of December 31, 2015	2,360,000	$ 0.65	5.25	$ 353,000

The total intrinsic value of stock options exercised was $8 thousand during the year ended December 31, 2014. Cash received from the exercise of stock options was approximately $9 thousand for the year ended December 31, 2014. No options were exercised during the year ended December 31, 2015

Stock-Based Compensation Expense

Stock-based compensation related to employee stock options is included in the consolidated statements of operations as follows:

	Year ended December 31,	
	2015	2014
Research and development	$ 43,000	$ 39,000
General and administrative	94,000	92,000

	$ 137,000	$ 131,000

As of December 31, 2015, Miragen had $0.15 million of total unrecognized employee stock-based compensation costs, which Miragen expects to be recognized over a weighted-average remaining period of 1.68 years.

Miragen recognized $0.2 and $0.1 million of stock-based compensation related to non-employee stock options during the years ended December 31, 2015 and 2014, respectively. The amounts are included in general and administrative expenses in the consolidated statements of operations. As of December 31, 2015, based on Miragen s current estimate of fair value, it estimates that the remaining unrecognized stock-based compensation expense related to non-employees of $30 thousand will be expensed over a weighted-average remaining period of 2.67 years.

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(10) Warrants

Warrant activity for the years ended December 31, 2015 and 2014 is as follows:

	Common Stock Warrants		Preferred Stock Warrants	
	Number	Weighted-Average Exercise Price	Number	Weighted Average Exercise Price
Outstanding at December 31, 2013	10,000	$ 0.40	20,000	$ 3.00
Granted				
Outstanding at December 31, 2014	10,000	$ 0.40	20,000	$ 3.00
Granted			16,667	6.00
Outstanding at December 31, 2015	10,000	$ 0.40	36,667	$ 4.36

A summary of outstanding warrants as of December 31, 2015 is as follows:

Common Stock Warrants

Number of underlying shares	Exercise Price	Expiration Date
10,000	$ 0.40	2018

Preferred Stock Warrants

Number of underlying shares	Series of Preferred	Exercise Price	Expiration Date
20,000	A	$ 3.00	2018
16,667	B	6.00	2025
36,667			

At December 31, 2015 and 2014, Miragen estimated the fair value of the warrants to purchase Series A to be $50 thousand and $92 thousand, respectively. The fair value of the warrants was estimated using the Black-Scholes option pricing model with the following assumptions as of December 31, 2015: risk-free interest rate of 1.06%; 84% volatility; remaining contractual term of approximately three years; no dividend yield; and an estimated fair value of the underlying redeemable convertible preferred stock of $4.43 per share.

As of December 31, 2015, Miragen estimated the fair value of the warrants to purchase Series B and the holder put right to be $0.1 million. The fair value of the warrants was estimated using a valuation model with the following assumptions as of December 31, 2015: risk free interest rate of 2.1%; 84% volatility; and contractual term of 10 years.

The holder put right was valued using a probability adjusted present value method with the following assumptions as of December 31, 2015; term of 2 years, discount rate of 4.78%, and probability of 89.3%. See Note 6 for further discussion of the terms and conditions of the warrants.

(11) Income Taxes

Since its inception, Miragen has incurred net taxable losses, and accordingly, no current provision for income taxes has been recorded. This amount differs from the amount computed by applying the U.S. federal income tax rate of 35% to pretax loss due to the provision of a valuation allowance to the extent of Miragen s net deferred tax asset, as well as to state income taxes and nondeductible expenses. The tax effects of temporary differences related to net operating loss and tax credit carryforwards, start-up costs, property and equipment, accrued liabilities, and stock-based compensation give rise to significant portions of the deferred tax assets and deferred tax liabilities.

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The effective tax rate of the provision for income taxes differs from the federal statutory rate as follows:

	Year ended December 31,	
	2015	2014
Federal statutory income tax rate	35.00%	35.00%
State income taxes, net of federal benefit	3.25	3.25
Federal and state tax credits	3.71	6.79
Amortization of interest and related charges	(8.74)	
Change in valuation allowance	(33.22)	(44.08)
Other, net		(0.96)
Net deferred tax assets	%	%

The components of the deferred tax assets and liabilities are as follows:

	As of December 31,	
	2015	2014
Deferred tax assets:		
Net operating loss carryforwards	$ 14,904,000	$ 9,839,000
Tax credits	1,882,000	1,300,000
Start-up costs	1,558,000	1,702,000
Deferred revenue	198,000	650,000
Accruals and reserves	371,000	212,000
Gross deferred tax assets	18,913,000	13,703,000
Valuation allowance	(18,913,000)	(13,703,000)
Net deferred tax assets	$	$

At December 31, 2015, Miragen had approximately $39.0 million and $1.9 million of net operating loss and research and experimentation tax carryforwards, respectively, which are set to expire beginning in 2027. The Internal Revenue Code contains provisions that may limit the net operating loss carryovers available to be used in any year if certain events occur, including significant changes in ownership interest.

As of December 31, 2015 and 2014, Miragen s net deferred tax assets before valuation allowance totaled approximately $18.9 million and $13.7 million, respectively. In assessing the realizability of its deferred tax assets, Miragen considers whether it is more likely than not that some portion or all of its deferred tax assets will not be realized. The ultimate realization of deferred tax assets is dependent upon the generation of future taxable income during the periods in which those temporary differences become deductible. Miragen considers the scheduled reversal of deferred tax liabilities, projected future taxable income, and tax planning strategies in making this assessment. As Miragen does not have any historical taxable income, projections of future taxable income over the periods in which the deferred tax assets are deductible, and after consideration of its history of operating losses, Miragen does not believe it is more likely than not that Miragen will realize the benefits of its net deferred tax assets, and accordingly, Miragen has established a valuation allowance equal to 100% of its net deferred tax assets at December 31, 2015 and

2014. The increase in valuation allowance was $5.2 million in 2015 and $2.6 million in 2014.

Miragen has concluded that there were no significant uncertain tax positions relevant to the jurisdictions where Miragen is required to file income tax returns requiring recognition in the consolidated financial statements for the years ended 2015 and 2014.

Miragen has recognized no interest for the years ended 2015 and 2014 related to uncertain tax positions. As of December 31, 2015 and 2014, Miragen had no accrued interest related to uncertain tax positions.

Miragen monitors proposed and issued tax law, regulations, and cases to determine the potential impact of uncertain income tax positions. At December 31, 2015, Miragen had not identified any potential subsequent events that would have a material impact on unrecognized income tax benefits within the next twelve months.

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Miragen s federal and state returns for 2011 through 2015 remain open to examination by tax authorities.

(12) Net Loss per Share

Basic net loss per share is computed by dividing the net loss by the weighted-average number of common shares outstanding. Diluted net loss per share is computed similarly to basic net loss per share except that the denominator is increased to include the number of additional common shares that would have been outstanding if the potential common shares had been issued and if the additional common shares were dilutive. Diluted net loss share is the same as basic net loss per common share, since the effects of potentially dilutive securities are antidilutive.

As of December 31, 2015 and 2014, potentially dilutive securities include:

	2015	2014
Convertible preferred stock	14,952,053	9,315,827
Warrants to purchase preferred stock	36,667	20,000
Warrants to purchase common stock	10,000	10,000
Options to purchase common stock	2,678,566	2,682,538
Total	17,677,286	12,028,365

(13) Subsequent Events

Merger Agreement

Signal Genetics, Inc. (Signal) and Miragen have entered into an Agreement and Plan of Merger and Reorganization, dated October 31, 2016 (the Merger Agreement). The Merger Agreement contains the terms and conditions of the proposed business combination of Signal and Miragen. Under the Merger Agreement, Signal Merger Sub, Inc., a wholly-owned subsidiary of Signal, will merge with and into Miragen, with Miragen surviving as a wholly-owned subsidiary of Signal. After the completion of the Merger, Signal will change its corporate name to Miragen Therapeutics, Inc. as required by the Merger Agreement.

Subscription Agreement

On October 31 2016, Miragen entered into a subscription agreement with certain current stockholders of Miragen and certain new investors pursuant to which the purchasers agreed to purchase an aggregate of 9,045,126 shares of Miragen s common stock at a price per share of $4.50 for an aggregate consideration of approximately $40.7 million immediately prior to the consummation of the Merger, subject to specified conditions in the subscription agreement.

Engagement of WedBush

Miragen entered into an agreement with Wedbush Securities Inc. (Wedbush), in August 2016, under which Miragen agreed to engage Wedbush to act as exclusive placement agent in connection with a private financing. Miragen paid a non-refundable, creditable retainer of $25 thousand in August 2016 and agreed to pay a financing fee of 6% of the gross proceeds, as defined, from capital raised in a transaction. Miragen also agreed to a minimum fee of $1.0 million

which will become due and payable if and when gross proceeds from all investors equals or exceeds $10 million. The initial term of this agreement extends for 12 months to August 2017, provided however, that either party may terminate with the appropriate written notice. The financing fee will apply during the initial term plus a 12-month tail period, as defined in the agreement.

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License Agreement with The Brigham and Women s Hospital

In May 2016, the Company entered into an exclusive patent license agreement (the BWH License Agreement) with The Brigham and Women s Hospital (BWH). Under the BWH License Agreement, BWH granted Miragen an exclusive, worldwide license, including a right to sublicense, to specified technology and patent rights of BWH. As consideration for this exclusive license, the Company paid BWH a specified issue fee and is obligated to pay a specified annual license fee. BWH is also entitled to milestone payments of up to $2.6 million for any of the Company s product candidates developed based on the patent rights subject to the BWH License Agreement plus a one-time sales milestone payment of $0.25 million for all product candidates developed based on the patent rights subject to the BWH License Agreement. If the Company were to successfully commercialize any product candidate subject to the BWH License Agreement, then BWH is entitled to royalty payments in the low- single digits on the net sales of such product. BWH s right to these royalty payments will expire upon the expiration of the last patent claim subject to BWH License Agreement. BWH is also entitled to a percentage in the low-double digits of any sublicense income from such product, subject to specified exceptions. The Company is also responsible for all costs associated with the preparation, filing, prosecution and maintenance of the patent rights subject to the BWH License Agreement.

Additionally, the Company is obligated to use commercially reasonable efforts to develop a product under the BWH License Agreement and to meet specified diligence milestones thereunder. The BWH License Agreement will terminate upon the expiration of all issued patents and patent applications subject to the patent rights under the agreement. Miragen may also terminate the BWH License Agreement for convenience upon a specified number of days prior notice to BWH. BWH may terminate the BWH License Agreement upon a material breach by the Company of its payment obligations and upon the occurrence of other specified events that are not cured within a specified number of days.

Amendment of Servier Agreement

Miragen entered into an amendment of the Servier Collaboration Agreement, effective September 2016. Under the terms of the amendment, Servier agreed to extend the Research Collaboration from October 2016 to October 2017.

Amendment of Silicon Valley Bank Loan and Security Agreement

In December 2016, Miragen amended its loan and security agreement with Silicon Valley Bank to extend the draw period of the second tranche from December 31, 2016 to July 31, 2017.

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Miragen Therapeutics, Inc.

Condensed Consolidated Balance Sheets

(Unaudited)

	September 30, 2016	December 31, 2015
Assets		
Current:		
Cash and cash equivalents	$ 24,598,000	$ 21,235,000
Short-term investments	1,001,000	
Accounts receivable	9,000	
Prepaid expenses and other current assets	1,872,000	1,327,000
Total current assets	27,480,000	22,562,000
Property and equipment, net	696,000	716,000
Other assets	258,000	258,000
Total assets	$ 28,434,000	$ 23,536,000
Liabilities, Preferred Stock, and Stockholders Deficit		
Current liabilities:		
Accounts payable	$ 130,000	$ 715,000
Accrued and other liabilities	2,657,000	1,808,000
Current portion of notes payable	1,805,000	269,000
Current portion of deferred revenue	80,000	519,000
Total current liabilities	4,672,000	3,311,000
Notes payable, less current portion	3,293,000	4,665,000
Total liabilities	7,965,000	7,976,000
Series A redeemable convertible preferred stock, $0.001 par value; 7,169,176 shares authorized; 7,149,176 shares issued and outstanding; liquidation preference of $21,448,000; stated at accreted redemption value	23,122,000	23,116,000
Series B redeemable convertible preferred stock, $0.001 par value; 2,183,318 shares authorized; 2,166,651 shares issued and outstanding; liquidation preference of $13,000,000; stated at accreted redemption value	12,974,000	12,970,000
Series C redeemable convertible preferred stock, $0.001 par value; 9,303,000 shares authorized; 9,268,563 and 5,636,226 shares issued and outstanding, respectively; liquidation preference of $41,060,000; stated at accreted redemption value	40,871,000	24,764,000
Stockholders deficit:		
Common stock, $0.001 par value; 24,780,394 shares authorized; 855,734 shares issued and outstanding	1,000	1,000

Additional paid-in capital	4,591,000	4,462,000
Accumulated deficit	(61,090,000)	(49,753,000)
Total stockholders deficit	(56,498,000)	(45,290,000)
Total liabilities, preferred stock, and stockholder s deficit	$ 28,434,000	$ 23,536,000

See accompanying notes to these unaudited interim condensed consolidated financial statements.

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Miragen Therapeutics, Inc.

Condensed Consolidated Statements of Operations

(Unaudited)

	Nine Months Ended September 30,	
	2016	**2015**
Revenue		
Revenue under strategic alliance and collaboration	$ 2,479,000	$ 3,997,000
Grant revenue	490,000	19,000
Total revenue	2,969,000	4,016,000
Operating expenses:		
Research and development	9,786,000	9,918,000
General and administrative	4,255,000	2,902,000
Total operating expenses	14,041,000	12,820,000
Loss from operations	(11,072,000)	(8,804,000)
Other income (expense):		
Interest and other income	21,000	2,000
Interest and other related expense	(250,000)	(1,601,000)
Net loss	(11,301,000)	(10,403,000)
Accretion of preferred stock to redemption value	(36,000)	(24,000)
Net loss available to common stockholders	$ (11,337,000)	$ (10,427,000)
Net loss per share, basic and diluted	$ (13.25)	$ (12.18)
Shares used in computing net loss per share, basic and diluted	855,734	855,734

See accompanying notes to these unaudited interim condensed consolidated financial statements.

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Miragen Therapeutics, Inc.

Condensed Consolidated Statements of Preferred Stock and Stockholders Deficit

(Unaudited)

Redeemable Convertible Preferred Stock						Stockholders deficit			
Series A		Series B		Series C		Common stock		Additional paid-in capital	Accumulated deficit
Shares	Amount	Shares	Amount	Shares	Amount	Shares	Amount		
7,149,176	$ 23,116,000	2,166,651	$ 12,970,000	5,636,226	$ 24,764,000	855,734	$ 1,000	$ 4,462,000	$ (49,753,000)
				3,632,337	16,081,000				
								129,000	
	6,000		4,000		26,000				(36,000)
									(11,301,000)
7,149,176	$ 23,122,000	2,166,651	$ 12,974,000	9,268,563	$ 40,871,000	855,734	$ 1,000	$ 4,591,000	$ (61,090,000)

See accompanying notes to these unaudited condensed consolidated financial statements.

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Miragen Therapeutics, Inc.

Condensed Consolidated Statements of Cash Flows

(Unaudited)

	Nine months Ended September 30,	
	2016	**2015**
Cash flows from operating activities:		
Net loss	$ (11,301,000)	$ (10,403,000)
Adjustments to reconcile net loss to net cash used in operating activities:		
Depreciation and amortization	253,000	208,000
Stock-based compensation	129,000	175,000
Amortization of premium/discount on short-term investments	8,000	
Interest expense and other charges related to convertible notes		1,173,000
Amortization and accretion expenses on notes payable	125,000	65,000
Change in value of preferred stock warrants	2,000	(36,000)
Changes in operating assets and liabilities:		
Accounts receivable	(9,000)	(28,000)
Prepaid expenses and other assets	(545,000)	(336,000)
Deferred revenue	(439,000)	(964,000)
Accounts payable and accrued liabilities	308,000	34,000
Net cash used in operating activities	(11,469,000)	(10,112,000)
Cash flows from investing activities:		
Purchases of marketable securities	(1,009,000)	
Purchases of property and equipment	(240,000)	(52,000)
Net cash used in investing activities	(1,249,000)	(52,000)
Cash flows from financing activities:		
Proceeds from issuance of preferred stock	16,091,000	
Preferred stock issuance costs	(10,000)	
Proceeds from issuance of convertible notes payable		8,500,000
Convertible notes payable issuance costs		(23,000)
Proceeds from issuance of notes payable		5,000,000
Notes payable issuance costs		(58,000)
Net cash provided by financing activities	16,081,000	13,419,000
Net increase in cash and cash equivalents	3,363,000	3,255,000
Cash and cash equivalents at beginning of period	21,235,000	5,114,000

Cash and cash equivalents at end of period	$ 24,598,000	$ 8,369,000
Noncash investing and financing activities:		
Preferred stock warrants issued in conjunction with notes payable	$	$ 121,000

See accompanying notes to these unaudited interim condensed consolidated financial statements.

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Miragen Therapeutics, Inc.

Notes to Unaudited Interim Condensed Consolidated Financial Statements

(1) Organization and Basis of Presentation

Miragen Therapeutics, Inc. was originally formed as a Delaware corporation in February 2006. The corporation changed its name to Miragen Therapeutics, Inc. in July 2007 and the Company began its operations. In January 2011, Miragen Therapeutics Europe Limited (Miragen Europe) was formed as a wholly-owned subsidiary of Miragen Therapeutics, Inc. for the sole purpose of submitting regulatory filings in Europe. Miragen Europe has no employees or operations. As used in this report, unless the context suggests otherwise, the Company, and Miragen means Miragen Therapeutics, Inc.

Miragen is a clinical-stage biopharmaceutical company discovering and developing proprietary RNA-targeted therapeutics with a specific focus on microRNAs and their role in diseases where there is a high unmet medical need. microRNAs are short RNA molecules, or oligonucleotides, that regulate gene expression or activity and play a vital role in influencing the pathways responsible for many disease processes. Miragen uses its expertise in systems biology and oligonucleotide chemistry to discover and develop a pipeline of product candidates. Miragen s two lead product candidates, MRG-106 and MRG-201, are currently in Phase 1 clinical trials. Miragen s clinical product candidate for the treatment of certain cancers, MRG-106, is an inhibitor of microRNA-155, or miR-155, which is found at abnormally high levels in several blood cancers. Miragen s clinical product candidate for the treatment of pathological fibrosis, MRG-201, is a replacement for miR-29, which is found at abnormally low levels in a number of pathological fibrotic conditions, including cardiac, renal, hepatic, and pulmonary fibrosis, as well as systemic sclerosis. In addition to Miragen s clinical programs, it is developing a pipeline of pre-clinical product candidates. The goal of Miragen s translational medicine strategy is to progress rapidly to first in human studies once it has established the pharmacokinetics (the movement of drug into, through, and out of the body), pharmacodynamics (the effect and mechanism of action of a drug) and safety of the product candidate in pre-clinical studies.

Liquidity

Miragen has funded its operations to date principally through proceeds from the sale of its preferred stock of $72 million (including convertible notes that have converted to preferred stock) and $33.8 million in proceeds under Miragen s strategic alliance with Les Laboratoires Servier and Institute de Recherches Servier (together, Servier). Since Miragen s inception and through September 30, 2016, Miragen has generated cumulative losses of $61.1 million. Miragen s ability to fund ongoing operations is highly dependent upon its ability to raise additional capital through sales of its equity securities, continued performance under Miragen s strategic alliance with Servier, securing additional partnerships and collaborations, and issuing debt or other financing vehicles. Miragen s ability to secure capital is dependent upon success in developing its technology and product candidates. Miragen can provide no assurance that additional capital will be available on acceptable terms. The sale of additional equity or issuance of debt securities would likely result in substantial additional dilution to Miragen s stockholders. If Miragen raises additional funds through the incurrence of indebtedness, the obligations related to such indebtedness could be senior to rights of holders of Miragen s capital stock and could contain covenants that may restrict its operations. Should additional capital not be available to Miragen in the near term, or not be available on acceptable terms, Miragen may be unable to realize value from its assets and discharge its liabilities in the normal course of business, which may, among other alternatives, cause Miragen to further delay, substantially reduce, or discontinue operational activities to conserve Miragen s cash resources.

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Miragen believes that the $24.6 million of cash, cash equivalents, and short term investments of $1.0 million reported at September 30, 2016, will be sufficient to fund its operations in the normal course of business and allow Miragen to meet its liquidity needs through at least September 30, 2017.

Unaudited Interim Consolidated Financial Statements

The interim condensed consolidated balance sheet as of September 30, 2016, the condensed consolidated statements of operations and cash flows for the nine months ended September 30, 2016 and 2015 and the condensed consolidated statement of preferred stock and stockholders deficit for the nine months ended September 30, 2016 are unaudited. The unaudited interim consolidated financial statements have been prepared on the same basis as the audited annual consolidated financial statements and reflect, in the opinion of management, all adjustments of a normal and recurring nature that are necessary for the fair presentation of Miragen s financial position as of September 30, 2016 and results of operations and cash flows for the nine months ended September 30, 2016 and 2015. The results of operations for the nine months ended September 30, 2016 are not necessarily indicative of the results to be expected for the year ending December 31, 2016 or for any other future annual or interim period. The condensed consolidated balance sheet as of December 31, 2015 included herein was derived from the audited consolidated financial statements as of that date. These unaudited condensed consolidated financial statements should be read in conjunction with Miragen s audited consolidated financial statements included elsewhere in this prospectus. Miragen s management performed an evaluation of its activities through the date of filing of these financial statements and concluded that there are no subsequent events, other than as disclosed.

(2) Summary of Significant Accounting Policies

The Company s other significant accounting policies are described in Note 2 to its audited financial statements for the year ended December 31, 2015, included elsewhere in this prospectus.

Fair Value of Financial Instruments

The carrying amounts of financial instruments, including cash and cash equivalents, short-term investments, accrued compensation, pre-clinical study accruals and accounts payable, approximate fair value due to their short-term maturities. The carrying amount of the note payable approximates its fair value as its terms are comparable to what would be included in similar debt instruments.

The Company accounts for its preferred stock warrants pursuant to ASC Topic 480, *Distinguishing Liabilities from Equity*, and classifies warrants for redeemable preferred stock as liabilities. The warrants are reported at their estimated fair value and any changes in fair value are reflected in interest expense and other related expenses.

Fair value is defined as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. Inputs used to measure fair value are classified into the following hierarchy:

Level 1 Unadjusted quoted prices in active markets for identical assets or liabilities

Level 2 Unadjusted quoted prices in active markets for similar assets or liabilities; unadjusted quoted prices for identical or similar assets or liabilities in markets that are not active; or inputs other than quoted prices that are observable for the asset or liability.

Level 3 Unobservable inputs for the asset or liability.

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Assets and liabilities measured at fair value on a recurring basis consisted of the following:

	As of September 30, 2016		As of December 31, 2015	
	Level 1	Level 3	Level 1	Level 3
Assets measured at fair value:				
Short-term investments (including amounts recorded as cash equivalents)	$ 5,251,000	$	$ 248,000	$
Liabilities measured at fair value:				
Preferred stock warrants	$	$ 132,000	$	$ 169,000

A reconciliation of the beginning and ending balances of Miragen s liabilities measured at fair value using significant unobservable, or Level 3, inputs are as follows:

Balance of liability as of December 31, 2015	$ 169,000
Change in estimated value of warrants	2,000
Other	(39,000)
Balance of liability as of September 30, 2016	$ 132,000

(3) Balance Sheet Components

Property and Equipment, Net

Property and equipment, net consisted of the following:

	September 30, 2016	December 31, 2015
Property and equipment, at cost:		
Lab equipment	$ 2,154,000	$ 2,066,000
Furniture and fixtures	51,000	54,000
Computer hardware and software	273,000	192,000
Leasehold improvements	688,000	629,000
	3,166,000	2,941,000
Less accumulated depreciation and amortization	(2,470,000)	(2,225,000)
Property and equipment, net	$ 696,000	$ 716,000

Depreciation and amortization expense was $0.3 million and $0.2 million for the nine months ended September 30, 2016 and 2015, respectively.

Accrued and Other Liabilities

Accrued and other liabilities consisted of the following:

	September 30, 2016	December 31, 2015
Accrued employee compensation and related taxes	$ 639,000	$ 496,000
Deferred and accrued facility lease obligations	219,000	174,000
Accrued legal fees	1,011,000	24,000
Value of warrants on redeemable convertible preferred stock	132,000	169,000
Accrued property and franchise taxes	22,000	35,000
Accrued outsourced clinical and pre-clinical studies	508,000	859,000
Accrued consulting, supplies, and other expenses	126,000	51,000
	$ 2,657,000	$ 1,808,000

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(4) Strategic Alliance and Collaboration with Servier

In October 2011, Miragen entered into a strategic alliance with Les Laboratoires Servier and the Institut de Recherches Servier (Servier) for the research, development, and commercialization of RNA-targeting therapeutics in cardiovascular disease (the Servier Collaboration Agreement), which was subsequently amended in May 2013, May 2014, May 2015 and September 2016. Under the Servier Collaboration Agreement, Miragen granted Servier an exclusive license to research, develop, and commercialize RNA-targeting therapeutics for three targets in the cardiovascular field. Under the terms of the amended Servier Collaboration Agreement, Servier has the limited right to replace each of the three original targets once through October 2017. As of September 30, 2016, three named targets exist under the Servier Collaboration Agreement, two of which are replaceable by Servier. Additionally, Servier has a limited right of first negotiation for the license of additional targets from Miragen in the cardiovascular field through October 2016. These rights and the collaboration term below can be extended by mutual agreement between Miragen and Servier at any time on or before October 2017.

Servier s rights to each of the targets are limited to therapeutics in the cardiovascular field in their territory, which is worldwide except for the United States and Japan. Miragen retains all rights for each named target in the United States and Japan and for any products or product candidates outside of the cardiovascular field.

In connection with entering into the strategic alliance with Servier, Miragen received a nonrefundable upfront payment of $8.4 million (6.0 million) in 2011 and an additional $4.0 million (3.0 million) in 2013 when Servier exercised their right to name a third target under the agreement. Miragen is also eligible to receive development milestone payments of 5.8 million to 13.8 million ($6.5 million to $15.5 million as of September 30, 2016) and regulatory milestone payments of 10.0 million to 40.0 million ($11.2 million to $44.8 million as of September 30, 2016) for each target. Additionally, Miragen may receive up to 175 million ($196 million as of September 30, 2016) in commercialization milestones as well as quarterly royalty payments between the low-double digits to the mid-teens (subject to reductions for patent expiration, generic competition, third-party royalty and costs of goods) on the net sales of any licensed product commercialized by Servier. Additionally, if Miragen undergoes a change of control in specified circumstances, Servier has agreed to increase this royalty by an additional percentage in the low-single digits if it seeks to use any of the acquiror s intellectual property in the development of product candidates under the Servier Collaboration Agreement. Servier is obligated to make any such royalty payment for a specified period under the Servier Collaboration Agreement.

As part of the Servier Collaboration Agreement, Miragen established a multiple-year research collaboration, under which Miragen jointly performs agreed upon research activities directed to the identification and characterization of named targets and oligonucleotides in the cardiovascular field, which Miragen refers to as the Research Collaboration. The initial three-year term of the Research Collaboration was extended by two additional years in May 2014 and again by one additional year in September 2016 through October 2017. Servier is responsible for funding all of the costs of the Research Collaboration, as defined under the Servier Collaboration Agreement. During the nine months ended September 30, 2016 and 2015, Miragen recognized as revenue amounts reimbursable to Miragen under the Servier Collaboration Agreement for research and development activities of $2.1 million and $3.0 million, respectively.

The development of each product candidate (commencing with registration enabling toxicology studies) under the Servier Collaboration Agreement is performed pursuant to a mutually agreed upon development plan to be conducted by the parties as necessary to generate data useful for both parties to obtain regulatory approval of such product candidates. Servier is responsible for a specified percentage of the cost of research and development activities through the completion of one or more Phase 2 clinical trials and will reimburse Miragen for a specified portion of such costs Miragen incurs. The costs of Phase 3 clinical trials for each product candidate will be allocated between the parties at a specied percentage of costs between the parties upon the occurrence of specified events under the Servier Colloboration Agreement, including if Miragen enters into a third-party agreement for the development and/or

commercialization of a product in the United

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States at least 180 days before the initiation of the first Phase 3 clinical trial or if Miragen subsequently enters into a U.S. partner agreement or if Miragen does not enter into a U.S. partner agreement, but files for approval in the United States using data from the Phase 3 clinical trial. Miragen is responsible, by itself or through a third-party manufacturer, for the manufacture and supply of all licensed oligonucleotides during the pre-clinical phase of development under the Sevier Collaboration Agreement while Servier is primarily responsible for manufacture and supply of all licensed oligonucleotides and product during the clinical phase of development under the Servier Collaboration Agreement. The parties are each responsible for the commercial supply of any licensed product to be sold in each s respective territory under the Servier Collaboration Agreement.

Under the Servier Collaboration Agreement, Miragen also granted Servier a royalty-free, non-exclusive license to develop a companion diagnostic for any therapeutic product which may be developed by Servier under the Servier Collaboration Agreement. Miragen also granted Servier an exclusive, royalty free license to commercialize such a companion diagnostic for use in connection with such therapeutic product in its territory.

The Servier Collaboration Agreement will expire as to each underlying product candidate when Servier s royalty obligations as to such product candidate have expired. Servier may also terminate the Servier Collaboration Agreement for (i) convenience upon a specified number of days prior notice to Miragen or (ii) upon determination of a safety issue relating to development under the agreement upon a specified number of days prior notice to Miragen. Either party may terminate the Servier Collaboration Agreement upon a material breach by the other party which is not cured within a specified number of days. Miragen may also terminate the agreement if Servier challenges any of the patents licensed by Miragen to Servier.

Miragen determined that the elements within the Servier Collaboration Agreement should be treated as a single unit of accounting because the delivered elements, the licenses, did not have standalone value to Servier at the time the license was granted. As such, Miragen recognizes license fees earned under the Servier Collaboration Agreement as revenue on a proportional performance basis over the estimated period to complete the activities under the Research Collaboration. The total period of performance is estimated to be equal to the term of the Research Collaboration. Through May 2014, the $12.4 million (9.0 million) in non-refundable license fees Miragen earned under the Servier Collaboration Agreement was being recognized as revenue through October 2014, the end of the three-year initial term of Miragen s Research Collaboration. In May 2014, Miragen changed its estimate as a result of Servier s extension of the period under which Miragen expected to perform services and, as such, began recognizing the remaining unamortized license revenue through October 2016, the estimated end of the Research Collaboration. Miragen measure its progress under the proportional performance method based on actual and estimated full-time equivalents. During the nine months ended September 30, 2016 and 2015, Miragen recognized license revenue of $0.4 million and $1.0 million, respectively.

In total, for the nine months ended September 30, 2016 and 2015, Miragen recognized $2.5 million and $4.0 million, respectively, as revenue under the Servier Collaboration Agreement. As of September 30, 2016 and December 31, 2015, deferred revenue totaled $0.1 million and $0.5 million, respectively. In addition, amounts incurred but not billed to Servier for research activities performed totaled $0.6 and $0.8 million as of September 30, 2016 and December 31, 2015, respectively. These amounts are included in prepaid expenses and other current assets in Miragen s unaudited interim condensed consolidated balance sheets.

(5) Notes Payable

Convertible Notes Payable Issued to Investors

In February 2015, Miragen s stockholders approved the issuance of up to $20 million of convertible promissory notes and in February 2015, Miragen issued convertible promissory notes totaling $8.5 million (the Convertible Notes) to holders of Miragen s Series B redeemable convertible preferred stock (Series B). The Convertible Notes were issued in lieu of the third tranche under the Series B purchase agreement.

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The Convertible Notes accrued interest at a fixed rate of 6% per year and were scheduled to become due and payable any time on or after August 3, 2016 upon the demand of holders of a required threshold of the outstanding notes. The Convertible Notes and accrued interest thereon, were subject to an automatic conversion into a class of equity securities issued upon a financing that met specific criteria, which occurred in October 2015 upon the sale of Series C redeemable convertible preferred stock (Series C) (see Note 7). Under the terms of the Convertible Notes, the Convertible Notes, together with accrued interest, were to convert at a conversion rate equal to 75% of the per share price paid for shares of Series C. However, this provision was waived by the note holders, and in October 2015, the Convertible Notes and accrued interest thereon totaling $8.9 million converted into 2,003,884 shares of Series C at a conversion rate equal to $4.43 per share, the per share price of the Series C.

Miragen concluded that the right to receive a 25% discount on the conversion to a class of equity securities in a qualified financing was a put option that needed to be valued separately. As such, Miragen recorded proceeds from the Convertible Notes based on the estimated fair value of the embedded put option ($2.7 million) and the Convertible Notes, which resulted in a debt discount of $2.7 million related to the value of the put option. This debt discount was being amortized over the term of the Convertible Notes. Upon conversion of the Convertible Notes in October 2015, Miragen recorded a loss on extinguishment of the Convertible Notes of $1.4 million, which reflects the difference between the fair value of the Series C issued in the conversion and the carrying value of the Convertible Notes.

Interest and related expenses recorded under the Convertible Notes during the nine months ended September 30, 2015 are as follows:

Interest based on the stated interest rate	$ 335,000
Amortization of debt discount	1,164,000
Total	$ 1,499,000

2015 Notes Payable to Silicon Valley Bank

In April 2015, Miragen entered into a new loan and security agreement with Silicon Valley Bank to borrow up to $10 million in two separate tranches. The first tranche of $5.0 million was funded in May 2015 and is scheduled to be repaid over a 48-month period with interest only payments during the first 18 months (the 2015 Notes). Accelerated payments are due under certain circumstances. Amounts outstanding bear interest at the prime rate minus 0.25% (3.25% at September 30, 2016 and December 31, 2015) with a final payment fee equal to 5.50% of amounts borrowed. Borrowings are secured by a priority security interest, right, and title in all business assets, excluding Miragen s intellectual property, which is subject to a negative pledge.

In April 2015 and in connection with the first tranche, Miragen issued detachable warrants to purchase up to 16,667 shares of its Series B at an exercise price of $6.00 per share. Miragen estimated the fair value of the warrants and the holder put right (see below), to be $0.1 million at the time of issuance. The fair value of the warrants was estimated using a valuation model with the following assumptions: risk free interest rate of 2.1%; 84% volatility; and contractual term of 10 years. The holder put right was valued using a probability adjusted present value method with the following assumptions as of December 31, 2015; term of two years, discount rate of 4.78%, and probability of 89.3%.

If the second tranche is requested and funded, Miragen will be required to issue additional warrants to purchase Series B. The warrants contain a put right under which Miragen may be required to repurchase the outstanding warrants for a purchase price of $0.2 million, which amount is prorated based on the proportion of the $10 million funded. The

warrants were classified as a liability at the date of grant and are subject to remeasurement at each balance sheet date.

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Amounts outstanding under notes payable are as follows:

	September 30, 2016	December 31, 2015
Principal amount outstanding	$ 5,000,000	$ 5,000,000
Unamortized debt discount	(17,000)	(89,000)
Unamortized debt issuance costs	(28,000)	(43,000)
Accretion of final payment fee	143,000	66,000
	5,098,000	4,934,000
Less: current maturities	(1,805,000)	(269,000)
Long-term notes payable	$ 3,293,000	$ 4,665,000

Future principal payments as of September 30, 2016 under the 2015 Notes Payable to Silicon Valley Bank for the twelve months ended September 30, are as follows:

September 30, 2017	$ 1,833,000
September 30, 2018	2,000,000
September 30, 2019	1,167,000
Total	$ 5,000,000

(6) Commitments and Contingencies

Indemnifications

Miragen has agreements whereby Miragen indemnifies its directors and officers for certain events or occurrences while the individual is, or was, serving as a director, officer, employee, or other agent of the Company. The maximum potential amount of future payments Miragen could be required to make under these indemnification agreements is unlimited.

Employment Agreements

Miragen has entered into agreements with its executives that provide for base salary, severance, eligibility for bonuses, and other generally available benefits. The agreements provide that Miragen may terminate the employment of its executives at any time with or without cause. If an executive is terminated without cause or an executive resigns for good reason, as defined, then the executive is entitled to receive, upon the execution of a release agreement, a severance package consisting of: (i) the equivalent of six to 12 months of the executive s base salary as in effect immediately prior to date of termination, (ii) acceleration of vesting of the equivalent of six to 12 months of vesting of the executive s outstanding unvested options and other stock awards issued under our equity incentive plan, and (iii) other benefits. For the Company s chief executive, if such termination occurs one month before or thirteen months following a change of control, then, upon the execution of a release agreement, the executive is entitled to: (i) the

equivalent of 24 months of the executive s base salary as in effect immediately prior to the date of termination, (ii) acceleration of vesting of all of the executive s outstanding unvested options to purchase common stock, and (iii) other benefits.

License Agreements with the University of Texas

As of September 30, 2016, Miragen had five exclusive patent licenses agreements (the UT License Agreements) with the Board of Regents of The University of Texas System (the University of Texas). Under each of the UT License Agreements, the University of Texas granted Miragen exclusive and nonexclusive licenses to certain patent and technology rights. The University of Texas is a minority stockholder of the Company.

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In consideration of rights granted by the University of Texas, Miragen agreed to (i) pay a nonrefundable upfront license documentation fee in the amount of $10 thousand per license, (ii) pay an annual license maintenance fee in the amount of $10 thousand per license starting one year from the date of each agreement, (iii) reimburse the University of Texas for actual costs incurred in conjunction with the filing, prosecution, enforcement, and maintenance of patent rights prior to the effective date, and (iv) bear all future costs of and manage the filing, prosecution, enforcement, and maintenance of patent rights. During the nine month periods ended September 30, 2015 and 2014, Miragen incurred upfront and maintenance fees under the UT License Agreements totaling $0.1 million, and recorded the amounts as research and development expense. All costs related to the filing, prosecution, enforcement, and maintenance of patent and technology rights are recorded as general and administrative expense when incurred.

Under the terms of the UT License Agreements, Miragen may be obligated to make the following future milestone payments for each licensed product candidate: (i) up to $0.6 million upon the initiation of defined clinical trials, (ii) $2.0 million upon regulatory approval in the United States, and (iii) $0.5 million per region upon regulatory approval in other specified regions. Additionally, if Miragen successfully commercializes any product candidate subject to the UT License Agreements, Miragen is responsible for royalty payments in the low-single digits and payments up to a percentage in the mid-teens of any sublicense income, subject to specified exceptions, based upon net sales of such licensed products. UT s right to these royalty payments will expire as to each license agreement upon the expiration of the last patent claim subject to the applicable UT License Agreement.

The license term extends on a country by country basis until the expiration of the last to expire of the licensed patents that covers such product in such country. Upon expiration of the royalty payment obligation, Miragen will have a fully paid license in such country. Miragen may also terminate each UT License Agreement for convenience upon a specified number of days prior notice to the University of Texas. The University of Texas also has the right to earlier terminate the UT License Agreements after a defined date under specified circumstances where Miragen has effectively abandoned its research and development efforts or has no sales. The UT License Agreements will terminate under customary termination provisions including Miragen s bankruptcy or insolvency, material breach, and upon mutual written consent. Miragen has expensed all charges incurred under the UT License Agreements to date, due to the uncertainty as to future economic benefit from the acquired rights.

Sponsored Research Agreements with the Hubrecht Institute

In 2013, Miragen entered into two separate sponsored research agreements (the Hubrecht Research Agreements) with the Hubrecht Institute (Hubrecht). Under the terms of the Hubrecht Research Agreements, Hubrecht is to provide the personnel, facilities, and equipment necessary to carry out a research program for Miragen s benefit. Under these agreements, Miragen incurred $0.1 million during the nine months ended September 30, 2016 and 2015.

License Agreement with Roche Innovation Center Copenhagen A/S (formerly Santaris Pharma A/S)

In June 2010, Miragen entered into a license agreement with the Santaris Pharma A/S, which has changed its name to Roche Innovation Center Copenhagen A/S (RICC) which was subsequently amended in October 2011 and amended and restated in December 2012 (the RICC License Agreement). In 2014, Santaris Pharma A/S was acquired by F. Hoffmann-La Roche Ltd (Roche), and has become a wholly owned subsidiary of Roche.

Under the RICC License Agreement, Miragen received exclusive and nonexclusive licenses from RICC to use specified technology of RICC (the RICC Technology) for specified uses including research, development, and commercialization of pharmaceutical products using this technology worldwide. Under the RICC License Agreement, Miragen has the right to develop and commercialize the RICC Technology directed to four specified targets and the option to obtain exclusive product licenses for up to six additional

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targets. The acquisition of Santaris Pharma A/S by Roche was considered a change-of-control under Miragen s agreement, and as such, certain terms and conditions of the RICC License Agreement changed, as contemplated and in accordance with the RICC License Agreement. These changes primarily relate to milestone payments reflected in the disclosures below. As consideration for the grant of the license and option, Miragen previously paid RICC $2.3 million and issued RICC 856,806 shares of its Series A preferred stock, which are now owned by Roche Finance Ltd, an affiliate of Roche. If Miragen exercises its option to obtain additional product licenses or to replace the target families, Miragen will be required to make additional payments to RICC.

Under the terms of the RICC License Agreement, milestone payments were previously decreased by a specified percentage as a result of the change of control by RICC referenced above. Miragen is obligated to make future milestone payments for each licensed product for up to $5.2 million. Certain of these milestones will be increased by a specified percentage if Miragen undergoes a change in control during the term of the RICC License Agreement. If Miragen grants a third party a sublicense to the RICC Technology, in lieu of the fixed milestone payments noted above, Miragen is required to remit to Roche up to a specified percentage of the upfront and milestone payments Miragen receives under its sublicense.

If Miragen successfully commercializes any product candidate subject to the RICC License Agreements, then RICC is entitled to royalty payments in the mid-single digits on the net sales of such product, provided that if such net sales are made by a sublicensee under the RICC License Agreement, RICC is entitled to royalty payments equal to the lesser of a percentage in the mid-single digits on the net sales of such product or a specified percentage of the royalties paid to Miragen by such sublicensee, subject to specified restrictions. Miragen is obligated to make any such royalty payments until the later of (i) a specified anniversary of the first commercial sale of the applicable product or (ii) the expiration of the last valid patent claim licensed by RICC under the RICC License Agreement underlying such product. Upon the occurrence of specified events, the royalty owed to RICC will be decreased by a specified percentage.

The RICC License Agreement will terminate upon the latest of the expiration of all of RICC s royalty rights, the termination of the last Miragen target or the expiration of its right to obtain a product license for a new target under the RICC License Agreement. Miragen may also terminate the RICC License Agreement for convenience upon a specified number of days prior notice to RICC, subject to specified terms and conditions. Either party may terminate the RICC License Agreement upon an uncured material breach by the other party and RICC may terminate the RICC License Agreement upon the occurrence of other specified events that are not cured within a specified number of days.

Miragen has expensed all charges incurred under the RICC License Agreement to date, due to the uncertainty as to future economic benefit from the acquired rights.

License Agreements with the t2cure GmbH

In October 2010, Miragen entered into a license and collaboration agreement (the t2cure Agreement) with the t2cure GmbH (t2cure), which was subsequently amended in July 2014. Under the t2cure Agreement, Miragen received a worldwide, royalty bearing, and exclusive license to specified patent and technology rights to develop and commercialize product candidates targeted at miR-92.

In consideration of rights granted by t2cure, Miragen paid a onetime upfront fee of $46 thousand and agreed to: (i) pay an annual license maintenance fee in the amount of 3 thousand ($3 thousand at September 30, 2016), and (ii) reimburse t2cure for 100% of actual costs incurred in conjunction with the filing, prosecution, enforcement, and maintenance of patent rights prior to the effective date. All costs related to the filing, prosecution, enforcement, and maintenance of patent and technology rights are recorded as general and administrative expense when incurred.

Under the terms of the t2cure Agreement, Miragen is obligated to make the following future milestone payments for each licensed product: (i) up to $0.7 million upon the initiation of certain defined clinical trials, (ii) $2.5 million upon regulatory approval in the United States and (iii) up to $1.5 million per region

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upon regulatory approval in the European Union or Japan. Additionally, if Miragen successfully commercializes any product candidate subject to the t2cure Agreement, Miragen is responsible for royalty payments in the low-single digits upon net sales of licensed products and sublicense fees equal to a percentage in the low-twenties of sublicense income to Miragen. Miragen is obligated to make any such royalty payment until the later of (i) the tenth anniversary of the first commercial sale of the applicable product or (ii) the expiration of the last valid claim to a patent licensed by t2cure under the t2cure Agreement covering such product. If such patent claims expire prior to the end of the ten year term, then the royalty owed to t2cure will be decreased by a specified percentage.

The license term extends on a country by country basis until the later of: (i) the tenth anniversary of the first commercial sale of a licensed product in a country, and (ii) the expiration of the last to expire valid claim that claims such licensed product in such country. Upon expiration of the royalty payment obligation, Miragen will have a fully paid license in such country. Miragen has the right to terminate the t2cure Agreement at will, on a country-by-country basis, after 60 days written notice.

Miragen has expensed all charges incurred under the t2cure Agreement to date, due to the uncertainty as to future economic benefit from the acquired rights.

License Agreement with The Brigham and Women s Hospital

In May 2016, the Company entered into an exclusive patent license agreement (the BWH License Agreement) with The Brigham and Women s Hospital (BWH).

Under the BWH License Agreement, BWH granted Miragen an exclusive, worldwide license, including a right to sublicense, to specified technology and patent rights of BWH. As consideration for this exclusive license, the Company paid BWH a specified issue fee and is obligated to pay a specified annual license fee. BWH is also entitled to milestone payments of up to $2.6 million for any of the Company s product candidates developed based on the patent rights subject to the BWH License Agreement plus a one-time sales milestone payment of $0.25 million for all product candidates developed based on the patent rights subject to the BWH License Agreement. If the Company were to successfully commercialize any product candidate subject to the BWH License Agreement, then BWH is entitled to royalty payments in the low-single digits on the net sales of such product. BWH s right to these royalty payments will expire upon the expiration of the last patent claim subject to BWH License Agreement. BWH is also entitled to a percentage in the low-double digits of any sublicense income from such product, subject to specified exceptions. The Company is also responsible for all costs associated with the preparation, filing, prosecution and maintenance of the patent rights subject to the BWH License Agreement.

Additionally, the Company is obligated to use commercially reasonable efforts to develop a product under the BWH License Agreement and to meet specified diligence milestones thereunder.

The BWH License Agreement will terminate upon the expiration of all issued patents and patent applications subject to the patent rights under the agreement. Miragen may also terminate the BWH License Agreement for convenience upon a specified number of days prior notice to BWH. BWH may terminate the BWH License Agreement upon a material breach by the Company of its payment obligations and upon the occurrence of other specified events that are not cured within a specified number of days.

Subcontract Agreement with Yale University

In October 2014, Miragen entered into a subcontract agreement (the Yale Agreement) with Yale University (Yale) which was subsequently amended in February 2016 and November 2016. Under the Yale Agreement, Miragen

agreed to provide specified services regarding the development of a proprietary compound that targets microRNA-29 in the indication of idiopathic pulmonary fibrosis. Yale entered into the Yale Agreement in connection with a grant that Yale received from the National Institutes of Health (NIH) for the development a microRNA-29 mimicry as a potential therapy for pulmonary fibrosis.

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In consideration of Miragen s services under the Yale Agreement, Yale has agreed to pay Miragen up to $1.1 million. Under the terms of the Yale Agreement, Miragen retains all rights to any and all intellectual property developed solely by Miragen in connection with the Yale Agreement. Yale has also agreed to provide Miragen with an exclusive option to negotiate in good faith for an exclusive, royalty-bearing license from Yale for any intellectual property developed by Yale or jointly by the parties under the Yale Agreement. Yale is responsible for filing, prosecuting and maintaining foreign and domestic patent applications and patents on all inventions jointly developed by the parties under the Yale Agreement.

The Yale Agreement terminates automatically on the date that Yale delivers its final research report to the NIH under the terms of the grant underlying the Yale Agreement. Either party may also terminate the Yale Agreement upon a specified number of days notice in the event that the NIH s grant funding is reduced or terminated or upon material breach by the other party.

Engagement of WedBush

The Company entered into an agreement with Wedbush Securities Inc. (Wedbush) in August 2016, under which the Company agreed to engage Wedbush to act as exclusive placement agent in connection with a private financing. The Company paid a non-refundable, creditable retainer of $25 thousand in August 2016 and agreed to pay a financing fee of 6% of the gross proceeds, as defined, from capital raised in a transaction. The Company also agreed to a minimum fee of $1.0 million which will become due and payable if and when gross proceeds from all investors equals or exceeds $10 million. The initial term of this agreement extends for 12 months to August 2017, provided however, that either party may terminate with the appropriate written notice. The financing fee will apply during the initial term plus a 12-month tail period, as defined in the agreement.

Facility Lease

In December 2010, Miragen entered into a lease agreement for office and lab space (Crestview Lease) and in 2015, Miragen amended this lease agreement to extend its term through August 2020.

In April 2013, Miragen entered into separate lease agreement for additional office space (Westview Lease) and in 2015, Miragen amended this lease agreement to extend its term by four months through October 2015. This lease expired in 2015 and was not renewed.

Miragen s Crestview Lease is noncancelable. Minimum base lease payments, including the impact of tenant improvement allowances, under the operating lease are recognized on a straight-line basis over the full term of the lease. Rent expense for the Crestview and Westview Leases during the nine months ended September 30, 2016 and 2015 was $0.3 million and $0.2 million, respectively. Miragen is also required to pay for a portion of the operating expenses for each facility and during the nine months ended September 30, 2016 and 2015 Miragen expensed $0.3 million and $0.2 million, respectively, related to this additional rent expense.

Minimum payments as of September 30, 2016 under the Crestview Lease for the twelve months ended September 30, are as follows:

September 30, 2017	$ 369,000
September 30, 2018	388,000
September 30, 2019	401,000

September 30, 2020	378,000
Total	$ 1,536,000

(7) Capital Stock

Miragen is authorized to issue 43,435,888 shares of its stock; 24,780,394 shares have been designated as common stock with a par value of $0.001 per share (Common Stock); and 18,655,494 shares have been

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designated as preferred stock (Series Preferred) with a par value of $0.001 per share. Of the 18,655,494 shares of preferred stock, 7,169,176 shares are designated as Series A redeemable convertible preferred stock (Series A); 2,183,318 shares are designated as Series B; and 9,303,000 shares are designated as Series C. The number of authorized shares of Common Stock may be increased or decreased by the affirmative vote of the holders of a majority of Miragen s stock who are entitled to vote.

Series Preferred

In October 2015, Miragen sold 3,632,342 shares of its Series C at $4.43 per share. Total proceeds were $15.9 million, net of $0.2 million in issuance costs. Concurrent with this financing, all of the outstanding Convertible Notes together with interest accrued thereon together totaling $8.9 million converted into 2,003,884 shares of Series C at a conversion rate equal to $4.43 per share.

In September 2016, Miragen sold 3,632,337 shares of its Series C at $4.43 per share. Total proceeds were $16.1 million, net of then thousand in issuance costs.

(8) Stock-Based Compensation

Equity Incentive Plan

In 2008, Miragen s board of directors approved the 2008 Equity Incentive Plan (the 2008 Equity Plan). The 2008 Equity Plan was subsequently amended in June 2009, April 2012, and October 2015 to increase the number of shares authorized for issuance. As of September 30, 2016, there were 3,672,515 shares authorized for issuance as awards under the Equity Plan, of which 379,524 shares remain available for future issuances.

A summary of stock options activity under the 2008 Equity Plan for the nine months ended September 30, 2016 is as follows:

	Number of options	Weighted-average exercise price	Weighted-average remaining contractual term (years)
Options outstanding at December 31, 2015	2,679,000	$ 0.67	
Granted	789,000	0.74	
Canceled	(246,000)	0.73	
Options outstanding at September 30, 2016	3,222,000	0.68	5.70
Exercisable as of September 30, 2016	2,560,000	$ 0.67	

The fair values of employee stock options were estimated at the date of grant using the Black-Scholes model with the following weighted-average assumptions and had the following estimated weighted average grant-date fair value per

share during the nine months ended September 30, 2016. Miragen did not grant common stock options during the nine months ended September 30, 2015:

	Nine months ended September 30,	
	2016	2015
Expected term	5 years	
Expected volatility	84%	
Risk-free interest rate	1.14%	
Expected dividend yield	0.00%	

Miragen accounts for stock options issued to non-employees by valuing the awards using the Black-Scholes option pricing model and adjusting the value of such awards to current fair value each reporting period until

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the awards are vested or a performance commitment has otherwise been reached. Miragen did not grant stock options to non-employees during the nine months ended September 30, 2016 and 2015.

Stock-Based Compensation Expense

Stock-based compensation related to employee and non-employee stock options is included in the interim condensed consolidated statements of operations as follows:

	Nine months ended September 30,	
	2016	2015
Research and development	$ 22,000	$ 30,000
General and administrative	107,000	145,000
Total	$ 129,000	$ 175,000

As of September 30, 2016, Miragen had $0.3 million of total unrecognized employee stock-based compensation costs, which Miragen expects to be recognized over a weighted-average remaining period of 3.4 years. As of September 30, 2016, based on Miragen s current estimate of fair value, Miragen estimates that the remaining unrecognized stock-based compensation expense related to non-employees of $19 thousand will be expensed over a weighted-average remaining period of 1.94 years.

(9) Warrants

Warrant activity for the nine months ended September 30, 2016 is as follows:

	Common Stock Warrants		Preferred Stock Warrants	
	Number	Weighted-Average Exercise Price	Number	Weighted Average Exercise Price
Outstanding at December 31, 2015	10,000	$ 0.40	36,667	$ 4.36
Granted				
Outstanding at September 30, 2016	10,000	$ 0.40	36,667	$ 4.36

A summary of outstanding warrants as of September 30, 2016 is as follows:

Common Stock Warrants		
Number of underlying	Exercise Price	Expiration Date

shares		
10,000	$0.40	2018

Preferred Stock Warrants

Number of underlying Shares	Series of Preferred	Exercise Price	Expiration Date
20,000	A	$3.00	2018
16,667	B	6.00	2025
36,667			

At September 30, 2016 and December 31, 2015, Miragen estimated the fair value of warrants to purchase Series A to be $50 thousand. The fair value of the warrants was estimated using the Black-Scholes option pricing model with the following assumptions as of September 30, 2016: risk-free interest rate of 0.77%; 85% volatility; remaining contractual term of approximately 2.07 years; no dividend yield; and an estimated fair value of the underlying redeemable convertible preferred stock of $4.43 per share.

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As of September 30, 2016 and December 31, 2015, Miragen estimated the fair value of the warrants to purchase Series B and the holder put right to be $0.1 million. The fair value of the warrants was estimated using a valuation model with the following assumptions as of September 30, 2016: risk free interest rate of 2.1%; 84% volatility; and contractual term of 10 years. The holder put right was valued using a probability adjusted present value method with the following assumptions as of September 30, 2016; term of 2 years, discount rate of 4.57%, and probability of 89.3%. See Note 5 for further discussion of terms and conditions of the warrant.

(10) Net Loss per Share

Basic net loss per share is computed by dividing the net loss by the weighted-average number of common shares outstanding. Diluted net loss per share is computed similarly to basic net loss per share except that the denominator is increased to include the number of additional common shares that would have been outstanding if the potential common shares had been issued and if the additional common shares were dilutive. Diluted net loss share is the same as basic net loss per common share, since the effects of potentially dilutive securities are antidilutive.

As of September 30, 2016 and 2015, potentially dilutive securities include:

	September 30,	
	2016	**2015**
Convertible preferred stock	18,584,390	9,315,827
Warrants to purchase preferred stock	36,667	36,667
Warrants to purchase common stock	10,000	10,000
Options to purchase common stock	3,222,033	2,660,066
Total	21,853,090	12,022,560

(11) Subsequent Events

Merger Agreement

Signal Genetics, Inc. (Signal) and Miragen have entered into an Agreement and Plan of Merger and Reorganization, dated October 31, 2016 (the Merger Agreement). The Merger Agreement contains the terms and conditions of the proposed business combination of Signal and Miragen. Under the Merger Agreement, Signal Merger Sub, Inc., a wholly-owned subsidiary of Signal will merge with and into Miragen, with Miragen surviving as a wholly-owned subsidiary of Signal. After the completion of the Merger, Signal will change its corporate name to Miragen Therapeutics, Inc. as required by the Merger Agreement.

Subscription Agreement

On October 31 2016, Miragen entered into a subscription agreement with certain current stockholders of Miragen and certain new investors pursuant to which the purchasers agreed to purchase an aggregate of 9,045,126 shares of Miragen s common stock at a price per share of $4.50 for an aggregate consideration of approximately $40.7 million immediately prior to the consummation of the Merger, subject to specified conditions in the subscription agreement.

Amendment of 2015 Notes Payable to Silicon Valley Bank Loan and Security Agreement

In December 2016, Miragen amended its loan and security agreement with Silicon Valley Bank to extend the draw period of the second tranche from December 31, 2016 to July 31, 2017.

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INDEX TO UNAUDITED PRO FORMA CONDENSED COMBINED FINANCIAL STATEMENTS

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UNAUDITED PRO FORMA CONDENSED COMBINED FINANCIAL STATEMENTS

Except where specifically noted, the following information gives effect to Signal s one-for-15 reverse stock split of its common stock, which was effective at 5:01 p.m. Eastern Time on November 4, 2016, but does not give effect to the proposed reverse stock split described in Signal Proposal No. 7.

The following unaudited pro forma condensed combined financial statements give effect to the merger between Signal and Miragen (the Merger) and were prepared in accordance with the regulations of the Securities and Exchange Commission (SEC). For accounting purposes, Miragen is considered to be acquiring Signal in the Merger. Miragen was determined to be the accounting acquirer based upon the terms of the Merger and other factors including: (i) Miragen security holders will own approximately 96% of the combined company immediately following the closing of the Merger, (ii) Miragen directors will hold all board seats in the combined company, and (iii) Miragen management will hold all key positions in the management of the combined company. The transaction will be accounted for under the acquisition method of accounting under generally accepted accounting principles (GAAP). Under the acquisition method of accounting for the purpose of these unaudited pro forma condensed combined financial statements, management of Signal and Miragen have determined a preliminary estimated purchase price, calculated as described in Note 2 to these unaudited pro forma condensed combined financial statements. The net tangible and intangible assets acquired and liabilities assumed in connection with the transaction are recorded at their estimated acquisition date fair values. A final determination of these estimated fair values will be based on the actual net tangible and intangible assets of Signal that exist as of the date of completion of the transaction.

The unaudited pro forma condensed combined balance sheet as of September 30, 2016 assumes that the Merger took place on September 30, 2016 and combines the historical balance sheets of Signal and Miragen as of September 30, 2016. The unaudited pro forma condensed combined statement of operations for the nine months ended September 30, 2016 and for the year ended December 31, 2015 assumes that the Merger took place as of January 1, 2015, and combines the historical results of Signal and Miragen for the nine months ended September 30, 2016. for the year ended December 31, 2015, respectively. The historical financial statements of Signal and Miragen, which are provided elsewhere in this proxy statement/prospectus/information statement, have been adjusted to give pro forma effect to events that are (i) directly attributable to the Merger, (ii) factually supportable, and (iii) with respect to the statements of operations, expected to have a continuing impact on the combined results.

The unaudited pro forma condensed combined financial statements are based on the assumptions and adjustments that are described in the accompanying notes. The unaudited pro forma condensed combined financial statements and pro forma adjustments have been prepared based on preliminary estimates of fair value of assets acquired and liabilities assumed. Differences between these preliminary estimates and the final acquisition accounting will occur and these differences could have a material impact on the accompanying unaudited pro forma condensed combined financial statements and the combined company s future results of operations and financial position. The actual amounts recorded as of the completion of the Merger may differ materially from the information presented in these unaudited pro forma combined financial statements as a result of the amount, if any, of capital raised by Miragen between entering the Merger Agreement and closing of the Merger; the amount of cash used by Signal s operations between the signing of the Merger Agreement and the closing of the Merger; the timing of closing of the Merger; and other changes in the Signal assets and liabilities that occur prior to the completion of the Merger.

The unaudited pro forma condensed combined financial statements do not give effect to the potential impact of current financial conditions, regulatory matters, operating efficiencies or other savings or expenses that may be associated with the acquisition. The unaudited pro forma condensed combined financial statements have been prepared for illustrative purposes only and are not necessarily indicative of the financial position or results of operations in future periods or the results that actually would have been realized had Signal and Miragen been a combined company

during the specified period. The unaudited pro forma condensed combined financial statements, including the notes thereto, should be read in conjunction with the Signal and Miragen historical audited financial statements for the year ended December 31, 2015 and the unaudited condensed financial statements for the nine months ended September 30, 2016 included elsewhere in this proxy statement/prospectus/information statement.

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Unaudited Pro Forma Condensed Combined Balance Sheet

September 30, 2016

(In thousands)

	Signal	Miragen	Pro Forma Merger Adjustments		Pro Forma Combined
Assets					
Current assets:					
Cash and cash equivalents	$ 5,351	$ 24,598	$ 39,423	D	$ 70,197
			825	I	
Short-term investments		1,001			1,001
Accounts receivable, net	733	9	(733)	I	9
Inventory	62		(62)	I	
Prepaid expenses and other current assets	366	1,872	(151)	I	2,087
Total current assets	6,512	27,480	39,302		73,294
Property and equipment, net	1,014	696	(960)	I	750
Other assets	15	258			273
Total assets	$ 7,541	$ 28,434	$ 38,342		$ 74,317
Liabilities and stockholders equity					
Current liabilities:					
Accounts payable and accrued expenses	$ 1,700	$ 2,787	$ 2,229	E	$ 7,185
			(50)	G	
			(1,396)	I	
			(139)	J	
			2,054	M	
Note payable related party	1,105		(1,105)	J	
Current portion of notes payable		1,805			1,805
Current portion of deferred revenue		80			80
Other current liabilities	48		(25)	I	23
Total current liabilities	2,853	4,672	1,568		9,093
Notes payable, less current portion		3,293			3,293
Other noncurrent liabilities	2				2
Total liabilities	2,855	7,965	1,568		12,388
Stockholders equity:					
Redeemable Convertible preferred stock		76,967	(76,967)	C	
Common stock	7	1	(10)	A	199
			5	B	
			130	C	
			63	D	

			3	J	
Additional paid-in capital	29,751	4,591	(29,349)	A	123,549
			(5)	B	
			76,837	C	
			39,360	D	
			50	G	
			1,513	J	
			485	L	
			316	N	
Accumulated deficit	(25,072)	(61,090)	29,359	A	(61,819)
			(2,229)	E	
			340	I	
			(272)	J	
			(485)	L	
			(2,054)	M	
			(316)	N	
Total stockholders equity	4,686	(56,498)	113,741		61,929
Total liabilities, preferred stock and stockholders equity	$ 7,541	$ 28,434	$ 38,342		$ 74,317

See accompanying notes to the unaudited pro forma condensed combined financial statements.

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Unaudited Pro Forma Condensed Combined Statement of Operations

(In thousands, except share and per share data)

	For Nine Months Ended September 30, 2016				
			Pro Forma		
	Signal	Miragen	Merger Adjustment		Pro Forma Combined
Revenue, net	$ 2,581	$ 2,969	$ (2,581)	I	$ 2,969
Operating expenses:					
Cost of revenue	1,856		(1,856)	I	
Research and development	867	9,786	(867)	I	9,786
Selling and marketing	1,438		(1,438)	I	
General and administrative	5,455	4,255	(922)	F	7,706
			(1,082)	I	
Total operating expenses	9,616	14,041	(6,165)		17,492
Loss from operations	(7,035)	(11,072)	3,584		(14,523)
Interest and other income		21			21
Interest and other related expense	(69)	(250)	2	G	(251)
			66	J	
Net loss	(7,104)	$ (11,301)	3,652		(14,753)
Accretion of offering costs to redemption value of preferred stock		(36)	36	H	
Net loss applicable to common shareholders	$ (7,104)	$ (11,337)	$ 3,688		$ (14,753)
Basic and diluted net loss per share	(9.90)	(13.25)			(0.70)
Weighted average common share outstanding basic and diluted	716,957	855,734	19,369,106	K	20,941,797

See accompanying notes to the unaudited pro forma condensed combined financial statements.

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Unaudited Pro Forma Condensed Combined Statement of Operations

(In thousands, except share and per share data)

	For Year Ended December 31, 2015 Pro Forma				
	Signal	Miragen	Merger Adjustment		Pro Forma Combined
Revenue, net	$ 2,538	$ 5,004	$ (2,538)	I	$ 5,004
Operating expenses:					
Cost of revenue	2,472		(2,472)	I	
Research and development	1,002	13,312	(1,002)	I	13,628
			316	N	
Selling and marketing	2,559		(2,559)	I	
General and administrative	7,692	3,850	(1,293)	I	10,249
Total operating expenses	13,725	17,162	(7,010)		23,877
Loss from operations	(11,187)	(12,158)	4,472		(18,873)
Interest and other income		3			3
Interest and other related expense	(141)	(3,531)	44	G	(3,496)
			132	J	
Net loss	(11,328)	(15,686)	4,648		(22,366)
Accretion of offering costs to redemption value of preferred stock		(34)	34	H	
Net loss applicable to common shareholders	$ (11,328)	$ (15,720)	$ 4,682		$ (22,366)
Basic and diluted net loss per share	$ (21.00)	$ (18.37)			$ (1.28)
Weighted average common share outstanding basic and diluted	539,460	855,734	16,102,170	K	17,497,364

See accompanying notes to the unaudited pro forma condensed combined financial statements.

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NOTES TO THE UNAUDITED PRO FORMA CONDENSED COMBINED FINANCIAL INFORMATION

1. Description of Transaction and Basis of Presentation

Description of Transaction

On October 31, 2016, Signal Genetics, Inc. (Signal) entered into an Agreement and Plan of Merger and Reorganization (the Merger Agreement) with pre-Merger Miragen Therapeutics (Private Miragen), with Private Miragen becoming a wholly-owned subsidiary of Signal and the surviving corporation following completion of the merger (the Merger) in accordance with the Merger Agreement.

Immediately after the Merger, Miragen securityholders will own approximately 96% of the fully-diluted common stock of the combined company, with Signal securityholders owning approximately 4% of the fully-diluted common stock of the combined company, each assuming that Miragen closes its concurrent financing immediately prior to the effective time of the Merger. If the concurrent financing does not close, then Miragen s securityholders would own approximately 94% of the fully-diluted common stock of the combined company and Signal s securityholders would own approximately 6% of the fully-diluted common stock of the combined company. These estimates are based on the anticipated pre-split Exchange Ratio and post-split Exchange Ratios and are subject to adjustment.

Concurrent with Private Miragen s entry into the Merger Agreement, certain third parties, including Private Miragen s existing stockholders entered into an agreement to purchase shares of Private Miragen s common stock in a private financing prior to consummation of the Merger for an aggregate purchase price of approximately $40.7 million.

Basis of Presentation

The unaudited pro forma condensed combined financial statements were prepared in accordance with the regulations of the Securities and Exchange Commission (SEC). The unaudited pro forma condensed combined balance sheet as of September 30, 2016 is presented as if the Merger had been completed on September 30, 2016. The unaudited pro forma condensed combined statement of operations for the nine months ended September 30, 2016 and for the year ended December 31, 2015 assumes that the Merger took place as of January 1, 2015, and combines the historical results of Signal and Miragen for the nine months ended September 30, 2016., and for the year ended December 31, 2015, respectively. Based on the terms of the Merger, Private Miragen is deemed to be the acquiring company for accounting purposes and the transaction will be accounted for as an asset acquisition in accordance with accounting principles generally accepted in the United States (U.S. GAAP). Accordingly, the assets and liabilities of Private Miragen will be recorded as of the Merger closing date at their respective carrying value and the acquired net assets of Signal will be recorded as of the Merger closing date at their fair value. For the purpose of these unaudited pro forma financial statements, management of Private Miragen and Signal have determined a preliminary estimated purchase price for the asset acquisition, and such amount has been calculated as described in Note 2 to these unaudited pro forma condensed combined financial statements. The net assets acquired in connection with the transaction are at their estimated fair values. A final determination of these estimated fair values will be based on the actual net acquired assets of Signal as of the Merger closing date.

2. Preliminary Purchase Price

The estimated fair value of the net assets of Signal, on a pro forma basis after given effect to the concurrent sale of Signal s test business and conversion of Signal s note payable to related party, on September 30, 2016 was $2.4 million. As Signal s net assets are predominantly comprised of cash offset by current liabilities, the pro forma carrying value of Signal s net assets is considered to be the best indicator of the fair value and, therefore, the preliminary estimated

purchase price as of September 30, 2016. The estimated preliminary purchase price at

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the Merger closing date will change due to the amount of cash used by Signal s operations after September 30, 2016 to the closing of the Merger and other changes in the Signal assets and liabilities that occur through the completion of the Merger.

The preliminary acquired net assets of Signal based on their pro forma estimated fair values as of September 30, 2016 are as follows (in thousands):

Cash and cash equivalents	$ 6,176
Prepaid and other current assets	215
Property and equipment, net	54
Other assets	15
Current liabilities	(4,035)
Other liabilities	(25)
Net acquired tangible assets	$ 2,400

The allocation of the estimated purchase price is preliminary because the proposed Merger has not yet been completed. The purchase price allocation will remain preliminary until Miragen determines the fair values of assets acquired and liabilities assumed. The final determination of the purchase price allocation is anticipated to be completed as soon as practicable after completion of the Merger and will be based on the fair values of the assets acquired and liabilities assumed as of the Merger closing date. Miragen does not expect to acquire or assign any value to intangible assets. The final amounts allocated to assets acquired and liabilities assumed could differ significantly from the amounts presented in the unaudited pro forma condensed combined financial statements.

3. Pro Forma Adjustments

The unaudited pro forma condensed combined financial statements include pro forma adjustments to give effect to certain significant transactions of Private Miragen as a direct result of the Merger, or for accounting purposes, the acquisition of Signal s net assets by Private Miragen, and the sale of Signal s intellectual property assets related to its MyPRS test concurrent with the Merger. The pro forma adjustments reflecting the completion of the Merger are based upon the accounting analysis conclusion that the Merger should be accounted for as an asset acquisition and upon the assumptions set forth below.

A. To reflect the elimination of Signal s historical stockholders equity balances and accumulated deficit, including the impact of the pro forma adjustments below.

B. To reflect $39.4 million in proceeds to be received by Miragen, net of $1.3 million in estimated transaction costs, in connection with the consummation of a private financing. The private financing is contingent upon the Merger and is expected to close concurrent with the Merger. If the Merger does not close, investors who have agreed to the financing are not required to complete the financing. While the Merger is not contingent upon Miragen completing the private financing, Miragen considers the financing directly related to the Merger.

C. To reflect the conversion of Private Miragen s redeemable convertible preferred stock to Signal s common stock in connection with the Merger.

D. To reflect the $40.7 million capital to be raised by Private Miragen prior to the Merger and the issuance of Private Miragen s common stock in connection with the consummation of the private financing, net of $1.3 million in estimated transaction costs.

E. To record estimated transaction costs, such as advisor fees, legal and accounting expenses, and tail insurance that were not incurred as of September 30, 2016.

F. To reflect elimination of transaction costs, such as legal and accounting fees, of both Signal and Private Miragen.

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G. To reflect reclassification of preferred stock warrants to common stock warrants as a result of the Merger and the related elimination of amounts recorded for change in value of preferred stock warrants.

H. To reflect the elimination of accretion of offering costs on Miragen redeemable preferred stock to be converted into Private Miragen common stock in advance and as a result of the Merger.

I. To reflect the sale and disposition of Signal s intellectual property assets related to its MyPRS test concurrent with the Merger.

J. To reflect the conversion of Signal s note payable to related party to common stock concurrent with the Merger and the related elimination of amounts recorded for interest expense.

K. To reflect additional shares issued as a result of the Merger, conversion of Signal s note payable to related party, Private Miragen s financings, and acceleration of Signal restricted stock units in connection with the Merger.

L. To reflect the acceleration of Signal s restricted stock units in conjunction with the Merger.

M. To record estimated severance and retention charges to be incurred by Signal in connection with the Merger.

N. To record the issuance of Private Miragen Common Stock required to be issued by Miragen as a result of the Merger under a pre-existing subscription agreement.

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Annex A

AGREEMENT AND PLAN OF MERGER

AND REORGANIZATION

among

SIGNAL GENETICS, INC.,

SIGNAL MERGER SUB, INC., and

MIRAGEN THERAPEUTICS, INC.

Dated as of October 31, 2016

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AGREEMENT AND PLAN OF MERGER AND REORGANIZATION

THIS AGREEMENT AND PLAN OF MERGER AND REORGANIZATION (this ***Agreement***) is made and entered into as of October 31, 2016, by and among **Signal Genetics, Inc.,** a Delaware corporation (***Signal***), **Signal Merger Sub, Inc.**, a Delaware corporation (***Merger Sub***), and **Miragen Therapeutics, Inc.**, a Delaware corporation (***Miragen***). Certain capitalized terms used in this Agreement are defined in Exhibit A.

RECITALS

A. Signal and Miragen intend to effect a merger of Merger Sub into Miragen (the ***Merger***) in accordance with this Agreement and the DGCL. Upon consummation of the Merger, Merger Sub will cease to exist, and Miragen will become a wholly-owned subsidiary of Signal.

B. The Parties intend, by approving resolutions authorizing this Agreement, to adopt this Agreement as a plan of reorganization within the meaning of Section 368(a) of the Code, and to cause the Merger to qualify as a reorganization under the provisions of Section 368(a) of the Code and the Treasury Regulations promulgated thereunder.

C. The Signal Board of Directors (i) has determined that the Merger is fair to, and in the best interests of, Signal and the Signal Stockholders, (ii) has deemed advisable and approved this Agreement, the Merger, the Signal Stockholder Matters, the Other Signal Stockholder Matters, and other actions contemplated by this Agreement; and (iii) has determined to recommend that the Signal Stockholders vote to approve the Signal Stockholder Matters and the Other Signal Stockholder Matters.

D. The Board of Directors of Merger Sub (i) has determined that the Merger is fair to, and in the best interests of, Merger Sub and its sole stockholder, (ii) has deemed advisable and approved this Agreement, the Merger, and the applicable Contemplated Transactions, and (iii) has determined to recommend that the stockholder of Merger Sub vote to adopt this Agreement and thereby approve the Merger and the applicable Contemplated Transactions.

E. The Miragen Board of Directors (i) has determined that the Merger is advisable and fair to, and in the best interests of, Miragen and the Miragen Stockholders, (ii) has deemed advisable and approved the Miragen Stockholder Matters and other actions contemplated by this Agreement, and (iii) has determined to recommend that the Miragen Stockholders vote to approve the Miragen Stockholder Matters.

F. In order to induce Signal to enter into this Agreement and to cause the Merger to be consummated, the officers and directors of Miragen and the Miragen Stockholders, in each case, listed on Schedule A hereto are executing concurrently with the execution and delivery of this Agreement support agreements in favor of Signal in the form substantially attached hereto as Exhibit B (the ***Miragen Stockholder Support Agreements***).

G. In order to induce Miragen to enter into this Agreement and to cause the Merger to be consummated, the officers and directors of Signal and the Signal Stockholders, in each case, listed on Schedule B hereto are executing support agreements in favor of Miragen concurrently with the execution and delivery of this Agreement in the form substantially attached hereto as Exhibit C (the ***Signal Stockholder Support Agreements***).

H. It is expected that within five Business Days after the Form S-4 Registration Statement is declared effective by the SEC under the Securities Act, Miragen will deliver the Miragen Stockholder Written Consent.

I. Immediately prior to the execution and delivery of this Agreement, certain investors have executed a Subscription Agreement substantially in the form attached hereto as Exhibit E among Miragen and the Persons

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named therein, pursuant to which such Persons have agreed to purchase the number of shares of Miragen Capital Stock set forth therein prior to the Closing in connection with the Miragen Pre-Closing Financing (the ***Subscription Agreement***).

J. Prior to the execution and delivery of this Agreement, and as a condition of the willingness of Miragen to enter into this Agreement, Signal has entered into a letter of intent dated October 19, 2016, providing for the sale of all of Signal s intellectual property assets related to the Lab Business.

AGREEMENT

The parties to this Agreement, intending to be legally bound, agree as follows:

ARTICLE 1. DESCRIPTION OF TRANSACTION

1.1 Structure of the Merger. Upon the terms and subject to the conditions set forth in this Agreement and in accordance with the DGCL, at the Effective Time, (a) Merger Sub shall be merged with and into Miragen, and (b) the separate existence of Merger Sub shall cease and Miragen will continue its corporate existence under the DGCL as the surviving corporation in the Merger (the ***Surviving Corporation***).

1.2 Effects of the Merger. The Merger shall have the effects set forth in this Agreement and in the applicable provisions of the DGCL. As a result of the Merger, Miragen will become a wholly-owned subsidiary of Signal.

1.3 Closing; Effective Time. Unless this Agreement is earlier terminated pursuant to the provisions of Section 9.1, and subject to the satisfaction or waiver of the conditions set forth in Article 6, Article 7 and Article 8, the closing of the Merger (the ***Closing***) shall take place at the offices of Cooley LLP, 380 Interlocken Crescent, Suite 900, Broomfield, Colorado, as promptly as practicable (but in no event later than the second Business Day following the satisfaction or waiver of the last to be satisfied or waived of the conditions set forth in Article 6, Article 7 and Article 8, other than those conditions that by their nature are to be satisfied at the Closing, but subject to the satisfaction or waiver of each of such conditions), or at such other time, date and place as Signal and Miragen may mutually agree in writing; *provided, however*, that if Miragen is not prepared to close the Miragen Pre-Closing Financing at such time, Miragen has the right, in its sole discretion to delay the Closing for up to five Business Days. The date on which the Closing actually takes place is referred to as the ***Closing Date***. At the Closing, the Parties hereto shall cause a certificate of merger (the ***Certificate of Merger***) to be executed, acknowledged and filed with the Secretary of State of the State of Delaware in accordance with the applicable requirements of the DGCL and shall make all other filings or recordings required under the DGCL. The Merger will become effective at such time as the Certificate of Merger has been duly filed with the Secretary of State of the State of Delaware or at such later time as may be specified in such Certificate of Merger with the consent of Signal and Miragen (the time as of which the Merger becomes effective being referred to as the ***Effective Time***).

1.4 Certificate of Incorporation and Bylaws; Directors and Officers. At the Effective Time:

(a) the certificate of incorporation of the Surviving Corporation shall be amended and restated in its entirety to read as set forth in Exhibit D until thereafter amended as provided by the DGCL and such certificate of incorporation;

(b) the certificate of incorporation of Signal shall be the certificate of incorporation of Signal immediately prior to the Effective Time, until thereafter amended as provided by the DGCL and such certificate of incorporation; *provided*, *however*, that at the Effective Time, Signal shall file one or more amendments to its certificate of incorporation, to the extent approved by the holders of Signal Common Stock as contemplated by

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Section 5.3, to (i) change the name of Signal to Miragen Therapeutics, Inc. , (ii) effect the Miragen Reverse Split, to the extent requested by Miragen prior to the filing with the SEC of the Proxy Statement / Prospectus / Information Statement, (iii) increase the authorized shares of Signal Common Stock, to the extent requested by Miragen prior to the filing with the SEC of the Proxy Statement / Prospectus / Information Statement, (iv) prohibit the ability of Signal Stockholders to act by written consent, and (v) make such other changes as are mutually agreeable to Signal and Miragen;

(c) the bylaws of the Surviving Corporation shall be amended and restated in their entirety to read identically to the bylaws of Merger Sub as in effect immediately prior to the Effective Time, until thereafter amended in accordance with the terms of such bylaws, the certificate of incorporation of the Surviving Corporation and the DGCL;

(d) the bylaws of Signal shall be the bylaws of Signal immediately prior to the Effective Time; *provided, however*, that effective at the Effective Time, Signal shall amend its bylaws, to (i) prohibit the ability of Signal Stockholders to act by written consent and (ii) make such other changes as are mutually agreeable to Signal and Miragen;

(e) the directors and officers of Signal, each to hold office in accordance with the certificate of incorporation and bylaws of Signal, shall be as set forth in Section 5.13; and

(f) the directors and officers of the Surviving Corporation, each to hold office in accordance with the certificate of incorporation and bylaws of the Surviving Corporation, shall be the directors and officers of Signal as set forth in Section 5.13, after giving effect to the provisions of Section 5.13.

1.5 Conversion of Shares and Issuance of Warrants.

(a) At the Effective Time, by virtue of the Merger and without any further action on the part of Signal, Merger Sub, Miragen or any Miragen Stockholder:

(i) each share of Miragen Common Stock or Miragen Preferred Stock held as treasury stock or held or owned by Miragen, any Miragen Subsidiary, Signal, or Merger Sub, immediately prior to the Effective Time shall be canceled and retired and shall cease to exist, and no consideration shall be delivered in exchange therefor; and

(ii) subject to Section 1.5(c), each share of Miragen Common Stock (including any shares of Miragen Common Stock issued pursuant to the Miragen Pre-Closing Financing) outstanding immediately prior to the Effective Time (excluding shares to be canceled pursuant to Section 1.5(a)(i) and Dissenting Shares, and after giving effect to the Preferred Stock Conversion) shall be converted solely into the right to receive a number of shares of Signal Common Stock equal to the Exchange Ratio (the ***Merger Consideration***).

(b) If any shares of Miragen Common Stock outstanding immediately prior to the Effective Time are unvested or are subject to a repurchase option or the risk of forfeiture under any applicable restricted stock purchase agreement or other agreement with Miragen, then the shares of Signal Common Stock issued in exchange for such shares of Miragen Common Stock will to the same extent be unvested and subject to the same repurchase option or risk of forfeiture, and the book-entry shares of Signal Common Stock shall accordingly be marked with appropriate legends. Miragen shall take all actions that may be necessary to ensure that, from and after the Effective Time, Signal is entitled to exercise any such repurchase option or other right set forth in any such restricted stock purchase agreement or other agreement.

(c) No fractional shares of Signal Common Stock shall be issued in connection with the Merger, and no certificates or scrip for any such fractional shares shall be issued. Any holder of Miragen Common Stock who would otherwise be

entitled to receive a fraction of a share of Signal Common Stock (after aggregating all

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fractional shares of Signal Common Stock issuable to such holder) shall, in lieu of such fraction of a share and upon surrender by such holder of a letter of transmittal in accordance with Section 1.8 and accompanying documents as required therein, be paid in cash the dollar amount (rounded to the nearest whole cent), without interest, determined by multiplying such fraction by the closing price of a share of Signal Common Stock on The NASDAQ Capital Market (or such other NASDAQ market on which the Signal Common Stock then trades) on the date the Merger becomes effective.

(d) All Miragen Options outstanding immediately prior to the Effective Time under the 2008 Plan and all Miragen Warrants outstanding immediately prior to the Effective Time shall be assumed by Signal and converted into options to purchase Signal Common Stock or warrants to purchase Signal Common Stock, as applicable, in accordance with Section 5.5.

(e) Each share of Common Stock, $0.001 par value per share, of Merger Sub issued and outstanding immediately prior to the Effective Time shall be converted into and exchanged for one validly issued, fully paid and nonassessable share of Common Stock, $0.001 par value per share, of the Surviving Corporation. Each stock certificate of Merger Sub evidencing ownership of any such shares shall, as of the Effective Time, evidence ownership of such shares of Common Stock of the Surviving Corporation.

(f) If, between the time of calculating the Exchange Ratio and the Effective Time, the outstanding shares of Miragen Capital Stock or Signal Common Stock have been changed into, or exchanged for, a different number of shares or a different class, by reason of any stock dividend, subdivision, reclassification, recapitalization, split (including the NASDAQ Reverse Split and the Miragen Reverse Split to the extent either such split has not previously been taken into account in calculating the Exchange Ratio), combination or exchange of shares, the Exchange Ratio shall be correspondingly adjusted to provide the holders of Miragen Common Stock, Miragen Options and Miragen Warrants the same economic effect as contemplated by this Agreement prior to such event.

1.6 Calculation of Net Cash.

(a) For the purposes of this Agreement, the ***Determination Date*** shall be the date that is 10 calendar days prior to the anticipated date for Closing, as agreed upon by Signal and Miragen at least 10 calendar days prior to the Signal Stockholders Meeting (the ***Anticipated Closing Date***). On or prior to the Determination Date, Signal shall provide Miragen with a list of all Liabilities of Signal as of the Determination Date that are individually in excess of $10,000 or in excess of $25,000 in the aggregate, which had not previously been disclosed to Miragen in the Signal Disclosure Schedule. Within five calendar days following the Determination Date, Signal shall deliver to Miragen a schedule (the ***Net Cash Schedule***) setting forth, in reasonable detail, Signal s good faith, estimated calculation of Net Cash (using an estimate of Signal s accounts payable and accrued expenses, in each case as of the Anticipated Closing Date and determined in a manner substantially consistent with the manner in which such items were determined for Signal s most recent SEC filings) (the ***Net Cash Calculation***) as of the Anticipated Closing Date prepared and certified by Signal s Chief Financial Officer (or if there is no Chief Financial Officer, the principal accounting officer for Signal). Signal shall make the work papers and back-up materials used or useful in preparing the Net Cash Schedule, as reasonably requested by Miragen, available to Miragen and, if requested by Miragen, its accountants and counsel at reasonable times and upon reasonable notice.

(b) Within three calendar days after Signal delivers the Net Cash Schedule (the ***Response Date***), Miragen will have the right to dispute any part of such Net Cash Schedule by delivering a written notice to that effect to Signal (a ***Dispute Notice***). Any Dispute Notice shall identify in reasonable detail the nature of any proposed revisions to the Net Cash Calculation.

(c) If on or prior to the Response Date, (i) Miragen notifies Signal in writing that it has no objections to the Net Cash Calculation or (ii) Miragen fails to deliver a Dispute Notice as provided in Section 1.6(b), then the Net Cash Calculation as set forth in the Net Cash Schedule shall be deemed to have been finally determined for purposes of this Agreement and to represent the Net Cash at the Anticipated Closing Date for purposes of this Agreement.

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(d) If Miragen delivers a Dispute Notice on or prior to the Response Date, then Representatives of Signal and Miragen shall promptly meet and attempt in good faith to resolve the disputed item(s) and negotiate an agreed-upon determination of Net Cash, which agreed upon Net Cash amount shall be deemed to have been finally determined for purposes of this Agreement and to represent the Net Cash at the Anticipated Closing Date for purposes of this Agreement.

(e) If Representatives of Signal and Miragen are unable to negotiate an agreed-upon determination of Net Cash at the Anticipated Closing Date pursuant to Section 1.6(d) within three calendar days after delivery of the Dispute Notice (or such other period as Signal and Miragen may mutually agree upon), then Signal and Miragen shall jointly select an independent auditor of recognized national standing (the ***Accounting Firm***) to resolve any remaining disagreements as to the Net Cash Calculation. Signal shall promptly deliver to the Accounting Firm the work papers and back-up materials used in preparing the Net Cash Schedule, and Signal and Miragen shall use commercially reasonable efforts to cause the Accounting Firm to make its determination within 10 calendar days of accepting its selection. Miragen and Signal shall be afforded the opportunity to present to the Accounting Firm any material related to the unresolved disputes and to discuss the issues with the Accounting Firm; *provided, however*, that no such presentation or discussion shall occur without the presence of a Representative of each of Miragen and Signal. The determination of the Accounting Firm shall be limited to the disagreements submitted to the Accounting Firm. The determination of the amount of Net Cash made by the Accounting Firm shall be deemed to have been finally determined for purposes of this Agreement and to represent the Net Cash at the Anticipated Closing Date for purposes of this Agreement, and the Parties shall delay the Closing until the resolution of the matters described in this Section 1.6(e). The fees and expenses of the Accounting Firm shall be allocated between Signal and Miragen in the same proportion that the disputed amount of the Net Cash that was unsuccessfully disputed by such Party (as finally determined by the Accounting Firm) bears to the total disputed amount of the Net Cash amount (and for the avoidance of doubt the fees and expenses to be paid by Signal shall reduce the Net Cash). If this Section 1.6(e) applies as to the determination of the Net Cash at the Anticipated Closing Date described in Section 1.6(a), upon resolution of the matter in accordance with this Section 1.6(e), the Parties shall not be required to determine Net Cash again even though the Closing Date may occur later than the Anticipated Closing Date, except that either Party may request a redetermination of Net Cash if the Closing Date is more than five Business Days after the Anticipated Closing Date.

1.7 Closing of Miragen s Transfer Books. At the Effective Time: (a) all shares of Miragen Common Stock outstanding immediately prior to the Effective Time (after giving effect to the Preferred Stock Conversion) shall be treated in accordance with Section 1.5(a), and all holders of certificates representing shares of Miragen Capital Stock that were outstanding immediately prior to the Effective Time shall cease to have any rights as Miragen Stockholders; and (b) the stock transfer books of Miragen shall be closed with respect to all shares of Miragen Capital Stock outstanding immediately prior to the Effective Time. No further transfer of any such shares of Miragen Capital Stock shall be made on such stock transfer books after the Effective Time. If, after the Effective Time, a valid certificate previously representing any shares of Miragen Capital Stock, including any valid certificate representing any shares of Miragen Preferred Stock previously converted into shares of Miragen Common Stock in connection with the Preferred Stock Conversion, outstanding immediately prior to the Effective Time (an ***Miragen Stock Certificate***) is presented to the Exchange Agent or to the Surviving Corporation, such Miragen Stock Certificate shall be canceled and shall be exchanged as provided in Section 1.5 and Section 1.8.

1.8 Surrender of Certificates.

(a) On or prior to the Closing Date, Signal and Miragen shall agree upon and select a reputable bank, transfer agent or trust company to act as exchange agent in the Merger (the ***Exchange Agent***). At the Effective Time, Signal shall deposit with the Exchange Agent: (i) the aggregate number of book-entry shares representing the Merger Consideration issuable to Miragen Stockholders pursuant to Section 1.5(a) and (ii) cash sufficient to make payments

in lieu of fractional shares in accordance with Section 1.5(c). The book-entry shares of Signal Common Stock and cash amounts so deposited with the Exchange Agent, together with any dividends or distributions received by the Exchange Agent with respect to such shares, are referred to collectively as the ***Exchange Fund***.

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(b) Promptly after the Effective Time, the Parties shall cause the Exchange Agent to mail to the Persons who were record holders of Miragen Stock Certificates immediately prior to the Effective Time, as set forth on the Allocation Certificate: (i) a letter of transmittal in customary form; and (ii) instructions for effecting the surrender of Miragen Stock Certificates in exchange for book-entry shares of Signal Common Stock. Upon surrender of an Miragen Stock Certificate to the Exchange Agent for exchange, together with a duly executed letter of transmittal and such other documents as may be reasonably required by the Exchange Agent: (A) the holder of such Miragen Stock Certificate shall be entitled to receive in exchange therefor one or more book-entry shares representing the portion of the Merger Consideration (in a number of whole shares of Signal Common Stock) that such holder has the right to receive pursuant to the provisions of Section 1.5(a) (and cash in lieu of any fractional share of Signal Common Stock pursuant to the provisions of Section 1.5(c)); and (B) upon delivery of such consideration to the applicable holder in accordance with Section 1.5, the Miragen Stock Certificate so surrendered shall be canceled. Until surrendered as contemplated by this Section 1.8(b), each Miragen Stock Certificate shall be deemed, from and after the Effective Time, to represent only the right to receive shares of Signal Common Stock (and cash in lieu of any fractional share of Signal Common Stock). If any Miragen Stock Certificate has been lost, stolen or destroyed, Signal may, in its discretion and as a condition precedent to the delivery of any shares of Signal Common Stock, require the owner of such lost, stolen or destroyed Miragen Stock Certificate to provide an applicable affidavit with respect to such Miragen Stock Certificate and post a bond indemnifying Signal against any claim suffered by Signal related to the lost, stolen or destroyed Miragen Stock Certificate or any Signal Common Stock issued in exchange therefor as Signal may reasonably request.

(c) No dividends or other distributions declared or made with respect to Signal Common Stock with a record date after the Effective Time shall be paid to the holder of any unsurrendered Miragen Stock Certificate with respect to the shares of Signal Common Stock that such holder has the right to receive in the Merger until such holder surrenders such Miragen Stock Certificate or an affidavit of loss or destruction in lieu thereof in accordance with this Section 1.8 (at which time such holder shall be entitled, subject to the effect of applicable abandoned property, escheat or similar laws, to receive all such dividends and distributions, without interest).

(d) Any portion of the Exchange Fund that remains undistributed to holders of Miragen Stock Certificates six months after the Closing Date shall be delivered to Signal upon demand, and any holders of Miragen Stock Certificates who have not theretofore surrendered their Miragen Stock Certificates in accordance with this Section 1.8 shall thereafter look only to Signal for satisfaction of their claims for Signal Common Stock, cash in lieu of fractional shares of Signal Common Stock and any dividends or distributions with respect to shares of Signal Common Stock.

(e) Each of the Exchange Agent, Signal and the Surviving Corporation shall be entitled to deduct and withhold from any consideration deliverable pursuant to this Agreement to any holder of any Miragen Stock Certificate such amounts as are required to be deducted or withheld from such consideration under the Code or under any other applicable Legal Requirement and shall be entitled to request any reasonably appropriate Tax forms, including an IRS Form W-9 (or the appropriate IRS Form W-8, as applicable), from any recipient of payments hereunder. To the extent such amounts are so deducted or withheld, and remitted to the appropriate Tax authority, such amounts shall be treated for all purposes under this Agreement as having been paid to the Person to whom such amounts would otherwise have been paid.

(f) No party to this Agreement shall be liable to any holder of any Miragen Stock Certificate or to any other Person with respect to any shares of Signal Common Stock (or dividends or distributions with respect thereto) or for any cash amounts delivered to any public official pursuant to any applicable abandoned property law, escheat law or similar Legal Requirement.

1.9 Appraisal Rights.

(a) Notwithstanding any provision of this Agreement to the contrary, shares of Miragen Capital Stock that are outstanding immediately prior to the Effective Time (other than shares canceled pursuant to Section

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1.5(a)(i)) and are held by an Miragen Stockholder who has not voted in favor of adoption of this Agreement or consented thereto in writing and who has properly exercised and perfected appraisal rights for such shares of Miragen Common Stock in accordance with the DGCL (collectively, the ***Dissenting Shares***) shall not be converted into or represent the right to receive the portion of the Merger Consideration attributable to such Dissenting Shares, but instead shall be entitled to only such rights as are granted by Section 262 of the DGCL; *provided, however*, that if after the Effective Time, such stockholder fails to perfect or effectively withdraws or otherwise loses such holder s appraisal rights under the DGCL or if a court of competent jurisdiction determines that such holder is not entitled to the relief provided by Section 262 of the DGCL, such shares of Miragen Common Stock shall be deemed to be converted into and to have become exchangeable for, as of the Effective Time, the right to receive the portion of the Merger Consideration attributable to such Dissenting Shares upon their surrender in the manner provided in Section 1.5, without interest thereon.

(b) Miragen shall give Signal prompt written notice of any demands by dissenting stockholders received by Miragen, withdrawals of such demands and any other instruments served on Miragen and any material correspondence received by Miragen in connection with such demands.

1.10 Further Action. If, at any time after the Effective Time, any further action is determined by the Surviving Corporation to be necessary or desirable to carry out the purposes of this Agreement or to vest the Surviving Corporation with full right, title and possession of and to all rights and property of Miragen, then the officers and directors of the Surviving Corporation shall be fully authorized, and shall use their commercially reasonable efforts (in the name of Miragen, in the name of Merger Sub and otherwise) to take such action.

1.11 Tax Consequences. For federal income Tax purposes, the Merger is intended to constitute a reorganization within the meaning of Section 368(a) of the Code and the Treasury Regulations promulgated thereunder. The parties to this Agreement adopt this Agreement as a plan of reorganization within the meaning of Treasury Regulations Section 1.368-2(g).

1.12 Certificates.

(a) Signal will prepare and delivery to Miragen at least two Business Days Prior to the Closing Date, a certificate signed by the Chief Financial Officer of Signal in a form reasonable acceptable to Miragen, which sets forth a true and complete list, as of immediately prior to the Effective Time of the number of Signal Outstanding Shares and each component thereof (broken down by outstanding shares of Signal Common Stock, Signal Options, Signal RSUs, Signal Warrants, and other relevant securities) (***Signal Outstanding Shares Certificate***).

(b) Miragen will prepare and deliver to Signal at least one Business Day prior to the Closing Date a certificate signed by the Chief Financial Officer of Miragen in a form reasonably acceptable to Signal, which sets forth a true and complete list, as of immediately prior to the Effective Time (giving effect to the Preferred Stock Conversation and the closing of the Miragen Pre-Closing Financing) of: (a) the record holders of Miragen Common Stock, Miragen Options and Miragen Warrants; (b) the number of shares of Miragen Common Stock owned and/or underlying the Miragen Options or Miragen Warrants held by such holders and the per share exercise price for each such Miragen Option and Miragen Warrant; and (c) the portion of the Merger Consideration each such holder is entitled to receive pursuant to Section 1.5 (the ***Allocation Certificate***).

ARTICLE 2. REPRESENTATIONS AND WARRANTIES OF Miragen

Miragen represents and warrants to Signal and Merger Sub as follows, except as set forth in the written disclosure schedule delivered by Miragen to Signal (the ***Miragen Disclosure Schedule***) (it being understood that the

representations and warranties in this Article 2 are qualified by: (a) any exceptions and disclosures set forth in the section or subsection of the Miragen Disclosure Schedule corresponding to the particular section or subsection in this Article 2 in which such representation and warranty appears; (b) any exceptions or disclosures

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explicitly cross-referenced in such section or subsection of the Miragen Disclosure Schedule by reference to another section or subsection of the Miragen Disclosure Schedule; and (c) any exceptions or disclosures set forth in any other section or subsection of the Miragen Disclosure Schedule to the extent it is reasonably apparent from the wording of such exception or disclosure that such exception or disclosure qualifies such representation and warranty). The inclusion of any information in the Miragen Disclosure Schedule shall not be deemed to be an admission or acknowledgement, in and of itself, that such information is required by the terms hereof to be disclosed, is material, has resulted in or would result in an Miragen Material Adverse Effect, or is outside the Ordinary Course of Business.

2.1 Subsidiaries; Due Organization; Organizational Documents.

(a) Section 2.1(a) of the Miragen Disclosure Schedule identifies each Subsidiary of Miragen (the ***Miragen Subsidiaries***). Neither Miragen nor any Entity identified on this Section 2.1(a) of the Miragen Disclosure Schedule owns any capital stock of, or any equity interest of any nature in, any other Entity. Miragen has not agreed nor is obligated to make, nor is bound by any Contract under which it may become obligated to make, any future investment in or capital contribution to any other Entity. Miragen has not, at any time, been a general partner of, or has otherwise been liable for any of the debts or other obligations of, any general partnership, limited partnership or other Entity.

(b) Each of Miragen and the Miragen Subsidiaries is a corporation or limited liability company, as applicable, duly organized, validly existing and in good standing under the laws of the jurisdiction of its incorporation or organization, as applicable, and has all necessary power and authority: (i) to conduct its business in the manner in which its business is currently being conducted; (ii) to own and use its assets in the manner in which its assets are currently owned and used; and (iii) to perform its obligations under all Miragen Contracts.

(c) Each of Miragen and the Miragen Subsidiaries is qualified to do business as a foreign corporation or limited liability company, as applicable, and is in good standing, under the laws of all jurisdictions where the nature of its business requires such qualification other than in jurisdictions where the failure to be so qualified would not constitute an Miragen Material Adverse Effect.

(d) Each director and officer of Miragen as of the date of this Agreement is set forth in Section 2.1(d) of the Miragen Disclosure Schedule.

(e) Miragen has delivered or made available to Signal accurate and complete copies of the certificate of incorporation, bylaws and other charter and organizational documents, including all currently effective amendments thereto, for Miragen and each Miragen Subsidiary.

2.2 Authority; Vote Required.

(a) Miragen has all necessary corporate power and authority to enter into and to perform its obligations under this Agreement. The Miragen Board of Directors has: (i) determined that the Merger is fair to, and in the best interests of Miragen and Miragen Stockholders; (ii) duly authorized and approved by all necessary corporate action, the execution, delivery and performance of this Agreement and the Contemplated Transactions; (iii) recommended the approval of the Miragen Stockholder Matters by the Miragen Stockholders and directed that the Miragen Stockholder Matters be submitted for consideration by Miragen Stockholders in connection with the solicitation of the Required Miragen Stockholder Vote; and (iv) approved the Miragen Stockholder Support Agreements and the transactions contemplated thereby. This Agreement has been duly executed and delivered by Miragen and, assuming the due authorization, execution and delivery by Signal and Merger Sub, constitutes the legal, valid and binding obligation of Miragen, enforceable against Miragen in accordance with its terms, subject to: (A) laws of general application relating to bankruptcy, insolvency and the relief of debtors; and (B) rules of law governing specific performance, injunctive

relief and other equitable remedies.

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(b) The affirmative vote of the holders of (i) a majority of the shares of Miragen Preferred Stock and Common Stock, voting together as a single class; and (ii) at least 70% of the shares of Miragen Preferred Stock, voting together as a single class, in each case, as outstanding on the record date for the written consent in lieu of a meeting pursuant to Section 228 of the DGCL approving the Miragen Stockholder Matters, in a form reasonably acceptable to Signal (each, an ***Miragen Stockholder Written Consent*** and collectively, the ***Miragen Stockholder Written Consents***) and entitled to vote thereon (collectively, the ***Required Miragen Stockholder Vote***), is the only vote of the holders of any class or series of Miragen Capital Stock necessary to approve the Miragen Stockholder Matters. The shares of Miragen Capital Stock covered by the Miragen Stockholder Support Agreements are sufficient to obtain the Required Miragen Stockholder Vote.

2.3 Non-Contravention; Consents.

(a) The execution and delivery of this Agreement by Miragen does not, and the performance of this Agreement by Miragen will not, (i) conflict with or violate the certificate of incorporation or bylaws of Miragen or the equivalent organizational documents of any of its Subsidiaries; (ii) subject to obtaining the Required Miragen Stockholder Vote and compliance with the requirements set forth in Section 2.3(b) below, conflict with or violate any Legal Requirement applicable to Miragen or any of its Subsidiaries or by which its or any of their respective properties is bound or affected, except for any such conflicts or violations that would not constitute an Miragen Material Adverse Effect; or (iii) require Miragen or any of its Subsidiaries to make any filing with or give any notice or make any payment to a Person, or obtain any Consent from a Person, or result in any breach of or constitute a default (or an event that with notice or lapse of time or both would become a default) under, or impair Miragen s rights or alter the rights or obligations of any third party under, or give to others any rights of termination, amendment, acceleration or cancelation of, or result in the creation of an Encumbrance on any of the properties or assets of Miragen or any of its Subsidiaries pursuant to, any Miragen Material Contract.

(b) No material Consent or order of, or registration, declaration or filing with, any Governmental Body is required by or with respect to Miragen or any of the Miragen Subsidiaries in connection with the execution and delivery of this Agreement or the consummation of the Contemplated Transactions, except for (i) the filing of the Certificate of Merger with the Secretary of State of the State of Delaware pursuant to the DGCL, (ii) any required filings under the HSR Act and any foreign antitrust Legal Requirement and (iii) such Consents, orders, registrations, declarations and filings as may be required under applicable federal and state securities laws.

2.4 Capitalization.

(a) The authorized capital stock of Miragen as of the date of this Agreement consists of: (i) 24,780,394 shares of common stock, par value $0.001 per share (the ***Miragen Common Stock***), of which 875,734 shares are issued and outstanding as of the date of this Agreement; and (ii) 18,655,494 shares of preferred stock, par value $0.001 per share, of which 7,169,176 shares are designated as Series A Preferred Stock, of which 7,149,176 shares are issued and outstanding as of the date of this Agreement, and of which 2,183,318 shares are designated as Series B Preferred Stock, of which 2,166,651 shares are issued and outstanding as of the date of this Agreement, and of which 9,303,000 shares are designated as Series C Preferred Stock, of which 9,268,563 shares are issued and outstanding as of the date of this Agreement (collectively, the ***Miragen Preferred Stock***). Miragen does not hold any of its capital stock in treasury. All of the outstanding shares of Miragen Capital Stock have been duly authorized and validly issued, and are fully paid and nonassessable. As of the date of this Agreement, there are outstanding Miragen Warrants to purchase 10,000 shares of Miragen Common Stock, 20,000 shares of Series A Preferred Stock of Miragen, and 16,667 shares of Series B Preferred Stock of Miragen. Section 2.4(a) of the Miragen Disclosure Schedule lists, as of the date of this Agreement (i) each record holder of issued and outstanding Miragen Capital Stock and the number and type of shares of Miragen Capital Stock held by such holder; and (ii) (A) each holder of issued and outstanding Miragen Warrants,

(B) the number and type of shares subject to such Miragen Warrants, (C) the exercise price of each such Miragen Warrant, and (D) the termination date of each such Miragen Warrant. Each share of Miragen Preferred Stock is convertible into one share of Miragen Common Stock.

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(b) Except for the Miragen 2008 Equity Incentive Plan (the ***2008 Plan***), Miragen does not have any stock option plan or any other plan, program, agreement or arrangement providing for any equity-based compensation for any Person. Miragen has reserved 3,672,515 shares of Miragen Common Stock for issuance under the 2008 Plan. As of the date of this Agreement, of such reserved shares of Miragen Common Stock, 90,958 shares have been issued pursuant to the exercise of outstanding options, options to purchase 3,202,033 shares have been granted and are currently outstanding, and 379,524 shares of Miragen Common Stock remain available for future issuance pursuant to the 2008 Plan. Section 2.4(b) of the Miragen Disclosure Schedule sets forth the following information with respect to each Miragen Option outstanding, as of the date of this Agreement: (A) the name of the optionee; (B) the number of shares of Miragen Common Stock subject to such Miragen Option as of the date of this Agreement; (C) the exercise price of such Miragen Option; (D) the date on which such Miragen Option was granted; and (E) the date on which such Miragen Option expires. No vesting of Miragen Options will accelerate as a result of the Merger.

(c) Except for the outstanding Miragen Warrants set forth on Section 2.4(a) of the Miragen Disclosure Schedule and for the Miragen Options set forth on Section 2.4(b) of the Miragen Disclosure Schedule, there is no: (i) outstanding subscription, option, call, warrant or right (whether or not currently exercisable) to acquire any shares of the capital stock or other securities of Miragen or any of its Subsidiaries; (ii) outstanding security, instrument or obligation that is or may become convertible into or exchangeable for any shares of the capital stock or other securities of Miragen or any of its Subsidiaries; (iii) stockholder rights plan (or similar plan commonly referred to as a poison pill) or Contract under which Miragen or any of its Subsidiaries is or may become obligated to sell or otherwise issue any shares of its capital stock or any other securities; or (iv) condition or circumstance that may give rise to or provide a basis for the assertion of a claim by any Person to the effect that such Person is entitled to acquire or receive any shares of capital stock or other securities of Miragen or any of its Subsidiaries. There are no outstanding or authorized stock appreciation, phantom stock, profit participation, restricted stock units, equity-based or other similar rights with respect to Miragen or any of its Subsidiaries.

(d) (i) None of the outstanding shares of Miragen Capital Stock are entitled or subject to any preemptive right, right of repurchase or forfeiture, right of participation, right of maintenance or any similar right; (ii) none of the outstanding shares of Miragen Capital Stock are subject to any right of first refusal in favor of Miragen; (iii) there are no outstanding bonds, debentures, notes or other indebtedness of Miragen or its Subsidiaries having a right to vote on any matters on which the Miragen Stockholders have a right to vote; (iv) there is no Miragen Contract to which Miragen or its Subsidiaries are a party relating to the voting or registration of, or restricting any Person from purchasing, selling, pledging or otherwise disposing of (or from granting any option or similar right with respect to), any shares of Miragen Capital Stock. Neither Miragen nor any of its Subsidiaries is under any obligation, or is bound by any Contract pursuant to which it may become obligated, to repurchase, redeem or otherwise acquire any outstanding shares of Miragen Capital Stock or other securities.

(e) All outstanding shares of Miragen Capital Stock, as well as all Miragen Options and all Miragen Warrants, have been issued and granted, as applicable, in material compliance with all applicable securities laws and other applicable Legal Requirements.

2.5 Financial Statements.

(a) Section 2.5(a) of the Miragen Disclosure Schedule includes true and complete copies of (i) Miragen s audited consolidated balance sheets at December 31, 2014 and December 31, 2015, (ii) the Miragen Unaudited Interim Balance Sheet, (iii) Miragen s audited consolidated statements of income, cash flow and stockholders equity for the years ended December 31, 2014 and December 31, 2015, and (iv) Miragen s unaudited statements of income, cash flow and shareholders equity for the six months ended June 30, 2016 (collectively, the ***Miragen Financials***). The Miragen Financials (A) were prepared in accordance with United States generally accepted accounting principles

(***GAAP***) (except as may be indicated in the footnotes to such Miragen Financials and that unaudited financial statements may not have notes thereto and other presentation

items that may be required by GAAP and are subject to normal and recurring year-end adjustments that are not reasonably expected to be material in amount) applied on a consistent basis unless otherwise noted therein throughout the periods indicated and (B) fairly present the financial condition and operating results of Miragen and its consolidated Subsidiaries as of the dates and for the periods indicated therein.

(b) Each of Miragen and its Subsidiaries maintains a system of internal accounting controls designed to provide reasonable assurance that: (i) transactions are executed in accordance with management s general or specific authorizations; (ii) transactions are recorded as necessary to permit preparation of financial statements in conformity with GAAP and to maintain asset accountability; (iii) access to assets is permitted only in accordance with management s general or specific authorization; and (iv) the recorded accountability for assets is compared with the existing assets at reasonable intervals and appropriate action is taken with respect to any differences. Miragen and each of its Subsidiaries maintains internal control over financial reporting that provides reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with GAAP.

2.6 Absence of Changes. Since June 30, 2016 through the date of this Agreement, each of Miragen and its Subsidiaries has conducted its business in the Ordinary Course of Business and there has not been (a) any event that has had an Miragen Material Adverse Effect or (b) or any action, event or occurrence that would have required consent of Signal pursuant to Section 4.3(b) of this Agreement had such action, event or occurrence taken place after the execution and delivery of this Agreement.

2.7 Title to Assets. Each of Miragen and the Miragen Subsidiaries owns, and has good and valid title to, or, in the case of leased properties and assets, valid leasehold interests in, all tangible properties or assets and equipment used or held for use in its business or operations or purported to be owned by it, in each case, free and clear of any Encumbrances, except for: (i) any lien for current Taxes not yet due and payable or for Taxes that are being contested in good faith and for which adequate reserves have been made on the Miragen Unaudited Interim Balance Sheet; (ii) minor liens that have arisen in the Ordinary Course of Business and that do not (in any case or in the aggregate) materially detract from the value of the assets subject thereto or materially impair the operations of Miragen or any Miragen Subsidiary; and (iii) liens listed in Section 2.7 of the Miragen Disclosure Schedule.

2.8 Real Property; Leaseholds. Neither Miragen nor any Miragen Subsidiary currently owns or has ever owned any real property or any interest in real property, except for the leaseholds created under the real property leases (including any amendments thereto) identified in Section 2.8 of the Miragen Disclosure Schedule (the ***Miragen Leases***), which are each in full force and effective, with no existing material default thereunder.

2.9 Intellectual Property.

(a) Miragen, directly or through an Miragen Subsidiary, owns, or has the right to use, and has the right to bring actions for the infringement of, all Miragen IP Rights, except for any failure to own or have the right to use, or have the right to bring actions that would not constitute an Miragen Material Adverse Effect.

(b) Section 2.9(b) of the Miragen Disclosure Schedule is an accurate, true and complete listing of all Miragen Registered IP.

(c) Section 2.9(c) of the Miragen Disclosure Schedule accurately identifies (i) all Miragen IP Rights licensed to Miragen or any Miragen Subsidiary (other than (A) any non-customized software that (1) is so licensed solely in executable or object code form pursuant to a non-exclusive, internal use software license and other Intellectual Property associated with such software and (2) is not incorporated into, or material to the development,

manufacturing, or distribution of, any of Miragen s or any Miragen Subsidiary s products or services and (B) any Intellectual Property licensed ancillary to the purchase or use of equipment, reagents or other materials); (ii) the corresponding Miragen Contracts pursuant to which such Miragen IP Rights are licensed

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to Miragen or any Miragen Subsidiary; (iii) whether the license or licenses granted to Miragen or any Miragen Subsidiary are exclusive or non-exclusive; and (iv) whether any funding, facilities or personnel of any Governmental Body were used, directly or indirectly, to develop or create, in whole or in part, such Miragen IP Rights.

(d) Section 2.9(d) of the Miragen Disclosure Schedule accurately identifies each Miragen Contract pursuant to which any Person (other than Miragen or any Miragen Subsidiary) has been granted any license or option to obtain a license under, or otherwise has received or acquired any right (whether or not currently exercisable) or interest in, any Miragen IP Rights. Miragen is not bound by, and no Miragen IP Rights are subject to, any Contract containing any covenant or other provision that in any way limits or restricts the ability of Miragen or any Miragen Subsidiary to use, exploit, assert or enforce any Miragen IP Rights anywhere in the world, in each case as would materially limit the business of Miragen as currently conducted or planned to be conducted.

(e) Miragen or one of its Subsidiaries solely owns all right, title, and interest to and in Miragen IP Rights (other than Miragen IP Rights (i) exclusively or non-exclusively licensed to Miragen or one of its Subsidiaries, as identified in Section 2.9(c) of the Miragen Disclosure Schedule, (ii) any non-customized software that (A) is so licensed solely in executable or object code form pursuant to a non-exclusive, internal use software license and other Intellectual Property associated with such software and (B) is not incorporated into, or material to the development, manufacturing, or distribution of, any of Miragen s or any Miragen Subsidiary s products or services, and (iii) any Intellectual Property licensed ancillary to the purchase or use of equipment, reagents or other materials) free and clear of any Encumbrances. Without limiting the generality of the foregoing:

(i) All documents and instruments necessary to register or apply for or renew registration of all Miragen Registered IP have been validly executed, delivered and filed in a timely manner with the appropriate Governmental Body except for any such failure, individually or collectively, that would not constitute an Miragen Material Adverse Effect.

(ii) Each Person who is or was an employee or contractor of Miragen or any Miragen Subsidiary and who is or was involved in the creation or development of any Miragen IP Rights has signed a valid, enforceable agreement containing an assignment of such Intellectual Property to Miragen or such Subsidiary and confidentiality provisions protecting trade secrets and confidential information of Miragen and its Subsidiaries. To the Knowledge of Miragen and its Subsidiaries, no current or former stockholder, officer, director, employee or contractor of Miragen or any of its Subsidiaries has any claim, right (whether or not currently exercisable), or interest to or in any Miragen IP Rights. To the Knowledge of Miragen and its Subsidiaries, no employee or contractor of Miragen or any or any Miragen Subsidiary is (a) bound by or otherwise subject to any Contract restricting him or her from performing his or her duties for Miragen or such Subsidiary or (b) in breach of any Contract with any current or former employer or other Person concerning Miragen IP Rights or confidentiality provisions protecting trade secrets and confidential information comprising Miragen IP Rights.

(iii) No funding, facilities or personnel of any Governmental Body were used, directly or indirectly, to develop or create, in whole or in part, any Miragen IP Rights in which Miragen or any of its Subsidiaries has an ownership interest.

(iv) Miragen and each of its Subsidiaries has taken reasonable steps to maintain the confidentiality of and otherwise protect and enforce its rights in all proprietary information that Miragen or such Subsidiary holds, or purports to hold, as a trade secret.

(v) Neither Miragen nor any of its Subsidiaries has assigned or otherwise transferred ownership of, or agreed to assign or otherwise transfer ownership of, any Miragen IP Rights to any other Person.

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(vi) To the Knowledge of Miragen and its Subsidiaries, the Miragen IP Rights constitute all Intellectual Property necessary for Miragen and its Subsidiaries to conduct its business as currently conducted or planned to be conducted.

(f) The manufacture, marketing, license, sale or intended use of any product or service currently approved or sold or under preclinical or clinical development by Miragen or any of its Subsidiaries (i) does not violate or constitute a breach of any license or agreement between Miragen or its Subsidiaries and any third party, and, (ii) to the Knowledge of Miragen and its Subsidiaries, does not infringe or misappropriate any Intellectual Property right of any other party. Miragen has disclosed in correspondence to Signal the third-party patents and patent applications found during all freedom to operate searches that were conducted by Miragen or its Subsidiaries related to any product or technology currently licensed or sold or under development by Miragen or its Subsidiaries. To the Knowledge of Miragen and its Subsidiaries, no third party is infringing upon or misappropriating, or violating any license or agreement with Miragen or its Subsidiaries relating to, any Miragen IP Rights. There is no current or, to the Knowledge of Miragen, pending challenge, claim or Legal Proceeding (including opposition, interference or other proceeding in any patent or other government office) contesting the validity, enforceability, ownership or right to use, sell, license or dispose of any Miragen IP Rights, nor has Miragen or any of its Subsidiaries received any written notice asserting that the manufacture, marketing, license, sale or intended use of any product or service currently approved or sold or under preclinical or clinical development by Miragen or any of its Subsidiaries conflicts with or infringes or misappropriates or will conflict with or infringe or misappropriate the rights of any other Person.

(g) Each item of Miragen IP Rights that is Miragen Registered IP is and at all times has been filed and maintained in compliance with all applicable Legal Requirements and all filings, payments and other actions required to be made or taken to maintain such item of Miragen Registered IP in full force and effect have been made by the applicable deadline, except for any failure to perform any of the foregoing, individually or collectively, that would not constitute an Miragen Material Adverse Effect.

(h) No trademark (whether registered or unregistered) or trade name owned, used, or applied for by Miragen or any of its Subsidiaries conflicts or interferes with any trademark (whether registered or unregistered) or trade name owned, used, or applied for by any other Person. None of the goodwill associated with or inherent in any trademark (whether registered or unregistered) in which Miragen or any of its Subsidiaries has or purports to have an ownership interest has been impaired as determined by Miragen or any of its Subsidiaries in accordance with GAAP.

2.10 Material Contracts.

(a) Section 2.10(a) of the Miragen Disclosure Schedule lists the following Miragen Contracts, effective as of the date of this Agreement (each, an ***Miragen Material Contract*** and collectively, the ***Miragen Material Contracts***):

(i) each Miragen Contract relating to any material bonus, deferred compensation, severance, incentive compensation, pension, profit-sharing or retirement plans, or any other employee benefit plans or arrangements;

(ii) each Miragen Contract requiring payments by Miragen after the date of this Agreement in excess of $150,000 pursuant to its express terms relating to the employment of, or the performance of employment-related services by, any Person, including any employee, consultant or independent contractor, or entity providing employment related, consulting or independent contractor services, not terminable by Miragen or its Subsidiaries on 90 calendar days or less notice without liability, except to the extent general principles of wrongful termination law may limit Miragen s, Miragen s Subsidiaries or such successor s ability to terminate employees at will;

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(iii) each Miragen Contract relating to any agreement or plan, including any stock option plan, stock appreciation right plan or stock purchase plan, any of the benefits of which will be increased, or the vesting of benefits of which will be accelerated, by the occurrence of any of the Contemplated Transactions (either alone or in conjunction with any other event, such as termination of employment), or the value of any of the benefits of which will be calculated on the basis of any of the Contemplated Transactions;

(iv) each Miragen Contract relating to any agreement of indemnification or guaranty not entered into in the Ordinary Course of Business;

(v) each Miragen Contract containing (A) any covenant limiting the freedom of Miragen, its Subsidiaries or the Surviving Corporation to engage in any line of business or compete with any Person, (B) any most-favored pricing arrangement, (C) any exclusivity provision, or (D) any non-solicitation provision;

(vi) each Miragen Contract relating to capital expenditures and requiring payments after the date of this Agreement in excess of $250,000 pursuant to its express terms and not cancelable without penalty;

(vii) each Miragen Contract relating to the disposition or acquisition of material assets or any ownership interest in any Entity;

(viii) each Miragen Contract relating to any mortgages, indentures, loans, notes or credit agreements, security agreements or other agreements or instruments relating to the borrowing of money or extension of credit in excess of $250,000 or creating any material Encumbrances with respect to any assets of Miragen or any Miragen Subsidiary or any loans or debt obligations with officers or directors of Miragen;

(ix) each Miragen Contract requiring payment by or to Miragen after the date of this Agreement in excess of $250,000 pursuant to its express terms relating to: (A) any distribution agreement (identifying any that contain exclusivity provisions); (B) any agreement involving provision of services or products with respect to any pre-clinical or clinical development activities of Miragen; (C) any dealer, distributor, joint marketing, alliance, joint venture, cooperation, development or other agreement currently in force under which Miragen has continuing obligations to develop or market any product, technology or service, or any agreement pursuant to which Miragen has continuing obligations to develop any Intellectual Property that will not be owned, in whole or in part, by Miragen; or (D) any Contract to license any third party to manufacture or produce any product, service or technology of Miragen or any Contract to sell, distribute or commercialize any products or service of Miragen, in each case, except for Miragen Contracts entered into in the Ordinary Course of Business;

(x) each Miragen Contract with any Person, including any financial advisor, broker, finder, investment banker or other Person, providing advisory services to Miragen in connection with the Contemplated Transactions;

(xi) each Miragen IP Rights Agreement other than those that are immaterial;

(xii) each Miragen Lease; or

(xiii) any other Miragen Contract that is not terminable at will (with no penalty or payment) by Miragen and (A) which involves payment or receipt by Miragen or its Subsidiaries after the date of this Agreement under any such agreement, contract or commitment of more than $250,000 in the aggregate, or obligations after the date of this Agreement in excess of $250,000 in the aggregate, or (B) that is material to the business or operations of Miragen and its Subsidiaries.

(b) Miragen has delivered or made available to Signal accurate and complete (except for applicable redactions thereto) copies of all Miragen Material Contracts, including all amendments thereto. There are no Miragen Material Contracts that are not in written form. Neither Miragen nor any of its Subsidiaries has, nor to

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Miragen s Knowledge, as of the date of this Agreement has any other party to an Miragen Material Contract, breached, violated or defaulted under, or received notice that it has breached, violated or defaulted under, any of the terms or conditions of any Miragen Material Contract in such manner as would permit any other party to cancel or terminate any such Miragen Material Contract, or would permit any other party to seek damages that constitutes an Miragen Material Adverse Effect. As to Miragen and its Subsidiaries, as of the date of this Agreement, each Miragen Material Contract is valid, binding, enforceable and in full force and effect, subject to: (i) laws of general application relating to bankruptcy, insolvency and the relief of debtors; and (ii) rules of law governing specific performance, injunctive relief and other equitable remedies.

2.11 Undisclosed Liabilities. As of the date of this Agreement, neither Miragen nor any Miragen Subsidiary has any liability, indebtedness, obligation, expense, claim, deficiency, guaranty or endorsement of any kind, whether accrued, absolute, contingent, matured, or unmatured (whether or not required to be reflected in the financial statements in accordance with GAAP) (each a ***Liability***), except for: (a) Liabilities identified as such in the liabilities column of the Miragen Unaudited Interim Balance Sheet; (b) normal and recurring current Liabilities that have been incurred by Miragen or its Subsidiaries since the date of the Miragen Unaudited Interim Balance Sheet in the Ordinary Course of Business and that are not in excess of $250,000 in the aggregate; (c) Liabilities for performance in the Ordinary Course of Business of obligations of Miragen or any Miragen Subsidiary under Miragen Contracts, including the reasonably expected performance of such Miragen Contracts in accordance with their terms (which would not include, for example, any instances of breach or indemnification); (d) Liabilities incurred in connection with the Contemplated Transactions; and (f) Liabilities listed in Section 2.11 of the Miragen Disclosure Schedule.

2.12 Compliance; Permits; Restrictions.

(a) Miragen and each Miragen Subsidiary are, and since January 1, 2011 have been, in compliance with all applicable Legal Requirements except for any non-compliance that would not constitute an Miragen Material Adverse Effect. No investigation, claim, suit, proceeding, audit or other action by any Governmental Body or authority is pending or, to the Knowledge of Miragen, threatened against Miragen or any Miragen Subsidiary. There is no Contract, judgment, injunction, order or decree binding upon Miragen or any Miragen Subsidiary which (i) has or would reasonably be expected to have the effect of prohibiting or materially impairing any business practice of Miragen or any Miragen Subsidiary, any acquisition of material property by Miragen or any Miragen Subsidiary or the conduct of business by Miragen or any Miragen Subsidiary as currently conducted, (ii) would reasonably be expected to have an adverse effect on Miragen s ability to comply with or perform any covenant or obligation under this Agreement, or (iii) would reasonably be expected to have the effect of preventing, delaying, making illegal or otherwise interfering with the Merger or any of the Contemplated Transactions.

(b) Miragen and the Miragen Subsidiaries hold all required Governmental Authorizations which are material to the operation of the business of Miragen (the ***Miragen Permits***) as currently conducted. Section 2.12(b) of the Miragen Disclosure Schedule identifies each Miragen Permit. As of the date of this Agreement, each of Miragen and each Miragen Subsidiary is in material compliance with the terms of the Miragen Permits. No action, proceeding, revocation proceeding, amendment procedure, writ, injunction or claim is pending or, to the Knowledge of Miragen, threatened, which seeks to revoke, limit, suspend, or materially modify any Miragen Permit. The rights and benefits of each material Miragen Permit will be available to the Surviving Corporation immediately after the Effective Time on terms substantially identical to those enjoyed by Miragen and its Subsidiaries immediately prior to the Effective Time.

(c) There are no proceedings pending or, to the Knowledge of Miragen, threatened with respect to an alleged violation by Miragen or any of its Subsidiaries of the Federal Food, Drug, and Cosmetic Act (***FDCA***), Food and Drug Administration (***FDA***) regulations adopted thereunder, the Controlled Substances Act or any other similar Legal Requirements promulgated by the FDA or other comparable Governmental Body responsible for regulation of the

development, clinical testing, manufacturing, sale, marketing, distribution and importation or exportation of drug products (***Drug Regulatory Agency***).

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(d) Miragen and each of its Subsidiaries holds all required Governmental Authorizations issuable by any Drug Regulatory Agency necessary for the conduct of the business of Miragen or such Subsidiary as currently conducted, and development, clinical testing, manufacturing, marketing, distribution and importation or exportation, as currently conducted, of any of its products or product candidates (the ***Miragen Product Candidates***) (collectively, the ***Miragen Regulatory Permits***), and no such Miragen Regulatory Permit has been (i) revoked, withdrawn, suspended, canceled or terminated or (ii) modified in any adverse manner, other than immaterial adverse modifications. Miragen and each Miragen Subsidiary is in compliance in all material respects with the Miragen Regulatory Permits and has not received any written notice or other written communication from any Drug Regulatory Agency regarding (A) any material violation of or failure to comply materially with any term or requirement of any Miragen Regulatory Permit or (B) any revocation, withdrawal, suspension, cancelation, termination or material modification of any Miragen Regulatory Permit. Miragen has made available to Signal all information requested by Signal in Miragen s or its Subsidiaries possession or control relating to the Miragen Product Candidates and the development, clinical testing, manufacturing, importation and exportation of the Miragen Product Candidates, including complete copies of the following (to the extent there are any): adverse event reports; clinical study reports and material study data; inspection reports, notices of adverse findings, warning letters, filings and letters and other written correspondence to and from any Drug Regulatory Agency; and meeting minutes with any Drug Regulatory Agency.

(e) All clinical, pre-clinical and other studies and tests conducted by or on behalf of, or sponsored by, Miragen or its Subsidiaries or in which Miragen or its Subsidiaries or their respective current products or product candidates, including the Miragen Product Candidates, have participated were, and if still pending are being, conducted in all material respects in accordance with standard medical and scientific research procedures and in compliance with the applicable regulations of the Drug Regulatory Agencies and other applicable Legal Requirements, including 21 C.F.R. Parts 50, 54, 56, 58 and 312. Since January 1, 2011, neither Miragen nor any of its Subsidiaries has received any notices, correspondence or other communications from any Drug Regulatory Agency requiring, or to the Knowledge of Miragen threatening to initiate, the termination or suspension of any clinical studies conducted by or on behalf of, or sponsored by, Miragen or any of its Subsidiaries or in which Miragen or any of its Subsidiaries or their respective current products or product candidates, including the Miragen Product Candidates, have participated.

(f) Neither Miragen nor any of the Miragen Subsidiaries is the subject of any pending, or to the Knowledge of Miragen or the Miragen Subsidiaries, threatened investigation in respect of its business or products by the FDA pursuant to its Fraud, Untrue Statements of Material Facts, Bribery, and Illegal Gratuities Final Policy set forth in 56 Fed. Reg. 46191 (September 10, 1991) and any amendments thereto. To the Knowledge of Miragen or any of the Miragen Subsidiaries, neither Miragen nor any of the Miragen Subsidiaries has committed any acts, made any statement, or failed to make any statement, in each case in respect of its business or Miragen Product Candidates that would violate the FDA s Fraud, Untrue Statements of Material Facts, Bribery, and Illegal Gratuities Final Policy, and any amendments thereto. None of Miragen, any of its Subsidiaries or to the Knowledge of Miragen, any of their respective officers, employees or agents has been convicted of any crime or engaged in any conduct that would reasonably be expected to result in a debarment or exclusion (i) under 21 U.S.C. Section 335a or (ii) any similar applicable Legal Requirement. To the Knowledge of Miragen, no debarment or exclusionary claims, actions, proceedings or investigations in respect of their business or products are pending or threatened against Miragen, any Miragen Subsidiary or any of their respective officers, employees or agents.

2.13 Tax Matters.

(a) Miragen and each Miragen Subsidiary have timely filed all federal income Tax Returns and other material Tax Returns that they were required to file under applicable Legal Requirements. All such Tax Returns were correct and complete in all material respects and have been prepared in material compliance with all applicable Legal Requirements. Neither Miragen nor any Miragen Subsidiary is currently the beneficiary of any extension of time

within which to file any Tax Return. No claim has ever been made by an authority in a jurisdiction where Miragen or any Miragen Subsidiary does not file Tax Returns that it is subject to taxation by that jurisdiction.

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(b) All material Taxes due and owing by Miragen or any Miragen Subsidiary on or before the date hereof (whether or not shown on any Tax Return) have been paid. The unpaid Taxes of Miragen and any Miragen Subsidiary have been reserved for on the Miragen Unaudited Interim Balance Sheet in accordance with GAAP. Since the date of the Miragen Unaudited Interim Balance Sheet, neither Miragen nor any Miragen Subsidiary has incurred any Liability for Taxes outside the Ordinary Course of Business or otherwise inconsistent with past custom and practice.

(c) Miragen and each Miragen Subsidiary have withheld and paid all Taxes required to have been withheld and paid in connection with any amounts paid or owing to any employee, independent contractor, creditor, stockholder or other third party.

(d) There are no Encumbrances for Taxes (other than Taxes not yet due and payable or Taxes that are being contested in good faith and for which adequate reserves have been made on Miragen s Unaudited Interim Balance Sheet) upon any of the assets of Miragen or any Miragen Subsidiary.

(e) No material deficiencies for Taxes with respect to Miragen or any Miragen Subsidiary have been claimed, proposed or assessed by any Governmental Body in writing. There are no pending (or, based on written notice, threatened) audits, assessments or other actions for or relating to any liability in respect of Taxes of Miragen or any Miragen Subsidiary. No issues relating to Taxes of Miragen or any Miragen Subsidiary were raised by the relevant Tax authority in any completed audit or examination that would reasonably be expected to result in a material amount of Taxes in a later taxable period. Miragen has delivered or made available to Signal complete and accurate copies of all federal income Tax and all other material Tax Returns of Miragen and each Miragen Subsidiary (and predecessors of each) for all taxable years remaining open under the applicable statute of limitations, and complete and accurate copies of all examination reports and statements of deficiencies assessed against or agreed to by Miragen and each Miragen Subsidiary (and predecessors of each), with respect to federal income Tax and all other material Taxes. Neither Miragen nor any Miragen Subsidiary (or any of their predecessors) has waived any statute of limitations in respect of Taxes or agreed to any extension of time with respect to a Tax assessment or deficiency, nor has any request been made in writing for any such extension or waiver.

(f) All material elections with respect to Taxes affecting Miragen or any Miragen Subsidiary as of the date hereof are set forth on Schedule 2.13(f). Neither Miragen nor any Miragen Subsidiary (i) has consented at any time under former Section 341(f)(1) of the Code to have the provisions of former Section 341(f)(2) of the Code apply to any disposition of the assets of Miragen or any Miragen Subsidiary; (ii) has agreed, or is required, to make any adjustment under Section 481(a) of the Code by reason of a change in accounting method or otherwise; (iii) has made an election, or is required, to treat any of its assets as owned by another Person for Tax purposes or as a tax-exempt bond financed property or tax-exempt use property within the meaning of Section 168 of the Code; (iv) has acquired or owns any assets that directly or indirectly secure any debt the interest on which is tax exempt under Section 103(a) of the Code; (v) has made or will make a consent dividend election under Section 565 of the Code; (vi) has elected at any time to be treated as an S corporation within the meaning of Sections 1361 or 1362 of the Code; or (vii) has made any of the foregoing elections or is required to apply any of the foregoing rules under any comparable provision of state, local or foreign law.

(g) Neither Miragen nor any Miragen Subsidiary has been a United States real property holding corporation within the meaning of Section 897(c)(2) of the Code during the applicable period specified in Section 897(c)(1)(A)(ii) of the Code.

(h) Neither Miragen nor any Miragen Subsidiary is a party to any Tax allocation, Tax sharing or similar agreement (including indemnity arrangements), other than commercial contracts entered into in the Ordinary Course of Business with vendors, customers and landlords.

(i) Neither Miragen nor any Miragen Subsidiary has ever been a member of an affiliated group filing a consolidated, combined or unitary Tax Return (other than a group the common parent of which is Miragen) for

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federal, state, local or foreign Tax purposes. Neither Miragen nor any Miragen Subsidiary has any Liability for the Taxes of any Person (other than Miragen and any Miragen Subsidiary) under Treasury Regulations Section 1.1502-6 (or any similar provision of state, local, or foreign law), as a transferee or successor, by Contract, or otherwise.

(j) Neither Miragen nor any Miragen Subsidiary has distributed stock of another Person, or has had its stock distributed by another Person, in a transaction that was purported or intended to be governed in whole or in part by Section 355 of the Code or Section 361 of the Code.

(k) Neither Miragen nor any Miragen Subsidiary will be required to include any item of income in, or exclude any item of deduction from, taxable income for any period (or any portion thereof) ending after the Closing Date as a result of any (i) installment sale or other open transaction disposition made on or prior to the Closing Date, or (ii) agreement with any Tax authority (including any closing agreement described in Section 7121 of the Code or any similar provision of state, local or foreign law) made or entered into on or prior to the Closing Date.

(l) Neither Miragen nor any Miragen Subsidiary is a partner for Tax purposes with respect to any joint venture, partnership, or, to the Knowledge of Miragen, other arrangement or contract which is treated as a partnership for Tax purposes.

(m) Neither Miragen nor any Miragen Subsidiary has entered into any transaction identified as a listed transaction for purposes of Treasury Regulations Sections 1.6011-4(b)(2) or 301.6111-2(b)(2).

(n) Neither Miragen nor any Miragen Subsidiary has taken any action, or has any knowledge of any fact or circumstance, that would reasonably be expected to prevent the Contemplated Transactions from qualifying as a reorganization within the meaning of Section 368(a) of the Code.

2.14 Employee and Labor Matters; Benefit Plans.

(a) The employment of each of the Miragen and Miragen Subsidiary employees is terminable by Miragen or the applicable Miragen Subsidiary at will (or otherwise in accordance with general principles of wrongful termination law).

(b) Neither Miragen nor any Miragen Subsidiary is a party to or bound by, nor has a duty to bargain under, any collective bargaining agreement or other Contract with a labor organization representing any of its employees, and there are no labor organizations representing, purporting to represent or, to the Knowledge of Miragen, seeking to represent any employees of Miragen or any Miragen Subsidiary.

(c) There has never been, nor, to the Knowledge of Miragen has there been any threat of, any strike, slowdown, work stoppage, lockout, job action, union organizing activity or any similar activity or dispute, affecting Miragen or any Miragen Subsidiary.

(d) Neither Miragen nor any Miragen Subsidiary is or has been engaged in any unfair labor practice within the meaning of the National Labor Relations Act. There is no Legal Proceeding, claim, labor dispute or grievance pending or, to the Knowledge of Miragen, threatened or reasonably anticipated relating to any employment contract, privacy right, labor dispute, wages and hours, leave of absence, plant closing notification, workers compensation policy, long-term disability policy, harassment, retaliation, immigration, employment statute or regulation, safety or discrimination matter involving any Miragen Associate, including charges of unfair labor practices or discrimination complaints.

(e) Section 2.14(e) of the Miragen Disclosure Schedule lists, as of the date of this Agreement, all written and describes all non-written employee benefit plans (as defined in Section 3(3) of ERISA) and all bonus,

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equity-based, retention, incentive, deferred compensation, retirement or supplemental retirement, profit sharing, severance, golden parachute, disability, life or accident insurance, paid time off, vacation, cafeteria, dependent care, medical care, employee assistance program, education or tuition assistance programs, fringe or employee benefit, and all other compensation, plans, programs, agreements or arrangements, including but not limited to any employment, consulting, independent contractor, severance or executive compensation agreements or arrangements (other than regular salary or wages), written or otherwise, which are currently in effect relating to any present or former employee, independent contractor or director of Miragen or any Miragen Subsidiary or any Miragen Affiliate or which is maintained by, administered or contributed to by, or required to be contributed to by, Miragen, any Miragen Subsidiary or any Miragen Affiliate, or under which Miragen or any Miragen Subsidiary or any Miragen Affiliate has any current or would reasonably be expected to incur liability after the date hereof (each, an ***Miragen Employee Plan***).

(f) With respect to Miragen Options granted pursuant to the 2008 Plan, to the Knowledge of Miragen, (i) each Miragen Option intended to qualify as an incentive stock option under Section 422 of the Code so qualifies, (ii) each grant of an Miragen Option was duly authorized no later than the date on which the grant of such Miragen Option was by its terms to be effective (the ***Grant Date***) by all necessary corporate action, including, as applicable, approval by the Miragen Board of Directors (or a duly constituted and authorized committee thereof) and any required stockholder approval by the necessary number of votes or written consents, and the award agreement governing such grant (if any) was duly executed and delivered by each party thereto, (iii) each Miragen Option grant was made in accordance with the terms of the 2008 Plan and all other applicable Legal Requirements and (iv) the per share exercise price of each Miragen Option was not less than the fair market value of a share of Miragen Common Stock on the applicable Grant Date.

(g) Each Miragen Employee Plan that is intended to be qualified under Section 401(a) of the Code has received a favorable determination or may rely on a favorable opinion letter with respect to such qualified status from the Internal Revenue Service. To the Knowledge of Miragen, nothing has occurred that would reasonably be expected to adversely affect the qualified status of any such Miragen Employee Plan or the exempt status of any related trust.

(h) Each Miragen Employee Plan has been maintained in compliance, in all material respects, with its terms and, both as to form and operation, with all applicable Legal Requirements, including the Code and ERISA. Miragen and each Miragen Affiliate has performed all obligations required to be performed by it under, is not in default under or in violation of, and has no knowledge of any default or violation by any other party to, any of the Miragen Employee Plans. Neither Miragen nor any Miragen Affiliate is subject to any Liability or penalty under Sections 4976 through 4980 of the Code or Title I of ERISA with respect to any of the Miragen Employee Plans. All contributions required to be made by Miragen or any Miragen Affiliate to any Miragen Employee Plan have been made on or before their due dates (and no further contributions will be due or will have accrued thereunder as of the Closing Date, other than contributions accrued in the ordinary course of business consistent with past practice). No suit, administrative proceeding, action or other litigation has been initiated against, or to the Knowledge of Miragen, is threatened against or with respect to any Miragen Employee Plan, including any audit or inquiry by the IRS, the United States Department of Labor or other Governmental Body.

(i) Neither Miragen nor any Miragen Subsidiary has engaged in any transaction in violation of Sections 404 or 406 of ERISA or any prohibited transaction, as defined in Section 4975(c)(1) of the Code, for which no exemption exists under Section 408 of ERISA or Section 4975(c)(2) or (d) of the Code, or has otherwise violated the provisions of Part 4 of Title I, Subtitle B of ERISA. Neither Miragen nor any Miragen Subsidiary has knowingly participated in a violation of Part 4 of Title I, Subtitle B of ERISA by any plan fiduciary of any Miragen Employee Plan subject to ERISA and neither Miragen nor any Miragen Subsidiary has been assessed any civil penalty under Section 502(l) of ERISA.

(j) No Miragen Employee Plan is subject to Title IV or Section 302 of ERISA or Section 412 of the Code, and neither Miragen nor any Miragen Subsidiary or Miragen Affiliate has ever maintained, contributed to or partially or completely withdrawn from, or incurred any obligation or liability with respect to, any such

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plan. No Miragen Employee Plan is a Multiemployer Plan, and neither Miragen nor any Miragen Subsidiary or Miragen Affiliate has ever contributed to or had an obligation to contribute, or incurred any liability in respect of a contribution, to any Multiemployer Plan.

(k) No Miragen Employee Plan provides for medical or death benefits beyond termination of service or retirement, other than (i) pursuant to COBRA or an analogous state law requirement or (ii) death or retirement benefits under an Miragen Employee Plan qualified under Section 401(a) of the Code. Neither Miragen nor any Miragen Subsidiary sponsors or maintains any self-funded employee benefit plan. No Miragen Employee Plan is subject to any Legal Requirement of a foreign jurisdiction outside of the United States.

(l) Neither Miragen nor any Miragen Subsidiary is a party to any Contract that has resulted or would reasonably be expected to result, separately or in the aggregate, in the payment of (i) any excess parachute payment within the meaning of section 280G of the Code as a result of the Contemplated Transactions and (ii) any amount the deduction for which would be disallowed under Section 162(m) of the Code.

(m) To the Knowledge of Miragen, no payment pursuant to any Miragen Employee Plan or other arrangement to any service provider (as such term is defined in Section 409A of the Code and the United States Treasury Regulations and IRS guidance thereunder) from Miragen, including the grant, vesting or exercise of any stock option, would subject any Person to tax pursuant to Section 409A(1) of the Code, whether pursuant to the Contemplated Transactions or otherwise.

(n) No Miragen Option, stock appreciation rights or other equity-based awards issue or granted by Miragen are subject to the requirements of Code Section 409A. Each nonqualified deferred compensation plan (as such term is defined under Section 409A(d)(1) of the Code and guidance thereunder) maintained by or under which Miragen makes, is obligated to make or promises to make, payments (each a ***Miragen 409A Plan***) complies in all material respects, in both form and operation, with the requirements of Code Section 409A and the guidance thereunder. No payment to be made under any Miragen 409A Plan is, or to the Knowledge of Miragen will be, subject to the penalties of Code Section 409A(a)(1).

(o) Miragen and each of its Subsidiaries has complied in all material respects with all state and federal laws applicable to employees, including but not limited to COBRA, FMLA, CFRA, HIPAA, the Women s Health and Cancer Rights Act of 1998, the Newborn s and Mothers Health Protection Act of 1996, and any similar provisions of state law applicable to its employees. To the extent required under HIPAA and the regulations issued thereunder, Miragen and each of its Subsidiaries has, prior to the Closing Date, performed all obligations under the medical privacy rules of HIPAA (45 C.F.R. Parts 160 and 164), the electronic data interchange requirements of HIPAA (45 C.F.R. Parts 160 and 162), and the security requirements of HIPAA (45 C.F.R. Part 142). Neither Miragen nor any of its Subsidiaries has any material unsatisfied obligations to any employees or qualified beneficiaries pursuant to COBRA, HIPAA or any state law governing health care coverage or extension. Miragen and each Miragen Affiliate is in compliance in all material respects with all applicable requirements of the Patient Protection and Affordable Care Act of 2010, as amended, and all regulations thereunder (together, the ***ACA***), including all requirements relating to eligibility waiting periods and the offer of or provision of minimum essential coverage that is compliant with Section 36B(c)(2)(C) of the Code and the regulations issued thereunder to full-time employees as defined in Section 4980H(c)(4) of the Code and the regulations issued thereunder. No excise tax or penalty under the ACA, including Sections 4980D and 4980H of the Code, is outstanding, has accrued, or has arisen with respect to any period prior to the Closing, with respect to any Miragen Employee Plan. Neither Miragen nor any Miragen Affiliate has any unsatisfied obligations to any employees or qualified beneficiaries pursuant to the ACA, or any state or local Legal Requirement governing health care coverage or benefits that would reasonably be expected to result in any material liability to Miragen. Miragen and each Miragen Affiliate has maintained all records necessary to demonstrate its compliance with the ACA.

(p) Miragen and each of its Subsidiaries is in material compliance with all applicable foreign, federal, state and local laws, rules, regulations, orders, rulings, judgments, decrees or arbitration awards respecting

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employment, employment practices, terms and conditions of employment, worker classification, tax withholding, prohibited discrimination, equal employment, fair employment practices, meal and rest periods, immigration status, employee safety and health, wages (including overtime wages), compensation, hours of work, labor relations, leave of absence requirements, occupational health and safety, privacy, harassment, retaliation, immigration and wrongful discharge and in each case, with respect to employees: (i) has withheld and reported all amounts required by law or by agreement to be withheld and reported with respect to wages, salaries and other payments to employees, (ii) is not liable for any arrears of wages, severance pay or any Taxes or any penalty of any material amount for failure to comply with any of the foregoing, and (iii) is not liable for any payment to any trust or other fund governed by or maintained by or on behalf of any Governmental Body, with respect to unemployment compensation benefits, social security or other benefits or obligations for employees (other than routine payments to be made in the normal course of business and consistent with past practice). There are no actions, suits, claims or administrative matters pending, or to the Knowledge of Miragen, threatened or reasonably anticipated against Miragen or any of its Subsidiaries relating to any employee, employment agreement, independent contractor, independent contractor agreement or Miragen Employee Plan. There are no pending or, to the Knowledge of Miragen, threatened or reasonably anticipated claims or actions against Miragen, any of its Subsidiaries, any Miragen trustee or any trustee of any Subsidiary under any worker s compensation policy or long-term disability policy. Neither Miragen nor any Subsidiary thereof is party to a conciliation agreement, consent decree or other agreement or order with any federal, state or local agency or governmental authority with respect to employment practices.

(q) No current or former independent contractor of Miragen or any of its Subsidiaries would reasonably be deemed to be a misclassified employee. Neither Miragen nor any of its Subsidiaries has any material liability with respect to any misclassification of: (A) any Person as an independent contractor rather than as an employee, (B) any employee leased from another employer or (C) any employee currently or formerly classified as exempt from overtime wages. Neither Miragen nor any Subsidiary has taken any action which would constitute a plant closing or mass layoff within the meaning of the WARN Act or similar state or local law, issued any notification of a plant closing or mass layoff required by the WARN Act or similar state or local law, or incurred any liability or obligation under WARN or any similar state or local law that remains unsatisfied. No terminations of employees of Miragen or any of its Subsidiaries prior to the Closing would trigger any notice or other obligations under the WARN Act or similar state or local law.

(r) Except as set forth in Section 2.14(r) of the Miragen Disclosure Schedule, none of the execution and delivery of this Agreement, or the consummation of the Contemplated Transactions or any termination of employment or service or any other event in connection therewith or subsequent thereto will, individually or together or with the occurrence of some other event, (i) result in any payment (including severance, unemployment compensation, golden parachute, bonus or otherwise) becoming due to any employee, independent contractor or director of Miragen, (ii) materially increase or otherwise enhance any benefits otherwise payable by Miragen, (iii) result in the acceleration of the time of payment or vesting of any such benefits, except as required under Section 411(d)(3) of the Code, (iv) increase the amount of compensation due to any Person by Miragen or (v) result in the forgiveness in whole or in part of any outstanding loans made by Miragen to any Person.

(s) With respect to each Miragen Employee Plan, Miragen has made available to Signal a true and complete copy of, to the extent applicable, (i) such Miragen Employee Plan, (ii) the three most recent annual reports (Form 5500) as filed with the Internal Revenue Service, (iii) each currently effective trust agreement related to such Miragen Employee Plan, (iv) the most recent summary plan description for each Miragen Employee Plan for which such description is required, along with all summaries of material modifications, amendments, resolutions and all other material plan documentation related thereto in the possession of Miragen, and (v) the most recent Internal Revenue Service determination or opinion letter or analogous ruling under foreign law issued with respect to any Miragen Employee Plan.

2.15 Environmental Matters. Miragen and each Miragen Subsidiary is in material compliance with all applicable Environmental Laws, which compliance includes the possession by Miragen of all permits and other

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Governmental Authorizations required under applicable Environmental Laws and compliance with the terms and conditions thereof other than any failure to be in compliance or possess any such permits and authorized that is not an Miragen Material Adverse Effect. Neither Miragen nor any of its Subsidiaries has received since January 1, 2011 any written notice or other communication (in writing or otherwise), whether from a Governmental Body, citizens group, employee or otherwise, that alleges that Miragen is not in compliance with any Environmental Law, and, to the Knowledge of Miragen, there are no circumstances that may prevent or interfere with Miragen s compliance with any Environmental Law in the future. To the Knowledge of Miragen: (i) no current or prior owner of any property leased or controlled by Miragen or any of its Subsidiaries has received since January 1, 2011 any written notice or other communication relating to property owned or leased at any time by Miragen or any of its Subsidiaries, whether from a Governmental Body, citizens group, employee or otherwise, that alleges that such current or prior owner or Miragen or any of its Subsidiaries is not in compliance with or has violated any Environmental Law relating to such property and (ii) neither it nor any of its Subsidiaries has any material liability under any Environmental Law.

2.16 Insurance.

(a) Miragen has delivered or made available to Signal accurate and complete copies of all material insurance policies and all material self-insurance programs and arrangements relating to the business, assets, liabilities and operations of Miragen and each Miragen Subsidiary, as of the date of this Agreement. Each of such insurance policies is in full force and effect and Miragen and each Miragen Subsidiary are in compliance with the terms thereof. As of the date of this Agreement, other than customary end of policy notifications from insurance carriers, since January 1, 2011, neither Miragen nor any Miragen Subsidiary has received any notice or other communication regarding any actual or possible: (a) cancelation or invalidation of any insurance policy; (b) refusal or denial of any coverage, reservation of rights or rejection of any material claim under any insurance policy; or (c) material adjustment in the amount of the premiums payable with respect to any insurance policy. There is no pending workers compensation or other claim under or based upon any insurance policy of Miragen or any Miragen Subsidiary. Information provided to insurance carriers (in applications and otherwise) on behalf of Miragen and each Miragen Subsidiary is accurate and complete. Miragen and each Miragen Subsidiary have provided timely written notice to the appropriate insurance carrier(s) of each Legal Proceeding pending or threatened against Miragen or any Miragen Subsidiary, and no such carrier has issued a denial of coverage or a reservation of rights with respect to any such Legal Proceeding, or informed Miragen or any Miragen Subsidiary of its intent to do so.

(b) Miragen has delivered to Signal accurate and complete copies of the existing policies (primary and excess) of directors and officers liability insurance maintained by Miragen and each Miragen Subsidiary as of the date of this Agreement (the ***Existing Miragen D&O Policies***). Section 2.16(b) of the Miragen Disclosure Schedule accurately sets forth, as of the date of this Agreement, the most recent annual premiums paid by Miragen and each Miragen Subsidiary with respect to the Existing Miragen D&O Policies. All premiums for the Existing Miragen D&O Policies have been paid as of the date hereof.

2.17 Legal Proceedings; Orders.

(a) There is no pending Legal Proceeding, and, to the Knowledge of Miragen, no Person has threatened in writing to commence any Legal Proceeding: (i) that involves Miragen or any of its Subsidiaries, or to the Knowledge of Miragen, any director or officer of Miragen (in his or her capacity as such) or any of the material assets owned or used by Miragen or its Subsidiaries; or (ii) that challenges, or that would reasonably be expected to have the effect of preventing, delaying, making illegal or otherwise interfering with, the Contemplated Transactions, in each case, except for any Legal Proceedings that would not constitute an Miragen Material Adverse Effect. To the Knowledge of Miragen, no event has occurred, and no claim, dispute or other condition or circumstance exists, that will, or that would reasonably be expected to, give rise to or serve as a basis for the commencement of any such Legal Proceeding.

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(b) There is no order, writ, injunction, judgment or decree to which Miragen or any Miragen Subsidiary, or any of the material assets owned or used by Miragen or any Miragen Subsidiary, is subject. To the Knowledge of Miragen, no officer of Miragen or any Miragen Subsidiary is subject to any order, writ, injunction, judgment or decree that prohibits such officer of Miragen from engaging in or continuing any conduct, activity or practice relating to the business of Miragen or any Miragen Subsidiary or to any material assets owned or used by Miragen or any Miragen Subsidiary.

2.18 Inapplicability of Anti-takeover Statutes. The Miragen Board of Directors has taken and will take all actions necessary to ensure that the restrictions applicable to business combinations contained in Section 203 of the DGCL are, and will be, inapplicable to the execution, delivery and performance of this Agreement and the Miragen Stockholder Support Agreements and to the consummation of the Contemplated Transactions. No other state takeover statute or similar Legal Requirement applies or purports to apply to the Merger, this Agreement, the Miragen Stockholder Support Agreements or any of the other Contemplated Transactions.

2.19 No Financial Advisor. No broker, finder or investment banker is entitled to any brokerage fee, finder s fee, opinion fee, success fee, transaction fee or other fee or commission in connection with the Contemplated Transactions based upon arrangements made by or on behalf of Miragen or any of its Subsidiaries.

2.20 Subscription Agreement. The Subscription Agreement has not been amended or modified in any manner prior to the date of this Agreement. Neither Miragen nor, to the Knowledge of Miragen, any of its Affiliates has entered into any agreement, side letter or other arrangement relating to the Miragen Pre-Closing Financing, or the transactions contemplated by the Subscription Agreement, other than as set forth in the Subscription Agreement. As of the date of this Agreement, the respective obligations and agreements contained in the Subscription Agreement have not been withdrawn or rescinded in any respect. The Subscription Agreement is in full force and effect and represents a valid, binding and enforceable obligation of Miragen and, to the Knowledge of Miragen, of each other party thereto, subject to the qualification that such enforceability may be limited by bankruptcy, insolvency, reorganization or other laws of general application relating to or affecting rights of creditors. As of the date of this Agreement, no event has occurred which, with or without notice, lapse of time or both, would constitute a breach or default on the part of Miragen or, to the Knowledge of Miragen, any other party thereto, under the Subscription Agreement. To the Knowledge of Miragen as of the date hereof, no party thereto will be unable to satisfy on a timely basis any term of the Subscription Agreement. There are no conditions precedent related to the consummation of the Miragen Pre-Closing Financing contemplated by the Subscription Agreement, other than the satisfaction or waiver of the conditions expressly set forth in Article 5 of the Subscription Agreement. To the Knowledge of Miragen as of the date hereof, the funds from the Miragen Pre-Closing Financing will be made available to Miragen prior to the consummation of the Merger.

2.21 Disclosure. The information supplied by Miragen and each Miragen Subsidiary for inclusion in the Proxy Statement / Prospectus / Information Statement (including any Miragen Financials) will not, as of the date of the Proxy Statement / Prospectus / Information Statement or as of the date such information is first mailed to Signal Stockholders, (i) contain any untrue statement of any material fact or (ii) omit to state any material fact necessary in order to make such information, in the light of the circumstances under which such information is provided, not false or misleading.

2.22 Exclusivity of Representations; Reliance.

(a) Except as expressly set forth in this Article 2, neither Miragen nor any Person on behalf of Miragen has made, nor are any of them making, any representation or warranty, written or oral, express or implied, at law or in equity, including with respect to merchantability or fitness for any particular purpose, in respect of Miragen or its business in connection with the transactions contemplated hereby, including any representations or warranties about the accuracy

or completeness of any information or documents previously provided (including with respect to any financial or other projections therein), and any other such representations and warranties are hereby expressly disclaimed.

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(b) Miragen acknowledges and agrees that, except for the representations and warranties of Signal and Merger Sub set forth in Article 3, neither Miragen nor its Representatives is relying on any other representation or warranty of Signal, Merger Sub, or any other Person made outside of Article 3 of this Agreement, including regarding the accuracy or completeness of any such other representations or warranties or the omission of any material information, whether express or implied, in each case with respect to the Contemplated Transactions.

ARTICLE 3. REPRESENTATIONS AND WARRANTIES OF SIGNAL AND MERGER SUB

Signal and Merger Sub represent and warrant to Miragen as follows, except as set forth in the written disclosure schedule delivered by Signal to Miragen (the ***Signal Disclosure Schedule***) (it being understood that the representations and warranties in this Article 3 are qualified by: (a) any exceptions and disclosures set forth in the section or subsection of the Signal Disclosure Schedule corresponding to the particular section or subsection in this Article 3 in which such representation and warranty appears; (b) any exceptions or disclosures explicitly cross-referenced in such section or subsection of the Signal Disclosure Schedule by reference to another section or subsection of the Signal Disclosure Schedule; and (c) any exceptions or disclosures set forth in any other section or subsection of the Signal Disclosure Schedule to the extent it is reasonably apparent from the wording of such exception or disclosure that such exception or disclosure qualifies such representation and warranty). The inclusion of any information in the Signal Disclosure Schedule shall not be deemed to be an admission or acknowledgement, in and of itself, that such information is required by the terms hereof to be disclosed, is material, has resulted in or would result in a Signal Material Adverse Effect, or is outside the Ordinary Course of Business.

3.1 Subsidiaries; Due Organization; Organizational Documents.

(a) Other than Merger Sub, Signal does not have any Subsidiaries and Signal does not own any capital stock of, or any equity interest of any nature in, any other Entity. Signal has not agreed nor is obligated to make, nor is bound by any Contract under which it may become obligated to make, any future investment in or capital contribution to any other Entity. Signal has not, at any time, been a general partner of, or has otherwise been liable for any of the debts or other obligations of, any general partnership, limited partnership or other Entity.

(b) Each of Signal and Merger Sub is a corporation duly organized, validly existing and in good standing under the laws of the jurisdiction of its incorporation and has all necessary power and authority: (i) to conduct its business in the manner in which its business is currently being conducted; (ii) to own and use its assets in the manner in which its assets are currently owned and used; and (iii) to perform its obligations under all Signal Contracts.

(c) Each of Signal and Merger Sub is qualified to do business as a foreign corporation, and is in good standing, under the laws of all jurisdictions where the nature of its business requires such qualification other than in jurisdictions where the failure to be so qualified would not constitute a Signal Material Adverse Effect.

(d) Each director and officer of Signal and Merger Sub as of the date of this Agreement is set forth in Section 3.1(d) of the Signal Disclosure Schedule.

(e) Merger Sub was formed solely for the purpose of engaging in the Contemplated Transactions. Except for obligations and liabilities incurred in connection with its incorporation and the Contemplated Transactions, Merger Sub has not, and will not have, incurred, directly or indirectly, any obligations or liabilities or engaged in any business activities of any type or kind whatsoever or entered into any agreements or arrangements with any Person.

(f) Signal has delivered or made available to Miragen accurate and complete copies of (i) the certificate of incorporation, bylaws and other charter and organizational documents, including all currently effective amendments

thereto, for Signal and Merger Sub; and (ii) any code of conduct or similar policy adopted by Signal or by the Signal Board of Directors or any committee thereof.

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3.2 Authority; Vote Required.

(a) Each of Signal and Merger Sub has all necessary corporate power and authority to enter into and to perform its obligations under this Agreement. The Signal Board of Directors has: (i) determined that the Merger is fair to, and in the best interests of, Signal and Signal Stockholders; (ii) duly authorized and approved by all necessary corporate action, the execution, delivery and performance of this Agreement and the Contemplated Transactions; (iii) recommended the approval of the Signal Stockholder Matters and the Other Signal Stockholder Matters by the Signal Stockholders and directed that the Signal Stockholder Matters and the Other Signal Stockholder Matters be submitted for consideration by Signal Stockholders in connection with the solicitation of the Required Signal Stockholder Vote; and (iv) approved the Signal Stockholder Support Agreements and the transactions contemplated thereby. The board of directors of Merger Sub has (A) determined that the Merger is fair to, and in the best interests of, Merger Sub and its sole stockholder; (B) duly authorized and approved by all necessary corporate action, the execution, delivery and performance of this Agreement and the Contemplated Transactions; and (C) recommended that the sole stockholder of Merger Sub adopt this Agreement and thereby approve the Merger and the applicable Contemplated Transactions. This Agreement has been duly executed and delivered by Signal and Merger Sub and, assuming the due authorization, execution and delivery by Miragen, constitutes the legal, valid and binding obligation of Signal and Merger Sub, enforceable against Signal and Merger Sub in accordance with its terms, subject to: (1) laws of general application relating to bankruptcy, insolvency and the relief of debtors; and (2) rules of law governing specific performance, injunctive relief and other equitable remedies.

(b) (i) The affirmative vote of the holders of a majority of outstanding shares of Signal Common Stock is the only vote of the holders of any class or series of Signal Capital Stock necessary to approve the Signal Stockholder Matters (the ***Required Signal Stockholder Vote***) and the Other Signal Stockholder Matters and (ii) the affirmative vote of the sole stockholder of Merger Sub is the only vote of the holders of any class or series of Merger Sub Capital Stock necessary to adopt this Agreement and approve the Merger and the applicable Contemplated Transactions (the ***Required Merger Sub Stockholder Vote***).

3.3 Non-Contravention; Consents.

(a) The execution and delivery of this Agreement by Signal does not, and the performance of this Agreement by Signal and Merger Sub will not, (i) conflict with or violate the certificate of incorporation or bylaws of Signal or Merger Sub; (ii) subject to obtaining the Required Signal Stockholder Vote and the Required Merger Sub Stockholder Vote and compliance with the requirements set forth in Section 3.3(b) below, conflict with or violate any Legal Requirement applicable to Signal or Merger Sub or by which its or any of their respective properties is bound or affected, except for any such conflicts or violations that would not constitute a Signal Material Adverse Effect; or (iii) require Signal or Merger Sub to make any filing with or give any notice to a Person or make any payment, or obtain any Consent from a Person, or result in any breach of or constitute a default (or an event that with notice or lapse of time or both would become a default) under, or impair Signal s or Merger Sub s rights or alter the rights or obligations of any third party under, or give to others any rights of termination, amendment, acceleration or cancelation of, or result in the creation of an Encumbrance on any of the properties or assets of Signal or Merger Sub pursuant to, any Signal Material Contract.

(b) No material Consent, order of, or registration, declaration or filing with any Governmental Body is required by or with respect to Signal or Merger Sub in connection with the execution and delivery of this Agreement or the consummation of the Contemplated Transactions, except for (i) the filing of the Certificate of Merger with the Secretary of State of the State of Delaware pursuant to the DGCL, (ii) any required filings under the HSR Act and any foreign antitrust Legal Requirement and (iii) such Consents, orders, registrations, declarations and filings as may be required under applicable federal and state securities laws.

3.4 Capitalization.

(a) The authorized capital stock of Signal as of the date of this Agreement consists of: (i) 50,000,000 shares of shares of common stock, par value $0.01 per share (the ***Signal Common Stock***), of which 11,123,382

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shares are issued and outstanding as of the date of this Agreement, and (ii) 5,000,000 shares of preferred stock, par value $0.01 per share, of which no shares are outstanding as of the date of this Agreement. Signal does not hold any shares of its capital stock in treasury. All of the issued and outstanding shares of Signal Common Stock have been duly authorized and validly issued, and are fully paid and nonassessable. As of the date of this Agreement, there are outstanding Signal Warrants to purchase 203,214 shares of Signal Common Stock. Section 3.4(a) of the Signal Disclosure Schedule lists, as of the date of this Agreement (A) each record holder of issued and outstanding Signal Common Stock and the number of shares of Signal Common Stock held by each such record holder and (B) (1) each holder of issued and outstanding Signal Warrants, (2) the number and type of shares subject to such Signal Warrants, (3) the exercise price of each such Signal Warrant, and (4) the termination date of each such Signal Warrant.

(b) Except for the Signal Stock Incentive Plan (the ***2014 Plan***), Signal does not have any stock option plan or any other plan, program, agreement or arrangement providing for any equity-based compensation for any Person. Signal has reserved 2,525,418 shares of Signal Common Stock for issuance under the 2014 Plan. As of the date of this Agreement, of such reserved shares of Signal Common Stock, (i) no shares have been issued pursuant to the exercise of outstanding options and options to purchase 580,941 shares have been granted and are currently outstanding, (ii) 909,343 have been issued pursuant to settlement of Signal RSUs and 18,820 shares are issuable upon settlement of currently outstanding RSUs, and (iii) 939,970 shares of Signal Common Stock remain available for future issuance pursuant to the 2014 Plan. Section 3.4(b) of the Signal Disclosure Schedule sets forth the following information (A) with respect to each Signal Option outstanding, as of the date of this Agreement: (1) the name of the optionee, (2) the number of shares of Signal Common Stock subject to such Signal Option as of the date of this Agreement, (3) the exercise price of such Signal Option, (4) the date on which such Signal Option was granted, (5) the date on which such Signal Option expires, and (6) the vesting schedule applicable to such Signal Option, including the extent vested to date and whether by its terms the vesting of such Signal Option would be accelerated by the Contemplated Transactions; and (B) with respect to each Signal RSU outstanding as of the date of this Agreement: (1) the name of the holder, (2) the vesting terms of each such Signal RSU, (3) the date on which each such Signal RSU was granted, (4) the date on which each such Signal RSU expires, and (5) the vesting schedule applicable to such Signal RSU, including the extent vested to date and whether by its terms the vesting of such Signal RSU would be accelerated by the Contemplated Transactions.

(c) Except for the outstanding Signal Warrants set forth on Section 3.4(a) of the Signal Disclosure Schedule and for the Signal Options and Signal RSUs set forth on Section 3.4(b) of the Signal Disclosure Schedule, there is no: (i) outstanding subscription, option, call, warrant or right (whether or not currently exercisable) to acquire any shares of the capital stock or other securities of Signal or Merger Sub; (ii) outstanding security, instrument or obligation that is or may become convertible into or exchangeable for any shares of the capital stock or other securities of Signal or Merger Sub; (iii) stockholder rights plan (or similar plan commonly referred to as a poison pill) or Contract under which Signal or Merger Sub is or may become obligated to sell or otherwise issue any shares of its capital stock or any other securities; or (iv) condition or circumstance that may give rise to or provide a basis for the assertion of a claim by any Person to the effect that such Person is entitled to acquire or receive any shares of capital stock or other securities of Signal or Merger Sub. There are no outstanding or authorized stock appreciation, phantom stock, profit participation, restricted stock units, equity-based awards or other similar rights with respect to Signal or Merger Sub.

(d) Except as set forth in Section 3.4(d) of the Signal Disclosure Schedule, (i) none of the outstanding shares of Signal Capital Stock or Merger Sub Capital Stock are entitled or subject to any preemptive right, right of repurchase or forfeiture, right of participation, right of maintenance or any similar right; (ii) none of the outstanding shares of Signal Capital Stock or Merger Sub Capital Stock are subject to any right of first refusal in favor of Signal or Merger Sub, as applicable; (iii) there are no outstanding bonds, debentures, notes or other indebtedness of Signal or Merger Sub having a right to vote on any matters on which the Signal Stockholders or the sole stockholder of Merger Sub, as applicable, have a right to vote; (iv) there is no Signal Contract to which Signal or Merger Sub are a party relating to

the voting or registration of, or restricting any Person from

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purchasing, selling, pledging or otherwise disposing of (or from granting any option or similar right with respect to), any shares of Signal Capital Stock or Merger Sub Capital Stock. Neither Signal nor Merger Sub is under any obligation, nor is bound by any Contract pursuant to which it may become obligated, to repurchase, redeem or otherwise acquire any outstanding shares of Signal Capital Stock, Merger Sub Capital Stock or other securities.

(e) The authorized capital of Merger Sub consists of 1,000 shares of common stock, par value $0.001 per share (***Merger Sub Capital Stock***), all of which are, and at the Effective Time will be, issued and outstanding and held of record by Signal. The issued and outstanding shares of Merger Sub Capital Stock are duly authorized, validly issued, fully paid and nonassessable. Merger Sub has not at any time granted any stock options, restricted stock, phantom stock, profit participation, restricted stock units, equity-based awards or other similar rights.

(f) All outstanding shares of Signal Capital Stock and Merger Sub Capital Stock, as well as all Signal Options, all Signal RSUs and all Signal Warrants, have been issued and granted, as applicable, in material compliance with all applicable securities laws and other applicable Legal Requirements.

3.5 SEC Filings; Financial Statements.

(a) Signal has made available to Miragen accurate and complete copies of all registration statements, proxy statements, Certifications (as defined below) and other statements, reports, schedules, forms and other documents filed by Signal with the SEC since January 1, 2014 (the ***Signal SEC Documents***), other than such documents that can be obtained on the SEC s website at www.sec.gov. All statements, reports, schedules, forms and other documents required to have been filed by Signal or its officers with the SEC have been so filed on a timely basis. As of the time it was filed with the SEC (or, if amended or superseded by a filing prior to the date of this Agreement, then on the date of such filing), each of the Signal SEC Documents complied in all material respects with the applicable requirements of the Securities Act or the Exchange Act (as the case may be) and, as of the time they were filed, none of the Signal SEC Documents contained any untrue statement of a material fact or omitted to state a material fact required to be stated therein or necessary in order to make the statements therein, in the light of the circumstances under which they were made, not misleading. The certifications and statements required by (A) Rule 13a-14 under the Exchange Act and (B) 18 U.S.C. §1350 (Section 906 of the Sarbanes-Oxley Act) relating to the Signal SEC Documents (collectively, the ***Certifications***) are accurate and complete and comply as to form and content with all applicable Legal Requirements. As used in this Article 3, the term file and variations thereof shall be broadly construed to include any manner in which a document or information is furnished, supplied or otherwise made available to the SEC.

(b) The financial statements (including any related notes) contained or incorporated by reference in the Signal SEC Documents: (i) complied as to form in all material respects with the published rules and regulations of the SEC applicable thereto; (ii) were prepared in accordance with GAAP (except as may be indicated in the notes to such financial statements or, in the case of unaudited financial statements, as permitted by Form 10-Q of the SEC, and except that the unaudited financial statements may not contain footnotes and are subject to normal and recurring year-end adjustments that are not reasonably expected to be material in amount) applied on a consistent basis unless otherwise noted therein throughout the periods indicated; and (iii) fairly present the consolidated financial position of Signal as of the respective dates thereof and the results of operations and cash flows of Signal for the periods covered thereby. Other than as expressly disclosed in the Signal SEC Documents filed prior to the date hereof, there has been no material change in Signal s accounting methods or principles that would be required to be disclosed in Signal s financial statements in accordance with GAAP. The books of account and other financial records of Signal are true and complete in all material respects.

(c) Signal s auditor has at all times since the date of enactment of the Sarbanes-Oxley Act been: (i) a registered public accounting firm (as defined in Section 2(a)(12) of the Sarbanes-Oxley Act); (ii) to the Knowledge of Signal,

independent with respect to Signal within the meaning of Regulation S-X under the

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Exchange Act; and (iii) to the Knowledge of Signal, in compliance with subsections (g) through (l) of Section 10A of the Exchange Act and the rules and regulations promulgated by the SEC and the Public Signal Accounting Oversight Board thereunder.

(d) Except as set forth in Section 3.5(d) of the Signal Disclosure Schedule, from June 17, 2014 through the date hereof, Signal has not received any comment letter from the SEC or the staff thereof or any correspondence from NASDAQ or the staff thereof relating to the delisting or maintenance of listing of the Signal Common Stock on The NASDAQ Capital Market. Signal has not disclosed any unresolved comments in its SEC Documents.

(e) Since January 1, 2011, there have been no formal internal investigations regarding financial reporting or accounting policies and practices discussed with, reviewed by or initiated at the direction of the chief executive officer or chief financial officer of Signal, the Signal Board of Directors or any committee thereof, other than ordinary course audits or reviews of accounting policies and practices or internal controls required by the Sarbanes-Oxley Act.

(f) Signal is in compliance in all material respects with the applicable provisions of the Sarbanes-Oxley Act and the applicable listing and governance rules and regulations of The NASDAQ Capital Market.

(g) Signal maintains a system of internal control over financial reporting (as defined in Rules 13a-15(f) and 15d-15(f) of the Exchange Act) that is sufficient to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with GAAP, including policies and procedures sufficient to provide reasonable assurance (i) that Signal maintains records that in reasonable detail accurately and fairly reflect Signal s transactions and dispositions of assets, (ii) that transactions are recorded as necessary to permit preparation of financial statements in accordance with GAAP, (iii) that receipts and expenditures are made only in accordance with authorizations of management and the Signal Board of Directors, and (iv) regarding prevention or timely detection of the unauthorized acquisition, use or disposition of Signal s assets that could have a material effect on Signal s financial statements. Signal has evaluated the effectiveness of Signal s internal control over financial reporting and, to the extent required by applicable Legal Requirements, presented in any applicable Signal SEC Document that is a report on Form 10-K or Form 10-Q (or any amendment thereto) its conclusions about the effectiveness of the internal control over financial reporting as of the end of the period covered by such report or amendment based on such evaluation. Signal has disclosed to Signal s auditors and the Audit Committee of the Signal Board of Directors (and made available to Miragen a summary of the significant aspects of such disclosure) (A) all significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting that are reasonably likely to adversely affect Signal s ability to record, process, summarize and report financial information and (B) any fraud, whether or not material, that involves management or other employees who have a significant role in Signal s internal control over financial reporting. Except as disclosed in the Signal SEC Documents filed prior to the date hereof, Signal has not identified any material weaknesses in the design or operation of Signal s internal control over financial reporting. Since December 31, 2014, there have been no material changes in Signal s internal control over financial reporting.

(h) Signal s disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) of the Exchange Act) are reasonably designed to ensure that all information (both financial and non-financial) required to be disclosed by Signal in the reports that it files or submits under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the rules and forms of the SEC, and that all such information is accumulated and communicated to Signal s management as appropriate to allow timely decisions regarding required disclosure and to make the Certifications.

3.6 Absence of Changes. Except as set forth in Section 3.6 of the Signal Disclosure Schedule, between June 30, 2016 and the date of this Agreement Signal has conducted its business in the Ordinary Course of Business and there has not

been (a) any event that has had a Signal Material Adverse Effect or (b) or any action, event or occurrence that would have required consent of Miragen pursuant to Section 4.2(b) of this Agreement had such action, event or occurrence taken place after the execution and delivery of this Agreement.

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3.7 Title to Assets. Signal owns, and has good and valid title to, or, in the case of leased properties and assets, valid leasehold interests in, all tangible properties or assets and equipment used or held for use in its business or operations or purported to be owned by it, in each case, free and clear of any Encumbrances, except for: (i) any lien for current Taxes not yet due and payable or for Taxes that are being contested in good faith and for which adequate reserves have been made on the Signal Unaudited Interim Balance Sheet; (ii) minor liens that have arisen in the Ordinary Course of Business and that do not (in any case or in the aggregate) materially detract from the value of the assets subject thereto or materially impair the operations of Signal; and (iii) liens listed in Section 3.7 of the Signal Disclosure Schedule.

3.8 Real Property; Leaseholds. Signal does not currently own nor has it or any of its former Subsidiaries ever owned any real property or any interest in real property, except for the leaseholds created under the real property leases (including any amendments thereof) identified in Section 3.8 of the Signal Disclosure Schedule (the ***Signal Leases***), which are each in full force and effective, with no existing material default thereunder.

3.9 Intellectual Property.

(a) Signal owns, or has the right to use, and has the right to bring actions for the infringement of, all Signal IP Rights, except for any failure to own or have the right to use, or have the right to bring actions that would not constitute a Signal Material Adverse Effect.

(b) Section 3.9(b) of the Signal Disclosure Schedule is an accurate, true and complete listing of all Signal Registered IP.

(c) Section 3.9(c) of the Miragen Disclosure Schedule accurately identifies (i) all Signal IP Rights licensed to Signal (other than (A) any non-customized software that (1) is so licensed solely in executable or object code form pursuant to a non-exclusive, internal use software license and other Intellectual Property associated with such software and (2) is not incorporated into, or material to the development, manufacturing, or distribution of, any of Signal s products or services and (B) any Intellectual Property licensed ancillary to the purchase or use of equipment, reagents or other materials); (ii) the corresponding Signal Contracts pursuant to which such Signal IP Rights are licensed to Signal; (iii) whether the license or licenses granted to Signal are exclusive or non-exclusive; and (iv) whether any funding, facilities or personnel of any Governmental Body were used, directly or indirectly, to develop or create, in whole or in part, such Signal IP Rights.

(d) Section 3.9(d) of the Signal Disclosure Schedule accurately identifies each Signal Contract pursuant to which any Person (other than Signal) has been granted any license or option to obtain a license under, or otherwise has received or acquired any right (whether or not currently exercisable) or interest in, any Signal IP Rights. Signal is not bound by, and no Signal IP Rights are subject to, any Contract containing any covenant or other provision that in any way limits or restricts the ability of Signal to use, exploit, assert or enforce any Signal IP Rights anywhere in the world, in each case as would materially limit the business of Signal as currently conducted or planned to be conducted.

(e) Signal solely owns all right, title, and interest to and in Signal IP Rights (other than Signal IP Rights (i) exclusively or non-exclusively licensed to Signal, as identified in Section 3.9(c) of the Signal Disclosure Schedule, (ii) any non-customized software that (A) is so licensed solely in executable or object code form pursuant to a non-exclusive, internal use software license and other Intellectual Property associated with such software and (B) is not incorporated into, or material to the development, manufacturing, or distribution of, any of Signal s products or services, and (iii) any Intellectual Property licensed ancillary to the purchase or use of equipment, reagents or other materials) free and clear of any Encumbrances. Without limiting the generality of the foregoing and except as set forth in Section 3.9(e) of the Signal Disclosure Schedule:

(i) All documents and instruments necessary to register or apply for or renew registration of all Signal Registered IP have been validly executed, delivered and filed in a timely manner with the appropriate Governmental Body except for any such failure, individually or collectively, that would not have a Signal Material Adverse Effect.

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(ii) Each Person who is or was an employee or contractor of Signal and who is or was involved in the creation or development of any Signal IP Rights has signed a valid, enforceable agreement containing an assignment of such Intellectual Property to Signal and confidentiality provisions protecting trade secrets and confidential information of Signal. To the Knowledge of Signal, no current or former stockholder, officer, director, employee or contractor of Signal or any of its former Subsidiaries has any claim, right (whether or not currently exercisable), or interest to or in any Signal IP Rights. To the Knowledge of Signal, no employee or contractor of Signal is (a) bound by or otherwise subject to any Contract restricting him or her from performing his or her duties for Signal or (b) in breach of any Contract with any current or former employer or other Person concerning Signal IP Rights or confidentiality provisions protecting trade secrets and confidential information comprising Signal IP Rights.

(iii) No funding, facilities or personnel of any Governmental Body were used, directly or indirectly, to develop or create, in whole or in part, any Signal IP Rights in which Signal has an ownership interest.

(iv) Signal has taken reasonable steps to maintain the confidentiality of and otherwise protect and enforce its rights in all proprietary information that Signal holds, or purports to hold, as a trade secret.

(v) Signal has not assigned or otherwise transferred ownership of, or agreed to assign or otherwise transfer ownership of, any Signal IP Rights to any other Person, except for any such assignments or transfers made after the date of this Agreement pursuant to a definitive agreement for the sale of all of Signal s intellectual property assets related to the Lab Business.

(vi) To the Knowledge of Signal, the Signal IP Rights constitute all Intellectual Property necessary for Signal to conduct its business as currently conducted or planned to be conducted.

(f) Signal is not a party to any Contract that, as a result of the execution, delivery and performance of this Agreement and the consummation of the Contemplated Transactions will cause the grant of any license or other right to any Signal IP Rights or impair the right of Signal or the Surviving Corporation and its Subsidiaries to use, sell, license or enforce any Signal IP Rights or portion thereof, except for the occurrence of any such grant or impairment that would not reasonably be expected to result in a Signal Material Adverse Effect.

(g) The manufacture, marketing, license, sale or intended use of any product or service currently approved or sold or under preclinical or clinical development by Signal (i) does not violate or constitute a breach of any license or agreement between Signal and any third party, and, (ii) to the Knowledge of Signal, does not infringe or misappropriate any Intellectual Property right of any other party. Signal has disclosed in correspondence to Miragen the third-party patents and patent applications found during all freedom to operate searches that were conducted by Signal related to any product or technology currently approved or sold or under preclinical or clinical development by Signal. To the Knowledge of Signal, no third party is infringing upon or misappropriating, or violating any license or agreement with Signal relating to, any Signal IP Rights. There is no current or pending challenge, claim or Legal Proceeding (including opposition, interference or other proceeding in any patent or other government office) contesting the validity, enforceability, ownership or right to use, sell, license or dispose of any Signal IP Rights, nor has Signal received any written notice asserting that the manufacture, marketing, license, sale or intended use of any product or service currently approved or sold or under preclinical or clinical development by Signal conflicts with or infringes or misappropriates or will conflict with or infringe or misappropriate the rights of any other Person.

(h) Each item of Signal IP Rights that is Signal Registered IP is and at all times has been filed and maintained in compliance with all applicable Legal Requirements and all filings, payments and other actions required to be made or taken to maintain such item of Signal Registered IP in full force and effect have been made by the applicable deadline, except for any failure to perform any of the foregoing, individually or collectively, that would not have a Signal

Material Adverse Effect.

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(i) No trademark (whether registered or unregistered) or trade name owned, used, or applied for by Signal conflicts or interferes with any trademark (whether registered or unregistered) or trade name owned, used, or applied for by any other Person. None of the goodwill associated with or inherent in any trademark (whether registered or unregistered) in which Signal has or purports to have an ownership interest has been impaired as determined by Signal in accordance with GAAP.

(j) (i) Signal is not bound by any Contract to indemnify, defend, hold harmless, or reimburse any other Person with respect to any Intellectual Property infringement, misappropriation, or similar claim, and (ii) neither Signal nor any of its former Subsidiaries has ever assumed, or agreed to discharge or otherwise take responsibility for, any existing or potential liability of another Person for infringement, misappropriation, or violation of any Intellectual Property right, which assumption, agreement or responsibility remains in force as of the date of this Agreement.

3.10 Material Contracts. Section 3.10 of the Signal Disclosure Schedule lists the following Signal Contracts, effective as of the date of this Agreement (each, a ***Signal Material Contract*** and collectively, the ***Signal Material Contracts***):

(i) each Signal Contract relating to any material bonus, deferred compensation, severance, incentive compensation, pension, profit-sharing or retirement plans, or any other employee benefit plans or arrangements;

(ii) each Signal Contract relating to the employment of, or the performance of employment-related services by, any Person, including any employee, consultant or independent contractor, or entity providing employment related, consulting or independent contractor services, not terminable by Signal on 90 calendar days or less notice without liability, except to the extent general principles of wrongful termination law may limit Signal s ability to terminate employees at will;

(iii) each Signal Contract relating to any agreement or plan, including any stock option plan, stock appreciation right plan or stock purchase plan, any of the benefits of which will be increased, or the vesting of benefits of which will be accelerated, by the occurrence of any of the Contemplated Transactions (either alone or in conjunction with any other event, such as termination of employment) or the value of any of the benefits of which will be calculated on the basis of any of the Contemplated Transactions;

(iv) each Signal Contract relating to any agreement of indemnification or guaranty not entered into in the Ordinary Course of Business;

(v) each Signal Contract containing (A) any covenant limiting the freedom of Signal or the Surviving Corporation to engage in any line of business or compete with any Person, (B) any most-favored pricing arrangement, (C) any exclusivity provision, or (D) any non-solicitation provision;

(vi) each Signal Contract relating to capital expenditures and involving obligations after the date of this Agreement in excess of $25,000 and not cancelable without penalty;

(vii) each Signal Contract relating to the disposition or acquisition of material assets or any ownership interest in any Entity;

(viii) each Signal Contract relating to any mortgages, indentures, loans, notes or credit agreements, security agreements or other agreements or instruments relating to the borrowing of money or extension of credit in excess of $25,000 or creating any material Encumbrances with respect to any assets of Signal or any loans or debt obligations with officers or directors of Signal;

(ix) each Signal Contract relating to: (A) any distribution agreement (identifying any that contain exclusivity provisions); (B) any agreement involving provision of services or products with respect to any pre-

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clinical or clinical development activities of Signal; (C) any dealer, distributor, joint marketing, alliance, joint venture, cooperation, development or other agreement currently in force under which Signal has continuing obligations to develop or market any product, technology or service, or any agreement pursuant to which Signal has continuing obligations to develop any Intellectual Property that will not be owned, in whole or in part, by Signal; or (D) any Contract to license any third party to manufacture or produce any product, service or technology of Signal or any Contract to sell, distribute or commercialize any products or service of Signal, except agreements in the Ordinary Course of Business;

(x) each Signal Contract with any Person, including any financial advisor, broker, finder, investment banker or other Person, providing advisory services to Signal in connection with the Contemplated Transactions;

(xi) each Signal IP Right Agreement;

(xii) each Signal Lease; or

(xiii) any other Signal Contract that is not terminable at will (with no penalty or payment) by Signal and (i) which involves payment or receipt by Signal after the date of this Agreement under any such agreement, contract or commitment of more than $25,000 in the aggregate, or obligations after the date of this Agreement in excess of $25,000 in the aggregate, or (ii) that is material to the business or operations of Signal.

(b) Signal has delivered or made available to Miragen accurate and complete (except for applicable redactions thereto) copies of all Signal Material Contracts, including all amendments thereto. There are no Signal Material Contracts that are not in written form. Signal has not, nor to Signal s Knowledge, as of the date of this Agreement has any other party to a Signal Material Contract (as defined below) breached, violated or defaulted under, or received notice that it has breached, violated or defaulted under, any of the terms or conditions of any Signal Material Contract in such manner as would permit any other party to cancel or terminate any such Signal Material Contract, or would permit any other party to seek damages that constitutes a Signal Material Adverse Effect. As of the date of this Agreement, each Signal Material Contract is valid, binding, enforceable and in full force and effect, subject to: (i) laws of general application relating to bankruptcy, insolvency and the relief of debtors; and (ii) rules of law governing specific performance, injunctive relief and other equitable remedies.

3.11 Undisclosed Liabilities. As of the date of this Agreement, Signal has no Liability, except for: (a) Liabilities identified as such in the Signal Unaudited Interim Balance Sheet; (b) normal and recurring current Liabilities that have been incurred by Signal since the date of the Signal Unaudited Interim Balance Sheet in the Ordinary Course of Business and that are not in excess of $25,000 in the aggregate; (c) Liabilities for performance in the Ordinary Course of Business of obligations of Signal under Signal Contracts, including the reasonably expected performance of such Signal Contracts in accordance with their terms (which would not include, for example, any instances of breach or indemnification); (d) Liabilities described in Section 3.11 of the Signal Disclosure Schedule; and (e) Liabilities incurred in connection with the Contemplated Transactions.

3.12 Compliance; Permits; Restrictions.

(a) Signal is, and since January 1, 2011, each of Signal and its former Subsidiaries has been in compliance with all applicable Legal Requirements except for any non-compliance that would not constitute a Signal Material Adverse Effect. No investigation, claim, suit, proceeding, audit or other action by any Governmental Body or authority is pending or, to the Knowledge of Signal, threatened against Signal. There is no Contract, judgment, injunction, order or decree binding upon Signal which (i) has or would reasonably be expected to have the effect of prohibiting or materially impairing any business practice of Signal, any acquisition of material property by Signal or the conduct of

business by Signal as currently conducted, (ii) would reasonably be expected to have an adverse effect on Signal s ability to comply with or perform any covenant or obligation under this Agreement or (iii) would reasonably be expected to have the effect of preventing, delaying, making illegal or otherwise interfering with the Merger or any of the Contemplated Transactions.

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(b) Signal holds all Governmental Authorizations that are material to the operation of its business (collectively, the ***Signal Permits***) as currently conducted. Section 3.12(b) of the Signal Disclosure Schedule identifies each Signal Permit. As of the date of this Agreement, Signal is in material compliance with the terms of the Signal Permits. No action, proceeding, revocation proceeding, amendment procedure, writ, injunction or claim is pending or, to the Knowledge of Signal, threatened, which seeks to revoke, limit, suspend, or materially modify any Signal Permit. The rights and benefits of each material Signal Permit will be available to the Surviving Corporation immediately after the Effective Time on terms substantially identical to those enjoyed by Signal as of the date of this Agreement and immediately prior to the Effective Time.

(c) There are no proceedings pending or, to the Knowledge of Signal, threatened with respect to an alleged material violation by Signal of the Clinical Laboratory Improvement Amendments (***CLIA***), state CLIA regulations, or any other similar Legal Requirements promulgated by a Governmental Body.

(d) Signal holds all required Governmental Authorizations issuable by any Governmental Body necessary for the conduct of its business as currently conducted (the ***Signal Regulatory Permits***) and no such Signal Regulatory Permit has been (i) revoked, withdrawn, suspended, canceled or terminated or (ii) modified in any materially adverse manner. Signal has not received any written notice or other written communication from any Governmental Body regarding any revocation, withdrawal, suspension, cancelation, termination or material modification of any Signal Regulatory Permit. Signal has made available to Miragen all information in its possession or control relating to the following (to the extent there are any): (A) adverse event reports; clinical study reports and material study data; and inspection reports, notices of adverse findings, warning letters, filings and letters and other written correspondence to and from any Governmental Body; and meeting minutes with any Governmental Body; and (B) similar reports, material study data, notices, letters, filings, correspondence and meeting minutes with any other Governmental Body.

(e) All clinical, pre-clinical and other studies and tests conducted by or on behalf of, or sponsored by, Signal or in which Signal or its products or services have participated were conducted in all material respects in accordance with standard medical and scientific research procedures and in compliance with applicable Legal Requirements.

(f) To the Knowledge of Signal, no material debarment or exclusionary claims, actions, proceedings or investigations in respect of their business or products are pending or threatened against Signal or its officers, employees or agents.

3.13 Tax Matters.

(a) Each of Signal and its former Subsidiaries has timely filed all federal income Tax Returns and other material Tax Returns that they were required to file under applicable Legal Requirements. All such Tax Returns were correct and complete in all material respects and have been prepared in material compliance with all applicable Legal Requirements. Signal is not currently the beneficiary of any extension of time within which to file any Tax Return. No claim has ever been made by an authority in a jurisdiction where Signal or its former Subsidiaries do not file Tax Returns that such company is subject to taxation by that jurisdiction.

(b) All material Taxes due and owing by Signal or any of its former Subsidiaries on or before the date hereof (whether or not shown on any Tax Return) have been paid. The unpaid Taxes of Signal and its former Subsidiaries have been reserved for on the Signal Unaudited Interim Balance Sheet in accordance with GAAP. Since the date of the Signal Unaudited Interim Balance Sheet, Signal has not incurred any Liability for Taxes outside the Ordinary Course of Business or otherwise inconsistent with past custom and practice.

(c) Signal has withheld and paid all Taxes required to have been withheld and paid in connection with any amounts paid or owing to any employee, independent contractor, creditor, stockholder or other third party.

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(d) There are no Encumbrances for Taxes (other than Taxes not yet due and payable or Taxes that are being contested in good faith and for which adequate reserves have been made on Signal s Unaudited Interim Balance Sheet) upon any of the assets of Signal.

(e) No material deficiencies for Taxes with respect to Signal have been claimed, proposed or assessed by any Governmental Body in writing. There are no pending (or, based on written notice, threatened) audits, assessments or other actions for or relating to any liability in respect of Taxes of Signal. No issues relating to Taxes of Signal were raised by the relevant Tax authority in any completed audit or examination that would reasonably be expected to result in a material amount of Taxes in a later taxable period. Signal has delivered or made available to Miragen complete and accurate copies of all federal income Tax and all other material Tax Returns of Signal (and the predecessors of each) for all taxable years remaining open under the applicable statute of limitations, and complete and accurate copies of all examination reports and statements of deficiencies assessed against or agreed to by Signal with respect to federal income Tax and all other material Taxes. Signal has not waived any statute of limitations in respect of Taxes or agreed to any extension of time with respect to a Tax assessment or deficiency, nor has any request been made in writing for any such extension or waiver.

(f) All material elections with respect to Taxes affecting Signal as of the date hereof are set forth on Section 3.13 of the Signal Disclosure Schedule. Signal has not (i) consented at any time under former Section 341(f)(1) of the Code to have the provisions of former Section 341(f)(2) of the Code apply to any disposition of the assets of Signal; (ii) agreed, or is required, to make any adjustment under Section 481(a) of the Code by reason of a change in accounting method or otherwise; (iii) made an election, or is required, to treat any of its assets as owned by another Person for Tax purposes or as a tax-exempt bond financed property or tax-exempt use property within the meaning of Section 168 of the Code; (iv) acquired or owns any assets that directly or indirectly secure any debt the interest on which is tax exempt under Section 103(a) of the Code; (v) made or will make a consent dividend election under Section 565 of the Code; (vi) elected at any time to be treated as an S corporation within the meaning of Sections 1361 or 1362 of the Code; or (vii) made any of the foregoing elections or is required to apply any of the foregoing rules under any comparable provision of state, local or foreign law.

(g) Signal has not been a United States real property holding corporation within the meaning of Section 897(c)(2) of the Code during the applicable period specified in Section 897(c)(1)(A)(ii) of the Code.

(h) Signal is not a party to any Tax allocation, Tax sharing or similar agreement (including indemnity arrangements), other than commercial contracts entered into in the Ordinary Course of Business with vendors, customers and landlords.

(i) Neither Signal nor any of its former Subsidiaries has ever been a member of an affiliated group filing a consolidated, combined or unitary Tax Return (other than a group the common parent of which is Signal) for federal, state, local or foreign Tax purposes. Signal has no Liability for the Taxes of any Person (other than Signal) under Treasury Regulations Section 1.1502-6 (or any similar provision of state, local, or foreign law), as a transferee or successor, by Contract or otherwise.

(j) Signal has not distributed stock of another Person, or has had its stock distributed by another Person, in a transaction that was purported or intended to be governed in whole or in part by Section 355 of the Code or Section 361 of the Code.

(k) Signal is not a partner for Tax purposes with respect to any joint venture, partnership, or, to the Knowledge of Signal, other arrangement or contract which is treated as a partnership for Tax purposes.

(l) Signal will not be required to include any item of income in, or exclude any item of deduction from, taxable income for any period (or any portion thereof) ending after the Closing Date as a result of any (i) installment sale or other open transaction disposition made on or prior to the Closing Date, or (ii) agreement with any Tax authority (including any closing agreement described in Section 7121 of the Code or any similar provision of state, local or foreign law) made or entered into on or prior to the Closing Date.

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(m) Signal has not entered into any transaction identified as a listed transaction for purposes of Treasury Regulations Sections 1.6011-4(b)(2) or 301.6111-2(b)(2).

(n) Signal has not taken any action, or has any knowledge of any fact or circumstance, that would reasonably be expected to prevent the Contemplated Transactions from qualifying as a reorganization within the meaning of Section 368(a) of the Code.

3.14 Employee and Labor Matters; Benefit Plans.

(a) The employment of each of the Signal employees is terminable by Signal at will (or otherwise in accordance with general principles of wrongful termination law). Signal has made available to Miragen accurate and complete copies of all employee manuals and handbooks, disclosure materials, policy statements and other materials relating to the employment of Signal Associates to the extent currently effective and material.

(b) Signal is not, and neither Signal or any of its former Subsidiaries has been, a party to, bound by, or has, or had, a duty to bargain under, any collective bargaining agreement or other Contract with a labor organization, trade or labor union, employees association or similar organization representing any of its employees, and there are no labor organizations, trade or labor unions, employees associations or similar organizations representing, purporting to represent or, to the Knowledge of Signal, seeking to represent any employees of Signal.

(c) Section 3.14(c) of the Signal Disclosure Schedule lists, as of the date of this Agreement, all written and describes all non-written employee benefit plans (as defined in Section 3(3) of ERISA) and all bonus, equity-based, retention, incentive, deferred compensation, retirement or supplemental retirement, profit sharing, severance, golden parachute, disability, life or accident insurance, paid time off, vacation, cafeteria, dependent care, medical care, employee assistance program, education or tuition assistance programs, fringe or employee benefit, and all other compensation, plans, programs, agreements or arrangements, including but not limited to any employment, consulting, independent contractor, severance or executive compensation agreements or arrangements (other than regular salary or wages), written or otherwise, which are currently in effect relating to any present or former employee, independent contractor or director of Signal or any Signal Affiliate, or which is maintained by, administered or contributed to by, or required to be contributed to by, Signal, any of Signal s former Subsidiaries or any Signal Affiliate, or under which Signal, any of Signal s former Subsidiaries or any Signal Affiliate has incurred or may incur any liability (each, an ***Signal Employee Plan***).

(d) With respect to each Signal Employee Plan, Signal has made available to Miragen a true and complete copy of, to the extent applicable, (i) such Signal Employee Plan, (ii) the three most recent annual reports (Form 5500) as filed with the Internal Revenue Service, (iii) each currently effective trust agreement related to such Signal Employee Plan, (iv) the most recent summary plan description for each Signal Employee Plan for which such description is required, along with all summaries of material modifications, amendments, resolutions and all other material plan documentation related thereto in the possession of Signal, (v) the most recent Internal Revenue Service determination or opinion letter or analogous ruling under foreign law issued with respect to any Signal Employee Plan, (vi) all material notices, letters or other correspondence to or from any Governmental Body or agency thereof within the last three years; (vii) all non-discrimination tests for the most recent three plan years; (viii) all material written agreements and Contracts currently in effect, including (without limitation) administrative service agreements, group annuity contracts, and group insurance contracts; (ix) all material written employee communications within the past three years, and (x) all registration statements and prospectuses prepared in connection with each Signal Employee Plan.

(e) Each Signal Employee Plan that is intended to be qualified under Section 401(a) of the Code has received a favorable determination or may rely on a favorable opinion letter with respect to such qualified status from the

Internal Revenue Service. To the Knowledge of Signal, nothing has occurred that would reasonably be expected to adversely affect the qualified status of any such Signal Employee Plan or the exempt status of any related trust. Each Signal Employee Plan has been maintained in compliance in all material respects, with its terms and, both as to form and operations, with all applicable Legal Requirements, including the Code and

ERISA. Except as set forth in Section 3.14(e)(i) of the Signal Disclosure Schedule, each Signal Employee Plan can be amended, terminated or otherwise discontinued in accordance with its terms, without material Liability to Signal, the Surviving Corporation, Miragen or any of their Affiliates (other than ordinary administrative expenses typically incurred in a termination event). Except as set forth in Section 3.14(e)(ii) of the Signal Disclosure Schedule, neither Signal nor any Signal Affiliate has announced its intention to modify or amend any Signal Employee Plan or adopt any arrangement or program which, once established, would come within the definition of a Signal Employee Plan, and to the Knowledge of Signal, each asset held under such Signal Employee Plan may be liquidated or terminated without the imposition of any material redemption fee, surrender charge or comparable Liability. Signal, each of its former Subsidiaries and each Signal Affiliate has performed all obligations required to be performed by it under, is not in default under or in violation of, and has no knowledge of any default or violation by any other party to, any of the Signal Employee Plans. Neither Signal, any of its former Subsidiaries, nor any Signal Affiliate is subject to any Liability or penalty under Sections 4976 through 4980 of the Code or Title I of ERISA with respect to any of the Signal Employee Plans. All contributions required to be made by Signal, any of its former Subsidiaries or any Signal Affiliate to any Signal Employee Plan have been made on or before their due dates (and no further contributions will be due or will have accrued thereunder as of the Closing Date, other than contributions accrued in the ordinary course of business consistent with past practice). No suit, administrative proceeding, action or other litigation has been initiated against, or to the Knowledge of Signal, is threatened, against or with respect to any Signal Employee Plan, including any audit or inquiry by the IRS, United States Department of Labor or other Governmental Body.

(f) Neither Signal, nor any of its former Subsidiaries or any Signal Affiliate has engaged in any transaction in violation of Sections 404 or 406 of ERISA or any prohibited transaction, as defined in Section 4975(c)(1) of the Code, for which no exemption exists under Section 408 of ERISA or Section 4975(c)(2) or (d) of the Code, or has otherwise violated the provisions of Part 4 of Title I, Subtitle B of ERISA. Neither Signal, nor any of its former Subsidiaries or any Signal Affiliate has knowingly participated in a violation of Part 4 of Title I, Subtitle B of ERISA by any plan fiduciary of any Signal Employee Plan subject to ERISA and neither Signal, nor any of its former Subsidiaries or any Signal Affiliate has been assessed any civil penalty under Section 502(l) of ERISA.

(g) No Signal Employee Plan is subject to Title IV or Section 302 of ERISA or Section 412 of the Code, and neither Signal, nor any of its former Subsidiaries or any Signal Affiliate has ever maintained, contributed to or partially or completely withdrawn from, or incurred any obligation or liability with respect to, any such plan. No Signal Employee Plan is a Multiemployer Plan, and neither Signal, nor any of its former Subsidiaries or any Signal Affiliate has ever contributed to or had an obligation to contribute, or incurred any liability in respect of a contribution, to any Multiemployer Plan. No Signal Employee Plan is a Multiple Employer Plan.

(h) No Signal Employee Plan provides for medical or death benefits beyond termination of service or retirement, other than (i) pursuant to COBRA or an analogous state law requirement or (ii) death or retirement benefits under a Signal Employee Plan qualified under Section 401(a) of the Code. Neither Signal nor any Signal Affiliate sponsors or maintains any self-funded employee benefit plan. No Signal Employee Plan is subject to any Legal Requirement of any foreign jurisdiction outside of the United States.

(i) To the Knowledge of Signal, no payment pursuant to any Signal Employee Plan or other arrangement to any service provider (as such term is defined in Section 409A of the Code and the United States Treasury Regulations and IRS guidance thereunder) from Signal or any of its former Subsidiaries, including the grant, vesting or exercise of any stock option, would subject any Person to tax pursuant to Section 409A(1) of the Code, whether pursuant to the Contemplated Transactions or otherwise.

(j) With respect to Signal Options granted pursuant to the 2014 Plan, (i) each Signal Option intended to qualify as an incentive stock option under Section 422 of the Code so qualifies, (ii) each grant of a Signal Option was duly

authorized no later than the date on which the grant of such Signal Option was by its terms to be

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effective by all necessary corporate action, including, as applicable, approval by the Signal Board of Directors (or a duly constituted and authorized committee thereof) and any required stockholder approval by the necessary number of votes or written consents, and the award agreement governing such grant (if any) was duly executed and delivered by each party thereto, (iii) each Signal Option grant was made in accordance with the terms of the 2014 Plan, the Exchange Act and all other applicable Legal Requirements, including the rules of NASDAQ and any other exchange on which Signal securities are traded, (iv) the per share exercise price of each Signal Option was not less than the fair market value of a share of Signal Common Stock on the applicable Grant Date and (v) each such Signal Option grant was properly accounted for in accordance with GAAP in the financial statements (including the related notes) of Signal and disclosed in Signal filings with the Securities and Exchange Commission in accordance with the Exchange Act and all other applicable Legal Requirements. Signal has not knowingly granted, and there is no and has been no policy or practice of Signal of granting, Signal Options prior to, or otherwise coordinate the grant of Signal Options with, the release or other public announcement of material information regarding Signal or its results of operations or prospects.

(k) No Signal Options, stock appreciation rights or other equity-based awards issued or granted by Signal are subject to the requirements of Code Section 409A. Each nonqualified deferred compensation plan (as such term is defined under Section 409A(d)(1) of the Code and the guidance thereunder) maintained by or under which Signal or any of its former Subsidiaries makes, is obligated to make or promises to make, payments (each, a ***Signal 409A Plan***) complies in all material respects, in both form and operation, with the requirements of Code Section 409A and the guidance thereunder. No payment to be made under any Signal 409A Plan is, or to the Knowledge of Signal will be, subject to the penalties of Code Section 409A(a)(1).

(l) Signal is in compliance with all of its bonus, commission and other compensation plans and has paid any and all amounts required to be paid under such plans, including any and all bonuses and commissions (or pro rata portion thereof) that may have accrued or been earned through the calendar quarter preceding the Effective Time, and is not liable for any payments, taxes or penalties for failure to comply with any of the terms or conditions of such plans or the laws governing such plans.

(m) Each of Signal and its former Subsidiaries has complied in all material respects with all state and federal laws applicable to employees, including but not limited to COBRA, FMLA, CFRA, HIPAA, the Women s Health and Cancer Rights Act of 1998, the Newborn s and Mothers Health Protection Act of 1996, and any similar provisions of state law applicable to its employees. To the extent required under HIPAA and the regulations issued thereunder, Signal and each of its former Subsidiaries has, prior to the Closing Date, performed all obligations under the medical privacy rules of HIPAA (45 C.F.R. Parts 160 and 164), the electronic data interchange requirements of HIPAA (45 C.F.R. Parts 160 and 162), and the security requirements of HIPAA (45 C.F.R. Part 142). Neither Signal nor any of its former Subsidiaries has any material unsatisfied obligations to any of its employees or qualified beneficiaries pursuant to COBRA, HIPAA or any state law governing health care coverage or extension. Signal and each Signal Affiliate is in compliance in all material respects with all applicable requirements of the ACA, including all requirements relating to eligibility waiting periods and the offer of or provision of minimum essential coverage that is compliant with Section 36B(c)(2)(C) of the Code and the regulations issued thereunder to full-time employees as defined in Section 4980H(c)(4) of the Code and the regulations issued thereunder. No excise tax or penalty under the ACA, including Sections 4980D and 4980H of the Code, is outstanding, has accrued, or has arisen with respect to any period prior to the Closing, with respect to any Signal Employee Plan. Neither Signal nor any Signal Affiliate has any unsatisfied obligations to any employees or qualified beneficiaries pursuant to the ACA, or any state or local Legal Requirement governing health care coverage or benefits that would reasonably be expected to result in any material liability to Signal. Each of Signal and its Signal Affiliates has maintained all records necessary to demonstrate its compliance with the ACA.

(n) Signal is, and its former Subsidiaries were in material compliance with all applicable foreign, federal, state and local laws, rules, regulations, orders, rulings, judgments, decrees or arbitration awards respecting employment, employment practices, terms and conditions of employment, worker classification, tax withholding, prohibited discrimination, equal employment, fair employment practices, meal and rest periods,

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immigration status, employee safety and health, wages (including overtime wages), compensation, hours of work, labor relations, leave of absence requirements, occupational health and safety, privacy, harassment, retaliation, immigration and wrongful discharge and in each case, with respect to employees: (i) has withheld and reported all amounts required by law or by agreement to be withheld and reported with respect to wages, salaries and other payments to employees, (ii) is not liable for any arrears of wages, severance pay or any Taxes or any penalty of any material amount for failure to comply with any of the foregoing, and (iii) is not liable for any payment to any trust or other fund governed by or maintained by or on behalf of any Governmental Body, with respect to unemployment compensation benefits, social security or other benefits or obligations for employees (other than routine payments to be made in the normal course of business and consistent with past practice). There are no actions, suits, claims or administrative matters pending, or to the Knowledge of Signal, threatened or reasonably anticipated against Signal relating to any employee, employment agreement, independent contractor, independent contractor agreement or Signal Employee Plan. There are no pending or, to the Knowledge of Signal, threatened or reasonably anticipated claims or actions against Signal or any trustee of Signal under any worker s compensation policy or long-term disability policy. Signal is not a party to a conciliation agreement, consent decree or other agreement or order with any federal, state, or local agency or Governmental Body with respect to employment practices. Signal has good labor relations.

(o) No current or former independent contractor of Signal or any of its former Subsidiaries would reasonably be deemed to be a misclassified employee. Except as set forth on Section 3.14(o) of the Signal Disclosure Schedule, no independent contractor is eligible to participate in any Signal Employee Plan. Neither Signal nor any of its former Subsidiaries has material liability with respect to any misclassification of: (A) any Person as an independent contractor rather than as an employee, (B) any employee leased from another employer, or (C) any employee currently or formerly classified as exempt from overtime wages. Neither Signal nor any of its former Subsidiaries has taken any action which would constitute a plant closing or mass layoff within the meaning of the WARN Act or similar state or local law, issued any notification of a plant closing or mass layoff required by the WARN Act or similar state or local law, or incurred any liability or obligation under WARN or any similar state or local law that remains unsatisfied. No terminations of employees of Signal prior to the Closing would trigger any notice or other obligations under the WARN Act or similar state or local law.

(p) There has never been, nor has there been any threat of, any strike, slowdown, work stoppage, lockout, job action, union organizing activity, or any similar activity or dispute, affecting Signal or any of its former Subsidiaries. No event has occurred, and no condition or circumstance exists, that might directly or indirectly be likely to give rise to or provide a basis for the commencement of any such strike, slowdown, work stoppage, lockout, job action, union organizing activity, question concerning representation or any similar activity or dispute.

(q) Signal is not, and neither Signal nor any of its former Subsidiaries, has been, engaged in any unfair labor practice within the meaning of the National Labor Relations Act. There is no Legal Proceeding, claim, labor dispute or grievance pending or, to the Knowledge of Signal, threatened or reasonably anticipated relating to any employment contract, privacy right, labor dispute, wages and hours, leave of absence, plant closing notification, workers compensation policy, long-term disability policy, harassment, retaliation, immigration, employment statute or regulation, safety or discrimination matter involving any Signal Associate, including charges of unfair labor practices or discrimination complaints.

(r) There is no Contract or arrangement to which Signal or any Signal Affiliate is a party or by which it is bound to compensate any of its current or former employees, independent contractors or directors for additional income or excise taxes paid pursuant to Sections 409A or 4999 of the Code.

(s) Neither Signal nor any Signal Affiliate is a party to any Contract that has resulted or would reasonably be expected to result, separately or in the aggregate, in the payment of (i) any excess parachute payment within the meaning of

Section 280G of the Code and (ii) any amount the deduction for which would be disallowed under Section 162(m) of the Code.

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(t) Except as set forth in Section 3.14(t) of the Signal Disclosure Schedule, none of the execution and delivery of this Agreement, or the consummation of the Contemplated Transactions or any termination of employment or service or any other event in connection therewith or subsequent thereto will, individually or together or with the occurrence of some other event, (i) result in any payment (including severance, unemployment compensation, golden parachute, bonus or otherwise) becoming due to any employee, independent contractor or director of Signal, (ii) materially increase or otherwise enhance any benefits otherwise payable by Signal, (iii) result in the acceleration of the time of payment or vesting of any such benefits, except as required under Section 411(d)(3) of the Code, (iv) increase the amount of compensation due to any Person by Signal or (v) result in the forgiveness in whole or in part of any outstanding loans made by Signal to any Person.

3.15 Environmental Matters. Signal is in material compliance with all applicable Environmental Laws, which compliance includes the possession by Signal of all permits and other Governmental Authorizations required under applicable Environmental Laws and compliance with the terms and conditions thereof other than any failure to be in compliance or possess any such permits and authorized that is not a Signal Material Adverse Effect. Neither Signal nor any of its former Subsidiaries has received since January 1, 2011 any written notice or other communication (in writing or otherwise), whether from a Governmental Body, citizens group, employee or otherwise, that alleges that Signal is not in compliance with any Environmental Law, and, to the Knowledge of Signal, there are no circumstances that may prevent or interfere with Signal s compliance with any Environmental Law in the future. To the Knowledge of Signal: (i) no current or prior owner of any property leased or controlled by Signal or any of its former Subsidiaries has received since January 1, 2011, any written notice or other communication relating to property owned or leased at any time by Signal, whether from a Governmental Body, citizens group, employee or otherwise, that alleges that such current or prior owner or Signal or any of its former Subsidiaries is not in compliance with or has violated any Environmental Law relating to such property and (ii) neither Signal nor any of its former Subsidiaries has any material liability under any Environmental Law.

3.16 Insurance.

(a) Signal made available to Miragen accurate and complete copies of all material insurance policies and all material self-insurance programs and arrangements relating to the business, assets, liabilities and operations of Signal, as of the date of this Agreement. Each of such insurance policies is in full force and effect and Signal is in compliance with the terms thereof. As of the date of this Agreement, other than customary end of policy notifications from insurance carriers, since January 1, 2011, Signal has not received any notice or other communication regarding any actual or possible: (a) cancelation or invalidation of any insurance policy; (b) refusal or denial of any coverage, reservation of rights or rejection of any material claim under any insurance policy; or (c) material adjustment in the amount of the premiums payable with respect to any insurance policy. There is no pending workers compensation or other claim under or based upon any insurance policy of Signal. All information provided to insurance carriers (in applications and otherwise) on behalf of Signal is accurate and complete. Signal has provided timely written notice to the appropriate insurance carrier(s) of each Legal Proceeding pending or threatened in writing against Signal, and no such carrier has issued a denial of coverage or a reservation of rights with respect to any such Legal Proceeding, or informed Signal of its intent to do so.

(b) Signal has delivered to Miragen accurate and complete copies of the existing policies (primary and excess) of directors and officers liability insurance maintained by Signal and each Signal Subsidiary as of the date of this Agreement (the ***Existing Signal D&O Policies***). Section 3.16(b) of the Signal Disclosure Schedule accurately sets forth, as of the date of this Agreement, the most recent annual premiums paid by Signal and each Signal Subsidiary with respect to the Existing Signal D&O Policies. All premiums for the Existing Signal D&O Policies have been paid.

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3.17 Legal Proceedings; Orders.

(a) There is no pending Legal Proceeding, and, to the Knowledge of Signal, no Person has threatened in writing to commence any Legal Proceeding: (i) that involves Signal, or to the Knowledge of Signal, any director or officer of Signal (in his or her capacity as such) or any of the material assets owned or used by Signal; or (ii) that challenges, or that would reasonably be expected to have the effect of preventing, delaying, making illegal or otherwise interfering with, the Contemplated Transactions, in each case, except for any such Legal Proceedings that would not constitute a Signal Material Adverse Effect. To the Knowledge of Signal, no event has occurred, and no claim, dispute or other condition or circumstance exists, that will, or that would reasonably be expected to, give rise to or serve as a basis for the commencement of any such Legal Proceeding.

(b) There is no order, writ, injunction, judgment or decree to which Signal or any of the material assets owned or used by Signal, is subject. To the Knowledge of Signal, no officer of Signal is subject to any order, writ, injunction, judgment or decree that prohibits such officer from engaging in or continuing any conduct, activity or practice relating to the business of Signal or to any material assets owned or used by Signal.

3.18 Inapplicability of Anti-takeover Statutes. The Signal Board of Directors and the board of directors of Merger Sub have taken and will take all actions necessary to ensure that the restrictions applicable to business combinations contained in Section 203 of the DGCL are, and will be, inapplicable to the execution, delivery and performance of this Agreement and the Signal Stockholder Support Agreements and to the consummation of Contemplated Transactions. No other state takeover statute or similar Legal Requirement applies or purports to apply to the Merger, this Agreement, the Signal Stockholder Support Agreements or any of the other Contemplated Transactions.

3.19 No Financial Advisor. Except as set forth on Section 3.19 of the Signal Disclosure Schedule, no broker, finder or investment banker is entitled to any brokerage fee, finder s fee, opinion fee, success fee, transaction fee or other fee or commission in connection with the Contemplated Transactions based upon arrangements made by or on behalf of Signal or Merger Sub.

3.20 Disclosure. The information supplied by Signal for inclusion in the Proxy Statement / Prospectus / Information Statement will not, as of the date of the Proxy Statement / Prospectus / Information Statement or as of the date such information is first mailed to Signal Stockholders, (i) contain any untrue statement of any material fact or (ii) omit to state any material fact necessary in order to make such information, in the light of the circumstances under which such information is provided, not false or misleading.

3.21 Bank Accounts; Deposits.

(a) Section 3.21(a) of the Signal Disclosure Schedule provides accurate information with respect to each account maintained by or for the benefit of Signal at any bank or other financial institution, including the name of the bank or financial institution, the account number, the balance as of September 30, 2016 and the names of all individuals authorized to draw on or make withdrawals from such accounts.

(b) All existing accounts receivable of Signal (including those accounts receivable reflected on the Signal Unaudited Interim Balance Sheet that have not yet been collected and those accounts receivable that have arisen since the date of the Signal Unaudited Interim Balance Sheet and have not yet been collected) (i) represent valid obligations of customers of Signal arising from bona fide transactions entered into in the Ordinary Course of Business, and (ii) are current and collectible in full when due, without any counterclaim or set off, net of applicable reserves for bad debts on the Signal Unaudited Interim Balance Sheet. All deposits of Signal (including those set forth on the Signal Unaudited Interim Balance Sheet) which are individually more than $10,000 or more than $25,000 in the aggregate

are fully refundable to Signal.

3.22 Transactions with Affiliates. Except as set forth in the Signal SEC Documents filed prior to the date of this Agreement, since the date of Signal s last proxy statement filed in 2016 with the SEC, no event has

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occurred that would be required to be reported by Signal pursuant to Item 404 of Regulation S-K promulgated by the SEC. Section 3.22 of the Signal Disclosure Schedule identifies each Person who is (or who may be deemed to be) an Affiliate of Signal as of the date of this Agreement.

3.23 Valid Issuance. The Signal Common Stock to be issued in the Merger will, when issued in accordance with the provisions of this Agreement be validly issued, fully paid and nonassessable.

3.24 Code of Ethics. Signal has adopted a code of ethics, as defined by Item 406(b) of Regulation S-K of the SEC, for senior financial officers, applicable to its principal executive officer, principal financial officer, controller or principal accounting officer, or persons performing similar functions. Signal has promptly disclosed any change in or waiver of Signal s code of ethics with respect to any such persons, as required by Section 406(b) of the Sarbanes-Oxley Act. To the Knowledge of Signal, there have been no violations of provisions of Signal s code of ethics by any such persons.

3.25 Opinion of Financial Advisor. The Signal Board of Directors (in its capacity as such) has received an opinion of Cantor Fitzgerald & Co., financial advisor to Signal, to the effect that, as of the date of such opinion and based upon and subject to the various assumptions, qualifications and limitations set forth therein, the Exchange Ratio is fair to Signal from a financial point of view. Promptly following execution of this Agreement, Signal will furnish an accurate and complete copy of such opinion to Miragen.

3.26 Shell Company Status. Signal is not an issuer identified in Rule 144(i)(1) or of the Securities Act or a shell company as defined in Rule 12b-2 of the Exchange Act.

3.27 Exclusivity of Representations; Reliance.

(a) Except as expressly set forth in this Article 3, neither Signal, Merger Sub, nor any Person on behalf of Signal or Merger Sub has made, nor are any of them making, any representation or warranty, written or oral, express or implied, at law or in equity, including with respect to merchantability or fitness for any particular purpose, in respect of Signal or its business in connection with the transactions contemplated hereby, including any representations or warranties about the accuracy or completeness of any information or documents previously provided (including with respect to any financial or other projections therein), and any other such representations and warranties are hereby expressly disclaimed.

(b) Signal and Merger Sub acknowledge and agree that, except for the representations and warranties of Miragen set forth in Article 2, none of Signal, Merger Sub or any of their respective Representatives is relying on any other representation or warranty of Miragen or any other Person made outside of Article 2 of this Agreement, including regarding the accuracy or completeness of any such other representations or warranties or the omission of any material information, whether express or implied, in each case with respect to the Contemplated Transactions.

ARTICLE 4. CERTAIN COVENANTS OF THE PARTIES

4.1 Access and Investigation. Subject to the terms of the Confidentiality Agreement which the Parties agree will continue in full force following the date of this Agreement, during the period commencing on the date of this Agreement and continuing until the earlier of the termination of this Agreement in accordance with the terms hereto and the Effective Time (the ***Pre-Closing Period***), upon reasonable notice each Party shall, and shall use commercially reasonable efforts to cause such Party s Representatives to:

(a) provide the other Party and such other Party s Representatives with reasonable access during normal business hours to such Party s Representatives, personnel and assets and to all existing books, records, Tax Returns, work papers and

other documents and information relating to such Party and its Subsidiaries;

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(b) provide the other Party and such other Party s Representatives with such copies of the existing books, records, Tax Returns, work papers, product data, and other documents and information relating to such Party and its Subsidiaries, and with such additional financial, operating and other data and information regarding such Party and its Subsidiaries as the other Party may reasonably request; and

(c) permit the other Party s officers and other employees to meet, upon reasonable notice and during normal business hours, with the chief financial officer and other officers and managers of such Party responsible for such Party s financial statements and the internal controls of such Party to discuss such matters as the other Party may deem necessary or appropriate in order to enable the other Party to satisfy its obligations under the Sarbanes-Oxley Act and the rules and regulations relating thereto. Without limiting the generality of any of the foregoing, during the Pre-Closing Period, each Party shall promptly make available to the other Party copies of:

(i) the unaudited monthly consolidated balance sheets of such Party as of the end of each calendar month and the related unaudited monthly consolidated statements of operations, statements of stockholders equity and statements of cash flows for such calendar month, which shall be delivered within 30 calendar days after the end of such calendar month, or such longer periods as the Parties may agree to in writing;

(ii) all material operating and financial reports prepared by such Party for its senior management, including sales forecasts, marketing plans, development plans, discount reports, write-off reports, hiring reports and capital expenditure reports prepared for its management;

(iii) any written materials or communications sent by or on behalf of a Party to its stockholders;

(iv) any material notice, document or other communication sent by or on behalf of a Party to any party to any Signal Material Contract or Miragen Material Contract, as applicable, or sent to a Party by any party to any Signal Material Contract or Miragen Material Contract, as applicable (other than any communication that relates solely to routine commercial transactions between such Party and the other party to any such Signal Material Contract or Miragen Material Contract, as applicable, and that is of the type sent in the Ordinary Course of Business and consistent with past practices);

(v) any notice, report or other document filed with or otherwise furnished, submitted or sent to any Governmental Body on behalf of a Party in connection with the Merger or any of the Contemplated Transactions;

(vi) any non-privileged notice, document or other communication sent by or on behalf of, or sent to, a Party relating to any pending or threatened Legal Proceeding involving or affecting such Party; and

(vii) any material notice, report or other document received by a Party from any Governmental Body.

(b) Notwithstanding the foregoing, (i) any Party may restrict the foregoing access to the extent that any Legal Requirement applicable to such Party requires such Party to restrict or prohibit access to any of such Party s properties or information and (ii) neither Party nor its respective Representatives or Subsidiaries shall be required to provide access to or disclose information where such access or disclosure would jeopardize the protection of attorney-client privilege.

4.2 Operation of Signal s Business.

(a) Except as set forth on Section 4.2(a) of the Signal Disclosure Schedule, as expressly required or permitted by this Agreement, or as required by applicable Legal Requirements, during the Pre-Closing Period, Signal shall: (i) conduct

its business and operations in the Ordinary Course of Business; (ii) continue to pay outstanding accounts payable and other current Liabilities (including payroll) when due and payable; and (iii) conduct its business and operations in compliance with all applicable Legal Requirements and the requirements of all Signal Contracts that constitute Signal Material Contracts.

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(b) Without limiting the generality of the foregoing, during the Pre-Closing Period, except as set forth on Section 4.2(b) of the Signal Disclosure Schedule, as expressly required or permitted by this Agreement, or as required by applicable Legal Requirements, Signal shall not, without the prior written consent of Miragen (which consent shall not be unreasonably withheld or delayed):

(i) (A) declare, accrue, set aside or pay any dividend or made any other distribution in respect of any shares of Signal Capital Stock or (B) repurchase, redeem or otherwise reacquire any shares of its capital stock or other securities;

(ii) sell, issue or grant, or authorize the issuance of: (A) any capital stock or other security (except for shares of Signal Common Stock issued upon the settlement of Signal RSUs or upon the valid exercise of Signal Options or Signal Warrants outstanding as of the date of this Agreement), (B) any option, warrant or right to acquire any capital stock or any other security, (C) any equity-based award or instrument convertible into or exchangeable for any capital stock or other security, or (D) any debt securities or any rights to acquire any debt securities;

(iii) amend the certificate of incorporation, bylaws or other charter or organizational documents of Signal or Merger Sub, or effect or be a party to any merger, consolidation, share exchange, business combination, recapitalization, reclassification of shares, stock split, reverse stock split or similar transaction;

(iv) form any Subsidiary or acquire any equity interest or other interest in any other Entity;

(v) (A) lend money to any Person, (B) incur or guarantee any indebtedness for borrowed money, other than in the Ordinary Course of Business, (C) guarantee any debt securities of others, or (D) make any capital expenditure or commitment;

(vi) (A) adopt, establish or enter into any Signal Employee Plan, (B) cause or permit any Signal Employee Plan to be amended other than as required by law, including in order to make amendments for the purposes of Section 409A of the Code, subject to prior review and approval (with such approval not to be unreasonably withheld, conditioned or delayed) by Miragen, (C) hire any additional employees or independent contractors or enter into or amend the term of any employment or consulting agreement with any employee or independent contractor other than as reasonably necessary for the completion of the Contemplated Transactions, (D) enter into any Contract with a labor union or collective bargaining agreement, (E) except as provided in the Signal Disclosure Schedule, pay any bonus or make any profit-sharing or similar payment to (other than in the Ordinary Course of Business), or increase the amount of the wages, salary, commissions, fringe benefits or other compensation or remuneration payable to, any of its directors or employees, (F) except as provided in the Signal Disclosure Schedule, accelerate the vesting of or entitlement to any payment, award, compensation or benefit with respect to any Signal Associate, (G) except as provided in the Signal Disclosure Schedule, pay or increase the severance or change of control benefits offered to any Signal Associate, or (H) provide or make any Tax-related gross-up payment, *provided*, that Signal may pay those Terminated Signal Associate Payments set forth on Schedule 5.6(a)(ii) to the Terminated Signal Associates in connection with their termination of employment or service;

(vii) enter into any material transaction outside the Ordinary Course of Business;

(viii) acquire any material asset nor sell, lease, or otherwise irrevocably dispose of any of its assets or properties, or grant any Encumbrance with respect to such assets or properties, other than in the Ordinary Course of Business;

(ix) (A) make, change or revoke any material Tax election, (B) file any material amendment to any Tax Return, (C) adopt or change any accounting method in respect of Taxes, (D) change any annual Tax accounting period, (E) enter into any Tax allocation agreement, Tax sharing agreement or Tax indemnity

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agreement, other than commercial contracts entered into in the Ordinary Course of Business with vendors, customers or landlords, (F) enter into any closing agreement with respect to any Tax, (G) settle or compromise any claim, notice, audit report or assessment in respect of material Taxes, (H) apply for or enter into any ruling from any Tax authority with respect to Taxes, (I) surrender any right to claim a material Tax refund, or (J) consent to any extension or waiver of the statute of limitations period applicable to any material Tax claim or assessment;

(x) enter into, amend or terminate any Signal Contract that, if effective as of the date hereof, would constitute a Signal Material Contract;

(xi) initiate or settle any Legal Proceeding;

(xii) after the Net Cash Calculation is finalized pursuant to Section 1.6, incur any Liabilities or otherwise take any actions other than in the Ordinary Course of Business so as to cause the final Net Cash Calculation to differ materially from actual Net Cash as of the Closing; or

(xiii) agree, resolve or commit to do any of the foregoing.

4.3 Operation of Miragen s Business.

(a) Except as set forth on Section 4.3(a) of the Miragen Disclosure Schedule, as expressly required or permitted by this Agreement, or as required by applicable Legal Requirements, during the Pre-Closing Period, Miragen shall and shall cause its Subsidiaries to conduct its business and operations: (i) in the Ordinary Course of Business; and (ii) in compliance with all applicable Legal Requirements and the requirements of all Miragen Contracts that constitute Miragen Material Contracts.

(b) Without limiting the generality of the foregoing, during the Pre-Closing Period, except as set forth on Section 4.3(b) of the Miragen Disclosure Schedule, as expressly permitted by this Agreement, or as required by applicable Legal Requirements, Miragen shall not, nor shall it permit any of its Subsidiaries to, without the prior written consent of Signal (which consent shall not be unreasonably withheld or delayed):

(i) (A) declare, accrue, set aside or pay any dividend or made any other distribution in respect of any shares of Miragen Capital Stock or (B) repurchase, redeem or otherwise reacquire any shares of its capital stock or other securities except pursuant to Miragen Contracts existing as of the date of this Agreement;

(ii) sell, issue or grant, or authorize the issuance of: (A) any capital stock or other security (except in connection with the Miragen Pre-Closing Financing and for shares of Miragen Common Stock issued upon the valid exercise of Miragen Options or Miragen Warrants outstanding as of the date of this Agreement), (B) any option, warrant or right to acquire any capital stock or any other security (except for the grant of options to purchase up to an aggregate 379,524 shares of Miragen Common Stock and except for any warrants issued to Silicon Valley Bank pursuant to the terms of Miragen s existing credit facility), (C) any equity-based award or instrument convertible into or exchangeable for any capital stock or other security, or (D) any debt securities or any rights to acquire any debt securities;

(iii) amend the certificate of incorporation, bylaws or other charter or organizational documents of Miragen (other than in connection with the Miragen Pre-Closing Financing), or effect or be a party to any merger, consolidation, share exchange, business combination, recapitalization, reclassification of shares, stock split, reverse stock split or similar transaction;

(iv) form any Subsidiary or acquire any equity interest or other interest in any other Entity;

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(v) (A) lend money to any Person, (B) incur or guarantee any indebtedness for borrowed money, other than in the Ordinary Course of Business or under Miragen s existing credit facility with Silicon Valley Bank, (C) guarantee any debt securities of others, or (D) make any capital expenditure or commitment in excess of $250,000;

(vi) enter into any Contract with a labor union or collective bargaining agreement;

(vii) acquire any material asset nor sell, lease, or otherwise irrevocably dispose of any of its assets or properties, or grant any Encumbrance with respect to such assets or properties, in each case, other than in the Ordinary Course of Business;

(viii) (A) make, change or revoke any material Tax election, (B) file any material amendment to any Tax Return, (C) adopt or change any accounting method in respect of Taxes, (D) change any annual Tax accounting period, (E) enter into any Tax allocation agreement, Tax sharing agreement or Tax indemnity agreement, other than commercial contracts entered into in the Ordinary Course of Business with vendors, customers or landlords, (F) enter into any closing agreement with respect to any Tax, (G) settle or compromise any claim, notice, audit report or assessment in respect of material Taxes, (H) apply for or enter into any ruling from any Tax authority with respect to Taxes, (I) surrender any right to claim a material Tax refund, or (J) consent to any extension or waiver of the statute of limitations period applicable to any material Tax claim or assessment; or

(ix) agree, resolve or commit to do any of the foregoing.

4.4 Notification of Certain Matters.

(a) During the Pre-Closing Period, Signal shall:

(i) promptly notify Miragen of: (A) any notice or other communication from any Person alleging that the Consent of such Person is or may be required in connection with any of the Contemplated Transactions; (B) any Legal Proceeding against, relating to, involving or otherwise affecting Signal, or to the Knowledge of Signal, any director or officer of Signal, that is commenced or asserted against, or, to the Knowledge of Signal, threatened against, Signal or any director or officer of Signal; and (C) any notice or other communication from any Person alleging that any payment or other obligation is or will be owed to such Person at any time before or after the date of this Agreement, except for invoices or other communications related to agreements or dealings in the Ordinary Course of Business or payments or obligations identified in this Agreement, including the Signal Disclosure Schedule; and

(ii) promptly notify Miragen in writing of: (A) the discovery by Signal of any event, condition, fact or circumstance that occurred or existed on or prior to the date of this Agreement and that caused or constitutes an inaccuracy in any representation or warranty made by Signal in this Agreement in a manner that causes the condition set forth in Section 8.1 not to be satisfied; (B) any event, condition, fact or circumstance that occurs, arises or exists after the date of this Agreement and that would cause or constitute an inaccuracy in any representation or warranty made by Signal in this Agreement in a manner that causes the condition set forth in Section 8.1 not to be satisfied if: (1) such representation or warranty had been made as of the time of the occurrence, existence or discovery of such event, condition, fact or circumstance; or (2) such event, condition, fact or circumstance had occurred, arisen or existed on or prior to the date of this Agreement; (C) any breach of any covenant or obligation of Signal in a manner that causes the condition set forth in Section 8.2 not to be satisfied; and (D) any event, condition, fact or circumstance that would reasonably be expected to make the timely satisfaction of any of the conditions set forth in Article 6, Article 7, or Article 8 impossible or materially less likely. No notification given to Miragen pursuant to this Section 4.4(a) shall change, limit or otherwise affect any of the representations, warranties, covenants or obligations of Signal contained in this Agreement or the Signal Disclosure Schedule for purposes of Section 8.1.

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(b) During the Pre-Closing Period, Miragen shall:

(i) promptly notify Signal of: (A) any notice or other communication from any Person alleging that the Consent of such Person is or may be required in connection with any of the Contemplated Transactions; (B) any Legal Proceeding against, relating to, involving or otherwise affecting Miragen or any of its Subsidiaries, or to the Knowledge of Miragen, any director or officer of Miragen, that is commenced or asserted against, or, to the Knowledge of Miragen, threatened against, Miragen, any of its Subsidiaries, or any director or officer of Miragen; and (C) any notice or other communication from any Person alleging that any payment or other obligation is or will be owed to such Person at any time before or after the date of this Agreement, except for invoices or other communications related to agreements or dealings in the Ordinary Course of Business or payments or obligations identified in this Agreement; and

(ii) promptly notify Signal in writing, of: (i) the discovery by Miragen of any event, condition, fact or circumstance that occurred or existed on or prior to the date of this Agreement and that caused or constitutes an inaccuracy in any representation or warranty made by Miragen in this Agreement in a manner that causes the condition set forth in Section 7.1 not to be satisfied; (ii) any event, condition, fact or circumstance that occurs, arises or exists after the date of this Agreement and that would cause or constitute an inaccuracy in any representation or warranty made by Miragen in this Agreement in a manner that causes the condition set forth in Section 7.1 not to be satisfied if: (A) such representation or warranty had been made as of the time of the occurrence, existence or discovery of such event, condition, fact or circumstance; or (B) such event, condition, fact or circumstance had occurred, arisen or existed on or prior to the date of this Agreement; (iii) any breach of any covenant or obligation of Miragen in a manner that causes the condition set forth in Section 7.2 not to be satisfied; and (iv) any event, condition, fact or circumstance that would reasonably be expected to make the timely satisfaction of any of the conditions set forth in Article 6, Article 7, or Article 8 impossible or materially less likely. No notification given to Signal pursuant to this Section 4.4(b) shall change, limit or otherwise affect any of the representations, warranties, covenants or obligations of Miragen contained in this Agreement or the Miragen Disclosure Schedule for purposes of Section 7.1.

4.5 No Solicitation.

(a) Each Party agrees that neither it nor any of its Subsidiaries shall, nor shall it nor any of its Subsidiaries authorize or permit any of the Representatives retained by it or any of its Subsidiaries to directly or indirectly: (i) solicit, initiate, respond to or take any action to facilitate or encourage any inquiries or the communication, making, submission or announcement of any Acquisition Proposal or Acquisition Inquiry or take any action that could reasonably be expected to lead to an Acquisition Proposal or Acquisition Inquiry; (ii) enter into or participate in any discussions or negotiations with any Person with respect to any Acquisition Proposal or Acquisition Inquiry; (iii) furnish any information regarding such Party to any Person in connection with, in response to, relating to or for the purpose of assisting with or facilitating an Acquisition Proposal or Acquisition Inquiry; (iv) approve, endorse or recommend any Acquisition Proposal (subject to Sections 5.2 and 5.3); (v) execute or enter into any letter of intent or similar document or any Contract contemplating or otherwise relating to any Acquisition Transaction (an ***Acquisition Agreement***); or (vi) grant any waiver or release under any confidentiality, standstill or similar agreement (other than to the other Party).

(b) Notwithstanding anything contained in Section 4.5(a), prior to receipt of the Required Miragen Stockholder Vote, in the case of Miragen, or the Required Signal Stockholder Vote, in the case of Signal, (i) such Party may enter into discussions or negotiations with, any Person that has made (and not withdrawn) a bona fide, unsolicited, Acquisition Proposal, which such Party s Board of Directors determines in good faith, after consultation with its independent financial advisor, if any, and its outside legal counsel, constitutes, or would reasonably be expected to result in, a Superior Offer, and (ii) thereafter furnish to such Person non-public information regarding such Party pursuant to an

executed confidentiality agreement containing provisions (including nondisclosure provisions, use restrictions, non-solicitation provisions, no hire provisions and standstill provisions) at least as favorable to such Party as those contained in the Confidentiality Agreement,

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but in each case of the foregoing clauses (i) and (ii), only if: (A) neither such Party nor any Representative of such Party has breached this Section 4.5; (B) the Board of Directors of such Party determines in good faith based on the advice of outside legal counsel, that the failure to take such action would reasonably be expected to result in a breach of the fiduciary duties of the Board of Directors of such Party under applicable Legal Requirements; (C) at least five Business Days prior to furnishing any such non-public information to, or entering into discussions with, such Person, such Party gives the other Party written notice of the identity of such Person and of such Party s intention to furnish nonpublic information to, or enter into discussions with, such Person; and (D) at least five Business Days prior to furnishing any such non-public information to such Person, such Party furnishes such non-public information to Miragen or Signal, as applicable (to the extent such non-public information has not been previously furnished by such Party to Miragen or Signal, as applicable). Without limiting the generality of the foregoing, each Party acknowledges and agrees that, in the event any Representative of such Party (whether or not such Representative is purporting to act on behalf of such Party) takes any action that, if taken by such Party, would constitute a breach of this Section 4.5 by such Party, the taking of such action by such Representative shall be deemed to constitute a breach of this Section 4.5 by such Party for purposes of this Agreement.

(c) If any Party or any Representative of such Party receives an Acquisition Proposal or Acquisition Inquiry at any time during the Pre-Closing Period, then such Party shall promptly (and in no event later than 24 hours after such Party becomes aware of such Acquisition Proposal or Acquisition Inquiry) advise the other Party orally and in writing of such Acquisition Proposal or Acquisition Inquiry (including the identity of the Person making or submitting such Acquisition Proposal or Acquisition Inquiry, and the terms thereof). Such Party shall keep the other Party fully informed, on a current basis, in all material respects with respect to the status and terms of any such Acquisition Proposal or Acquisition Inquiry and any modification or proposed modification thereto. In addition to the foregoing, each Party shall provide the other Party with at least five Business Days written notice of a meeting of its board of directors (or any committee thereof) at which its board of directors (or any committee thereof) is reasonably expected to consider an Acquisition Proposal or Acquisition Inquiry it has received.

(d) Each Party shall and shall cause its respective Representatives to, cease immediately and cause to be terminated, and shall not authorize or knowingly permit any of its or their Representatives to continue, any and all existing activities, discussions or negotiations, if any, with any third party conducted prior to the date hereof with respect to any Acquisition Proposal and shall use its reasonable best efforts to cause any such third party (or its Representatives) in possession of non-public information in respect of such Party or its Subsidiaries that was furnished by or on behalf of such Party or its Subsidiaries to return or destroy (and confirm destruction of) all such information.

ARTICLE 5. ADDITIONAL AGREEMENTS OF THE PARTIES

5.1 Registration Statement; Proxy Statement / Prospectus / Information Statement.

(a) As promptly as practicable after the date of this Agreement, the Parties shall prepare and cause to be filed with the SEC the Proxy Statement / Prospectus / Information Statement and Signal shall prepare and cause to be filed with the SEC the Form S-4 Registration Statement, in which the Proxy Statement / Prospectus / Information Statement will be included as a prospectus.

(b) Signal covenants and agrees that the Proxy Statement / Prospectus / Information Statement, including any pro forma financial statements included therein (and the letter to stockholders, notice of meeting and form of proxy included therewith), will not, at the time that the Proxy Statement / Prospectus / Information Statement or any amendment or supplement thereto is filed with the SEC or is first mailed to the Signal Stockholders, at the time of the Signal Stockholders Meeting and at the Effective Time, contain any untrue statement of a material fact or omit to state any material fact required to be stated therein or necessary in order to make the statements made therein, in light of the

circumstances under which they were made, not misleading.

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Notwithstanding the foregoing, Signal makes no covenant, representation or warranty with respect to statements made in the Proxy Statement / Prospectus / Information Statement (and the letter to stockholders, notice of meeting and form of proxy included therewith), if any, based on information furnished in writing by Miragen specifically for inclusion therein. Each of the Parties shall use commercially reasonable efforts to cause the Form S-4 Registration Statement and the Proxy Statement / Prospectus / Information Statement to comply with the applicable rules and regulations promulgated by the SEC in all material respects.

(c) Signal shall notify Miragen promptly of the receipt of any comments from the SEC or the staff of the SEC and of any request by the SEC or the staff of the SEC for amendments or supplements to the Proxy Statement / Prospectus / Information Statement or the Form S-4 Registration Statement or for additional information and shall supply Miragen with copies of (i) all correspondence between Signal or any of its Representatives, on the one hand, and the SEC or the staff of the SEC, on the other hand, with respect to the Proxy Statement / Prospectus / Information Statement, the Form S-4 Registration Statement or the Contemplated Transactions and (ii) all orders of the SEC relating to the Form S-4 Registration Statement. Signal shall use its commercially reasonable efforts to respond as promptly as reasonably practicable to any comments of the SEC or the staff of the SEC with respect to the Proxy Statement / Prospectus / Information Statement and Form S-4 Registration Statement, and Miragen and its counsel a reasonable opportunity to participate in the formulation of any response to any such comments of the SEC or its staff. Prior to the Form S-4 Registration Statement being declared effective, (1) Miragen shall use its reasonable best efforts to execute and deliver to Cooley LLP (***Cooley***) and to Pillsbury Winthrop Shaw Pittman LLP (***Pillsbury***) the applicable Tax Representation Letter referenced in Section 5.11(c); and (2) Signal shall use its reasonable best efforts to execute and deliver to Pillsbury and to Cooley the applicable Tax Representation Letter referenced in Section 5.11(c). Following the delivery of the Tax Representation Letters pursuant to the preceding sentence, (A) Miragen shall use its commercially reasonable efforts to cause Cooley to deliver to it a tax opinion satisfying the requirements of Item 601 of Regulation S-K under the Securities Act; and (B) Signal shall use its commercially reasonable efforts to cause Pillsbury to deliver to it a tax opinion satisfying the requirements of Item 601 of Regulation S-K under the Securities Act. In rendering such opinions, each of such counsel shall be entitled to rely on the Tax Representation Letters referred to in this Section 5.1(c) and Section 5.11(c). Signal shall use its commercially reasonable efforts to have the Form S-4 Registration Statement declared effective by the SEC under the Securities Act as promptly as practicable after it is filed with the SEC. No filing of, or amendment or supplement to, the Form S-4 Registration Statement will be made by Signal, and no filing of, or amendment or supplement to, the Proxy Statement / Prospectus / Information Statement will be made by Signal, in each case, without providing Miragen a reasonable opportunity to review and comment thereon. Each Party shall promptly furnish to the other Party all information concerning such Party and such Party s Subsidiaries and such Party s stockholders that may be required or reasonably requested in connection with any action contemplated by this Section 5.1. If any event relating to Miragen occurs, or if Miragen becomes aware of any information, that should be disclosed in an amendment or supplement to the Form S-4 Registration Statement or the Proxy Statement / Prospectus / Information Statement, then Miragen shall promptly inform Signal thereof and shall cooperate fully with Signal in filing such amendment or supplement with the SEC and, if appropriate, in mailing such amendment or supplement to Signal s stockholders.

(d) Prior to the Effective Time, Signal shall use commercially reasonable efforts to obtain all regulatory approvals needed to ensure that the Signal Common Stock to be issued in the Merger shall be registered or qualified or exempt from registration or qualification under the securities law of every jurisdiction of the United States in which any registered holder of Miragen Capital Stock has an address of record on the record date for determining the stockholders entitled to notice of and to vote pursuant to the Miragen Stockholder Written Consent.

(e) Miragen shall reasonably cooperate with Signal and provide, and require its Representatives to provide, Signal and its Representatives with all true, correct and complete information regarding Miragen that is required by applicable Legal Requirements to be included in the Form S-4 Registration Statement or reasonably requested from Miragen to

be included in the Form S-4 Registration Statement.

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5.2 Miragen Stockholder Written Consent.

(a) Promptly after the S-4 Registration Statement has been declared effective by the SEC under the Securities Act, and in any event no later than five Business Days thereafter, Miragen shall obtain the Miragen Stockholder Written Consent for purposes of (i) adopting this Agreement, and approving the Merger, the Preferred Stock Conversion, the Miragen Pre-Closing Financing, and the other actions contemplated by this Agreement (the ***Miragen Stockholder Matters***); (ii) acknowledging that the approval given thereby is irrevocable and that such stockholder is aware of its rights to demand appraisal for its shares pursuant to Section 262 of the DGCL, a copy of which was attached thereto, and that such stockholder has received and read a copy of Section 262 of the DGCL; and (iii) acknowledging that by its approval of the Merger it is not entitled to appraisal rights with respect to its shares in connection with the Merger and thereby waives any rights to receive payment of the fair value of its capital stock under the DGCL.

(b) Miragen agrees that, subject to Section 5.2(c): (i) the Miragen Board of Directors shall recommend that Miragen Stockholders vote to approve the Miragen Stockholder Matters (the ***Miragen Board Recommendation***) and shall use commercially reasonable efforts to solicit such approval within the time set forth in Section 5.2(a); and (ii) (A) the Miragen Board Recommendation shall not be withdrawn or modified in a manner adverse to Signal, and no resolution by the Miragen Board of Directors or any committee thereof to withdraw or modify the Miragen Board Recommendation in a manner adverse to Signal shall be adopted or proposed and (B) the Miragen Board of Directors shall not recommend any Acquisition Transaction (collectively an ***Miragen Board Adverse Recommendation Change***).

(c) Notwithstanding the foregoing, at any time prior to the receipt of the Required Miragen Stockholder Vote, the Miragen Board of Directors may make an Miragen Board Adverse Recommendation Change, if: (i) the Miragen Board of Directors has received an Acquisition Proposal that the Miragen Board of Directors has determined in its reasonable, good faith judgment, after consultation with Miragen s outside legal counsel, constitutes a Superior Offer or (ii) as a result of a material development or change in circumstances (other than an Acquisition Proposal) that affects the business, assets or operations of Miragen that occurs or arises after the date of this Agreement that was neither known to Miragen or the Miragen Board of Directors nor reasonably foreseeable as of the date of this Agreement (an ***Miragen Intervening Event***), the Miragen Board of Directors determines in its reasonable, good faith judgment, after consultation with Miragen s outside legal counsel, that an Miragen Board Adverse Recommendation Change is required in order for the Miragen Board of Directors to comply with its fiduciary obligations to the Miragen Stockholders under applicable Legal Requirements; *provided, however*, that prior to Miragen taking any action permitted under this Section 5.2(c), (A) in the case of a Superior Offer, (1) Miragen must promptly notify Signal, in writing, at least five Business Days (the ***Notice Period***) before making an Miragen Board Adverse Recommendation Change, of its intention to take such action with respect to a Superior Offer, which notice shall state expressly that Miragen has received an Acquisition Proposal that the Miragen Board of Directors intends to declare a Superior Offer and that the Miragen Board of Directors intends to make an Miragen Board Adverse Recommendation Change, and (2) Miragen attaches to such notice the most current version of the proposed agreement (which version shall be updated on a prompt basis) and the identity of the third party making such Superior Offer; or (B) in the case of an Miragen Intervening Event, Miragen promptly notifies Signal, in writing, within the Notice Period before making an Miragen Board Adverse Recommendation Change, which notice shall state expressly the material facts and circumstances related to the applicable Miragen Intervening Event and that the Miragen Board of Directors intends to make an Miragen Adverse Recommendation Change.

(d) Unless the Miragen Board of Directors has effected an Miragen Board Adverse Recommendation Change in accordance with Section 5.2(c), Miragen s obligation to solicit the consent of its stockholders to sign the Miragen Stockholder Written Consent in accordance with Section 5.2(a) shall not be limited or otherwise affected by the commencement, disclosure, announcement or submission of any Superior Offer or other Acquisition Proposal, or by

any withdrawal or modification of the Miragen Board Recommendation.

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5.3 Signal Stockholders Meeting.

(a) Promptly after the Form S-4 Registration Statement has been declared effective by the SEC under the Securities Act, Signal shall (i) take all action necessary under applicable Legal Requirements to call, give notice of and hold a meeting of the holders of Signal Common Stock for the purpose of seeking approval of (A) the issuance of shares of Signal Common Stock to the Miragen Stockholders pursuant to the terms of this Agreement, (B) the change of control of Signal resulting from the Merger, (C) if requested by Miragen prior to the filing with the SEC of the Proxy Statement / Prospectus / Information Statement, the amendment of Signal s certificate of incorporation to effect the Miragen Reverse Split, (D) if requested by Miragen prior to the filing with the SEC of the Proxy Statement / Prospectus / Information Statement, the amendment of Signal s certificate of incorporation to increase the authorized shares of Signal Common Stock, (E) the conversion of the LeBow Note into shares of Signal s common stock immediately prior to the Closing, (F) the sale of all of Signal s intellectual property assets related to the Lab Business, (G) the amendment of Signal s certificate of incorporation to effect the name change of Signal, (H) the 2016 Equity Incentive Plan attached hereto as Exhibit F and the share reserve recommended by the Miragen Board of Directors or a committee thereof, (I) the 2016 Employee Stock Purchase Plan attached hereto as Exhibit G and the share reserve recommended by the Miragen Board of Directors or a committee thereof, (J) in accordance with Section 14A of the Exchange Act and the applicable SEC rules issued thereunder, seeking advisory approval of a proposal to the Signal Stockholders for a non-binding, advisory vote to approve certain compensation that may become payable to Signal s named executed officers in connection with the completion of the Merger, if applicable (the matters contemplated by the foregoing clauses (A) (J), collectively, the ***Signal Stockholder Matters***), and (K) the amendment of Signal s certificate of incorporation for the purpose of prohibiting the ability of Signal Stockholders to act by written consent (the matters contemplated by the foregoing clause (K), the ***Other Signal Stockholder Matters***); and (ii) mail to the Signal Stockholders as of the record date established for stockholders meeting of Signal, the Proxy Statement / Prospectus / Information Statement; *provided, however,* that in no event shall such meeting take place more than 60 calendar days after the date the S-4 Registration Statement is declared effective by the SEC (such meeting, the ***Signal Stockholders Meeting***).

(b) Signal agrees that, subject to Section 5.3(c): (i) the Signal Board of Directors shall recommend that the holders of Signal Common Stock vote to approve the Signal Stockholder Matters and the Other Signal Stockholder Matters; (ii) the Proxy Statement / Prospectus / Information Statement shall include a statement to the effect that the Signal Board of Directors recommends that Signal Stockholders vote to approve the Signal Stockholder Matters and the Other Signal Stockholder Matters (the ***Signal Board Recommendation***); (iii) the Signal Board of Directors shall use commercially reasonable efforts to solicit such approval within the timeframe set forth in Section 5.3(a) above; and (iv) (A) the Signal Board Recommendation shall not be withdrawn or modified in a manner adverse to Miragen, and no resolution by the Signal Board of Director or any committee thereof to withdraw or modify the Signal Board Recommendation in a manner adverse to Miragen shall be adopted or proposed and (B) the Signal Board of Directors shall not recommend any Acquisition Transaction (collectively a ***Signal Board Adverse Recommendation Change***).

(c) Notwithstanding the foregoing, at any time prior to the receipt of the Required Signal Stockholder Vote, the Signal Board of Directors may make a Signal Board Adverse Recommendation Change, if: (i) the Signal Board of Directors has received an Acquisition Proposal that the Signal Board of Directors has determined in its reasonable, good faith judgment, after consultation with Signal s outside legal counsel, constitutes a Superior Offer or (ii) as a result of a material development or change in circumstances (other than an Acquisition Proposal) that affects the business, assets or operations of Signal that occurs or arises after the date of this Agreement that was neither known to Signal or the Signal Board of Directors nor reasonably foreseeable as of the date of this Agreement (a ***Signal Intervening Event***), the Signal Board of Directors determines in its reasonable, good faith judgment, after consultation with Signal s outside legal counsel, that a Signal Board Adverse Recommendation Change is required in order for the Signal Board of Directors to comply with its fiduciary obligations to the Signal Stockholders under applicable Legal Requirements;

provided, however, that prior to Signal taking any action permitted under this Section 5.3(c), (A) in the case of a Superior Offer, (1)

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Signal must promptly notify Miragen, in writing, within the Notice Period before making a Signal Board Adverse Recommendation Change, of its intention to take such action with respect to a Superior Offer, which notice shall state expressly that Signal has received an Acquisition Proposal that the Signal Board of Directors intends to declare a Superior Offer and that the Signal Board of Directors intends to make a Signal Board Adverse Recommendation Change, and (2) Signal attaches to such notice the most current version of the proposed agreement (which version shall be updated on a prompt basis) and the identity of the third party making such Superior Offer; or (B) in the case of a Signal Intervening Event, Signal promptly notifies Miragen, in writing, within the Notice Period before making a Signal Board Adverse Recommendation Change, which notice shall state expressly the material facts and circumstances related to the applicable Signal Intervening Event and that the Signal Board of Directors intends to make a Signal Adverse Recommendation Change.

(d) Unless the Signal Board of Directors has effected a Signal Board Adverse Recommendation Change in accordance with Section 5.3(c), Signal s obligation to call, give notice of and hold the Signal Stockholders Meeting in accordance with Section 5.3(a) shall not be limited or otherwise affected by the commencement, disclosure, announcement or submission of any Superior Offer or Acquisition Proposal, or by any withdrawal or modification of the Signal Board Recommendation.

(e) Nothing contained in this Agreement shall prohibit Signal or its Board of Directors from (i) taking and disclosing to the Signal Stockholders a position as contemplated by Rule 14e-2(a) under the Exchange Act or complying with the provisions of Rule 14d-9 under the Exchange Act (other than Rule 14d-9(f) under the Exchange Act), (ii) making any disclosure to the Signal Stockholders if the Signal Board of Directors determines in good faith, after consultation with its outside legal counsel, that the failure to make such disclosure would be inconsistent with its fiduciary duties to the Signal Stockholders under applicable Legal Requirements, and (iii) making a stop, look and listen communication to the Signal Stockholders pursuant to Rule 14d-9(f) under the Exchange Act, *provided, however,* that (A) in the case of each of the foregoing clauses (i) and (ii), any such disclosure or public statement shall be deemed to be a Signal Board Adverse Recommendation Change subject to the terms and conditions of this Agreement unless the Signal Board of Directors reaffirms the Signal Board Recommendation in such disclosure or public statement or within five Business Days of such disclosure or public statement; (B) in the case of clause (iii), any such disclosure or public statement shall be deemed to be a Signal Board Adverse Recommendation Change subject to the terms and conditions of this Agreement unless the Signal Board of Directors reaffirms the Signal Board Recommendation in such disclosure or public statement or within 10 Business Days of such disclosure or public statement; and (C) Signal shall not affect a Signal Board Adverse Recommendation Change unless specifically permitted pursuant to the terms of Section 5.3(c).

5.4 Regulatory Approvals.

(a) Each Party shall use commercially reasonable efforts to take, or cause to be taken, all actions necessary to comply promptly with all Legal Requirements that may be imposed on such Party with respect to the Contemplated Transactions and, subject to the conditions set forth in Article 6 hereof, to consummate the Contemplated Transactions, as promptly as practicable. In furtherance and not in limitation of the foregoing, each Party hereto agrees to file or otherwise submit, as soon as practicable after the date of this Agreement, but in any event no later than 10 Business Days of the date hereof, all applications, notices, reports and other documents reasonably required to be filed by such Party with or otherwise submitted by such Party to any Governmental Body with respect to the Contemplated Transactions, and to submit promptly any additional information requested by any such Governmental Body. Without limiting the generality of the foregoing, the Parties shall prepare and file, if and as required, (a) the Notification and Report Forms pursuant to the HSR Act and (b) any notification or other document to be filed in connection with the Merger under any applicable foreign Legal Requirement relating to antitrust or competition matters. Miragen and Signal shall respond as promptly as is practicable to respond in compliance with: (i) any inquiries or requests received from the Federal Trade Commission or the Department of Justice for additional information or documentation; and (ii)

any inquiries or requests received from any state attorney general, foreign antitrust or competition authority or other Governmental Body in connection with antitrust or competition matters.

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(b) Each of the Parties shall use its commercially reasonable efforts to (i) cooperate in all respects with each other in connection with timely making all required filings and submissions and timely obtaining all related consents, permits, authorizations or approvals pursuant to Section 5.4(a); and (ii) keep Miragen or Signal, as applicable, informed in all material respects and on a reasonably timely basis of any communication received by such Party from, or given by such Party to, the Federal Trade Commission, the Department of Justice or any other Governmental Body relating to the Contemplated Transactions. Subject to applicable Legal Requirements relating to the exchange of information, each Party shall, to the extent practicable, give the other party reasonable advance notice of all material communications with any Governmental Body relating to the Contemplated Transactions and each Party shall have the right to attend or participate in material conferences, meetings and telephone or other communications between the other Parties and regulators concerning the Contemplated Transactions.

(c) Notwithstanding Sections 5.4(a) through 5.4(b) or any other provision of this Agreement to the contrary, in no event shall either Party be required to agree to (i) divest, license, hold separate or otherwise dispose of, encumber or allow a third party to utilize, any portion of its or their respective businesses, assets or contracts or (ii) take any other action that may be required or requested by any Governmental Body in connection with obtaining the consents, authorizations, orders or approvals contemplated by this Section 5.4 that, would have an adverse impact, in any material respect, on any of the Parties.

5.5 Miragen Options and Warrants.

(a) Subject to Section 5.5(c), at the Effective Time, each Miragen Option that is outstanding and unexercised immediately prior to the Effective Time under the 2008 Plan, whether or not vested, shall be assumed by Signal and converted into an option to purchase Signal Common Stock, and Signal shall assume the 2008 Plan and each such Miragen Option in accordance with the terms (as in effect as of the date of this Agreement) of the 2008 Plan and the terms of the stock option agreement by which such Miragen Option is evidenced. All rights with respect to Miragen Common Stock under Miragen Options assumed by Signal shall thereupon be converted into rights with respect to Signal Common Stock. Accordingly, from and after the Effective Time: (i) each Miragen Option assumed by Signal may be exercised solely for shares of Signal Common Stock; (ii) the number of shares of Signal Common Stock subject to each Miragen Option assumed by Signal shall be determined by multiplying (A) the number of shares of Miragen Common Stock that were subject to such Miragen Option, as in effect immediately prior to the Effective Time, by (B) the Exchange Ratio and rounding the resulting number down to the nearest whole number of shares of Signal Common Stock; (iii) the per share exercise price for the Signal Common Stock issuable upon exercise of each Miragen Option assumed by Signal shall be determined by dividing (A) the per share exercise price of Miragen Common Stock subject to such Miragen Option, as in effect immediately prior to the Effective Time, by (B) the Exchange Ratio and rounding the resulting exercise price up to the nearest whole cent; and (iv) any restriction on the exercise of any Miragen Option assumed by Signal shall continue in full force and effect and the term, exercisability, vesting schedule and other provisions of such Miragen Option shall otherwise remain unchanged; *provided, however*, that: (A) to the extent provided under the terms of an Miragen Option, such Miragen Option assumed by Signal in accordance with this Section 5.5(a) shall, in accordance with its terms, be subject to further adjustment as appropriate to reflect any stock split, division or subdivision of shares, stock dividend, reverse stock split, consolidation of shares, reclassification, recapitalization or other similar transaction with respect to Signal Common Stock subsequent to the Effective Time; and (B) the Signal Board of Directors or a committee thereof shall succeed to the authority and responsibility of the Miragen Board of Directors or any committee thereof with respect to each Miragen Option assumed by Signal. Notwithstanding anything to the contrary in this Section 5.5(a), the conversion of each Miragen Option (regardless of whether such option qualifies as an incentive stock option within the meaning of Section 422 of the Code) into an option to purchase shares of Signal Common Stock shall be made in a manner consistent with Treasury Regulation Section 1.424-1, such that the conversion of an Miragen Option shall not constitute a modification of such Miragen Option for purposes of Section 409A or Section 424 of the Code.

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(b) Signal shall file with the SEC, no later than 30 calendar days after the Effective Time, a registration statement on Form S-8, if available for use by Signal, relating to the shares of Signal Common Stock issuable with respect to Miragen Options assumed by Signal in accordance with Section 5.5(a).

(c) At the Effective Time, each Miragen Warrant that is outstanding and unexercised immediately prior to the Effective Time (for the avoidance of doubt, excluding Miragen Warrants that are deemed to have been automatically exercised pursuant to their terms as a result of the consummation of the Merger), if any, shall be converted into and become a warrant to purchase Signal Common Stock and Signal shall assume each such Miragen Warrant in accordance with its terms. All rights with respect to Miragen Common Stock or Miragen Preferred Stock under Miragen Warrants assumed by Signal shall thereupon be converted into rights with respect to Signal Common Stock. Accordingly, from and after the Effective Time: (i) each Miragen Warrant assumed by Signal may be exercised solely for shares of Signal Common Stock; (ii) the number of shares of Signal Common Stock subject to each Miragen Warrant assumed by Signal shall be determined by multiplying (A) the number of shares of Miragen Common Stock, or the number of shares of Miragen Common Stock issuable upon conversion of the shares of Miragen Preferred Stock issuable upon exercise of the Miragen Warrant, as applicable, that were subject to such Miragen Warrant immediately prior to the Effective Time by (B) the Exchange Ratio and rounding the resulting number down to the nearest whole number of shares of Signal Common Stock; (iii) the per share exercise price for the Signal Common Stock issuable upon exercise of each Miragen Warrant assumed by Signal shall be determined by dividing the per share exercise price of Miragen Common Stock or Miragen Preferred Stock subject to such Miragen Warrant, as in effect immediately prior to the Effective Time, by the Exchange Ratio and rounding the resulting exercise price up to the nearest whole cent; and (iv) any restriction on any Miragen Warrant assumed by Signal shall continue in full force and effect and the term and other provisions of such Miragen Warrant shall otherwise remain unchanged.

(d) Prior to the Effective Time, Miragen shall take all actions that may be necessary (under the Miragen Stock Option Plans, the Miragen Warrants and otherwise) to effectuate the provisions of this Section 5.5 and to ensure that, from and after the Effective Time, holders of Miragen Options and Miragen Warrants have no rights with respect thereto other than those specifically provided in this Section 5.5.

5.6 Signal Employee and Benefits Matters; Signal Options.

(a) Unless otherwise agreed in writing by Miragen pursuant to written notice provided to Signal no later than three calendar days prior to the Closing Date, effective no later than the Business Day immediately prior to the Closing Date, Signal shall, and shall cause any of its Subsidiaries to, terminate the employment and service of each Signal Associate (the ***Terminated Signal Associates***) such that neither Signal nor any Signal Subsidiary shall have any Signal Associate in its employ or service as of the Effective Time. As a condition to payment of any Terminated Signal Associate Payment to a Terminated Signal Associate and prior to the Closing Date, Signal will use commercially reasonable efforts to obtain from each Terminated Signal Associate an effective release of claims in a form approved by Miragen, which approval shall not be unreasonably withheld, conditioned or delayed. Prior to the Closing, Signal shall use commercially reasonable efforts to comply, in all material respects, with all of the requirements of the WARN Act and any applicable state Legal Requirement equivalent with respect to the Terminated Signal Associates. Schedule 5.6(a)(ii) sets forth, with respect to each Terminated Signal Associate, Signal s good faith estimate of the amount of all change of control payments, severance payments, termination or similar payments, retention payments, bonuses and other payments and benefits (including any COBRA costs), owed to or to be paid or provided to each Terminated Signal Associate, and the amount by which any of such Terminated Signal Associate s compensation or benefits may be accelerated or increased, in each case, whether under any Signal Employee Plan or otherwise, as a result of (i) the execution of this Agreement, (ii) the consummation of the Contemplated Transactions, or (iii) the termination of employment or service of such Terminated Signal Associate (together, the ***Terminated Signal Associate Payments***). Prior to the Closing, Signal shall cause all Terminated Signal Associate Payments to be

paid and satisfied in full such that Signal, the Surviving Corporation, Miragen and any of their Affiliates shall not have any Liability with respect to the Terminated Signal Associate on or following the Effective Time.

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(b) Each Signal Option that is outstanding and unexercised immediately prior to the Effective Time, whether under the 2014 Plan or otherwise, whether or not vested or exercisable, and each Signal RSU that is outstanding and has not been settled as of the Effective Time, whether under the 2014 Plan or otherwise, shall be canceled and extinguished at the Effective Time without the right to receive any consideration (the ***Terminated Signal Options and RSUs***). Prior to the Effective Time, the Signal Board of Directors will adopt appropriate resolutions (which draft resolutions shall be provided to Miragen for reasonable review and approval by Miragen prior to adoption by the Signal Board of Directors and no later than five calendar days prior to the Closing Date) and will have taken all other actions necessary and appropriate (under the 2014 Plan, the Signal Options, the Signal RSUs and otherwise) to effectuate the provisions of this Section 5.6(b) and to ensure that, from and after the Effective Time, holders of Signal Options and Signal RSUs have no rights with respect thereto.

(c) Effective no later than the day immediately preceding the Closing Date, Signal shall terminate (i) all Signal Employee Plans that are employee benefit plans within the meaning of ERISA, including but not limited to any Signal Employee Plans intended to include a Code Section 401(k) arrangement (each, a ***Signal 401(k) Plan***), and (ii) each other Signal Employee Plan set forth on Schedule 5.6(c) attached hereto unless written notice is provided by Miragen to Signal no later than three calendar days prior to the Closing Date, instructing Signal not to terminate any such Signal Employee Plan. Signal shall provide Miragen with evidence that such Signal Employee Plan(s) have been terminated (effective no later than the day immediately preceding the Closing Date) pursuant to resolutions of the Signal Board of Directors. The form and substance of such resolutions shall be subject to review and approval of Miragen. Signal also shall take such other actions in furtherance of terminating such Signal Employee Plan(s) as Miragen may reasonably require. In the event that termination of the Signal 401(k) Plans would reasonably be anticipated to trigger liquidation charges, surrender charges or other fees then Signal shall take such actions as are necessary to reasonably estimate the amount of such charges and/or fees and provide such estimate in writing to Miragen no later than 14 calendar days prior to the Closing Date.

(d) This Section 5.6 shall be binding upon and inure solely to the benefit of each of the parties to this Agreement. Nothing in this Section 5.6, express or implied, will (i) constitute or be treated as an amendment of any Signal Employee Plan or Miragen Employee Plan (or an undertaking to amend any such plan), (ii) prohibit Signal, any Signal Affiliate, Miragen, or any Miragen Affiliate from amending, modifying or terminating any Signal Employee Plan or Miragen Employee Plan pursuant to, and in accordance with, the terms thereof, or (iii) confer any rights or benefits on any Person other than Signal and Miragen.

5.7 Indemnification of Officers and Directors.

(a) From the Effective Time through the sixth anniversary of the date on which the Effective Time occurs, each of Signal and the Surviving Corporation shall, jointly and severally, indemnify and hold harmless each person who is now, or has been at any time prior to the date hereof, or who becomes prior to the Effective Time, a director or officer of Signal or Miragen (the ***D&O Indemnified Parties***), against all claims, losses, liabilities, damages, judgments, fines and reasonable fees, costs and expenses, including attorneys fees and disbursements (collectively, ***Costs***), incurred in connection with any claim, action, suit, proceeding or investigation, whether civil, criminal, administrative or investigative, arising out of or pertaining to the fact that the D&O Indemnified Party is or was a director or officer of Signal or Miragen, whether asserted or claimed prior to, at or after the Effective Time, to the fullest extent permitted under the DGCL for directors or officers of Delaware corporations. Each D&O Indemnified Party will be entitled to advancement of expenses incurred in the defense of any such claim, action, suit, proceeding or investigation from each of Signal and the Surviving Corporation, jointly and severally, upon receipt by Signal or the Surviving Corporation from the D&O Indemnified Party of a request therefor; *provided,* that any person to whom expenses are advanced provides an undertaking, as applicable, to repay such advances if it is ultimately determined that such person is not entitled to indemnification.

(b) The certificate of incorporation and bylaws of each of Signal and the Surviving Corporation shall contain, and Signal shall cause the certificate of incorporation and bylaws of the Surviving Corporation to so

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contain, provisions no less favorable with respect to indemnification, advancement of expenses and exculpation of present and former directors and officers of each of Signal and Miragen than are presently set forth in the certificate of incorporation and bylaws of Signal and Miragen, as applicable, which provisions shall not be amended, modified or repealed for a period of six years time from the Effective Time in a manner that would adversely affect the rights thereunder of individuals who, at or prior to the Effective Time, were officers or directors of Signal or Miragen.

(c) Signal shall purchase a tail insurance policy with an effective date as of the Closing Date, which shall remain effective for six years following the Closing Date, at least the same coverage and amounts and containing the same terms and conditions that are not less favorable to the D&O Indemnified Parties.

(d) Signal shall pay all reasonable expenses, including reasonable attorneys fees, that may be incurred by the persons referred to in this Section 5.7 in connection with their enforcement of their rights provided in this Section 5.7.

(e) The provisions of this Section 5.7 are intended to be in addition to the rights otherwise available to the D&O Indemnified Parties by law, charter, statute, bylaw or agreement. The obligations of Signal under this Section 5.7 shall survive the consummation of the Merger and shall not be terminated or modified in such a manner as to adversely affect any Indemnified Party to whom this Section 5.7 applies without the consent of such affected D&O Indemnified Party (it being expressly agreed that the D&O Indemnified Parties to whom this Section 5.7 applies, as well as their heirs and representatives, shall be third party beneficiaries of this Section 5.7, each of whom may enforce the provisions of this Section 5.7).

(f) In the event Signal or the Surviving Corporation or any of their respective successors or assigns (i) consolidates with or merges into any other person and shall not be the continuing or surviving corporation or entity of such consolidation or merger, or (ii) transfers all or substantially all of its properties and assets to any person, then, and in each such case, proper provision shall be made so that the successors and assigns of Signal or the Surviving Corporation, as the case may be, shall succeed to the obligations set forth in this Section 5.7. Signal shall cause the Surviving Corporation to perform all of the obligations of the Surviving Corporation under this Section 5.7.

5.8 Additional Agreements. The Parties shall (a) use commercially reasonable efforts to cause to be taken all actions necessary to consummate the Contemplated Transactions and (b) reasonably cooperate with the other Parties and provide the other Parties with such assistance as may be reasonably requested for the purpose of facilitating the performance by each Party of its respective obligations under this Agreement and to enable the Surviving Corporation to continue to meet its obligations under this Agreement following the Closing. Without limiting the generality of the foregoing, each Party to this Agreement: (i) shall make all filings and other submissions (if any) and give all notices (if any) required to be made and given by such Party in connection with the Contemplated Transactions; (ii) shall use commercially reasonable efforts to lift any injunction prohibiting, or any other legal bar to, the Contemplated Transactions; and (iii) shall use commercially reasonable efforts to satisfy the conditions precedent to the consummation of this Agreement.

5.9 Disclosure. Without limiting Miragen s or Signal s obligations under the Confidentiality Agreement, each Party shall not, and shall not permit any of its Subsidiaries or any Representative of such Party to, issue any press release or make any disclosure (to any customers or employees of such Party, to the public or otherwise) regarding the Contemplated Transactions unless: (a) the other Party has approved such press release or disclosure in writing; or (b) such Party has determined in good faith, upon the advice of outside legal counsel, that such disclosure is required by applicable Legal Requirements and, to the extent practicable, before such press release or disclosure is issued or made, such Party advises the other Party of, and consults with the other Party regarding, the text of such press release or disclosure.

5.10 Listing. Signal shall use its commercially reasonable efforts: (a) to maintain its existing listing on the NASDAQ Capital Market and to obtain approval of the listing of the combined company on the NASDAQ

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Capital Market; (b) to effect the NASDAQ Reverse Split, (c) without derogating from the generality of the requirements of clause (a) and to the extent required by the rules and regulations of NASDAQ, to (i) prepare and submit to NASDAQ a notification form for the listing of the shares of Signal Common Stock to be issued in the Merger and Miragen Reverse Split, and (ii) to cause such shares to be approved for listing (subject to notice of issuance); and (d) to the extent required by NASDAQ Marketplace Rule 5110, to file an initial listing for the Signal Common Stock on NASDAQ Capital Market (the ***NASDAQ Listing Application***) and to cause such NASDAQ Listing Application to be approved for listing (subject to official notice of issuance). Miragen will cooperate with Signal as reasonably requested by Signal with respect to the NASDAQ Listing Application and promptly furnish to Signal all information concerning Miragen and Miragen Stockholders that may be required or reasonably requested in connection with any action contemplated by this Section 5.10.

5.11 Tax Matters.

(a) Signal, Merger Sub and Miragen shall use their respective commercially reasonable efforts to cause the Merger to qualify, and agree not to, and not to permit or cause any affiliate or any Subsidiary to, take any actions or cause any action to be taken which would reasonably be expected to prevent the Merger from qualifying, as a reorganization under Section 368(a) of the Code.

(b) This Agreement is intended to constitute, and the Parties hereby adopt this Agreement as, a plan of reorganization within the meaning of Treasury Regulations Section 1.368-2(g). The Parties shall treat and shall not take any tax reporting position inconsistent with the treatment of the Merger as a reorganization within the meaning of Section 368(a) of the Code for U.S. federal, state and other relevant Tax purposes, unless otherwise required pursuant to a determination within the meaning of Section 1313(a) of the Code.

(c) Miragen shall use its reasonable best efforts to deliver to Cooley and Pillsbury a Tax Representation Letter, dated as of the date of the tax opinions referenced in Section 5.1(c) and signed by an officer of Miragen, containing representations of Miragen, and Signal shall use its reasonable best efforts to deliver to Cooley and Pillsbury a Tax Representation Letter, dated as of the date of the tax opinions referenced in Section 5.1(c) and signed by an officer of Signal, containing representations of Signal, in each case as shall be reasonably necessary or appropriate to enable Cooley and Pillsbury to render the applicable opinions described in Section 5.1(c) of this Agreement.

5.12 Legends. Signal shall be entitled to place appropriate legends on the book entries and/or certificates evidencing any shares of Signal Common Stock to be received in the Merger by equityholders of Miragen who may be considered affiliates of Signal for purposes of Rules 144 and 145 under the Securities Act reflecting the restrictions set forth in Rules 144 and 145 and to issue appropriate stop transfer instructions to the transfer agent for Signal Common Stock.

5.13 Directors and Officers. Prior to the Effective Time, but to be effective at the Effective Time, the Signal Board of Directors shall (i) set the size of the Signal Board of Directors at eight members and elect eight designees selected by Miragen (with such designees, in the aggregate, expected to satisfy the requisite independence requirements for the Signal Board of Directors, as well as the sophistication and independence requirements for the required committees of the Signal Board of Directors, pursuant to NASDAQ s listing standards), each to serve as a member of the Signal Board of Directors, (ii) take all necessary action to appoint each of the individuals set forth on Schedule 5.13 as officers of Signal to hold the offices set forth opposite his or her name, and (iii) appoint each of the directors set forth on Schedule 5.13 to the committees of the Signal Board of Directors set forth opposite his or her name (with such director, in the aggregate, expected to satisfy the sophistication and independence requirements for the required committees of the Signal Board of Directors pursuant to NASDAQ s listing standards).

5.14 Section 16 Matters. Prior to the Effective Time, Signal shall take all such steps as may be required to cause any acquisitions of Signal Common Stock and any options to purchase Signal Common Stock resulting

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from the Contemplated Transactions, by each individual who is reasonably expected to become subject to the reporting requirements of Section 16(a) of the Exchange Act with respect to Signal, to be exempt under Rule 16b-3 promulgated under the Exchange Act.

5.15 Takeover Statutes. If any control share acquisition , fair price , moratorium or other anti-takeover Legal Requirement becomes or is deemed to applicable to Signal, Miragen, Merger Sub, or the Contemplated Transactions, then each of Signal, Miragen, Merger Sub, and their respective board of directors shall grant such approvals and take such actions as are necessary so that the Contemplated Transactions may be consummated as promptly as practicable on the terms contemplated hereby and otherwise act to render such anti-takeover Legal Requirement inapplicable to the foregoing.

5.16 Preferred Stock. Miragen shall take all action necessary to effect the conversion of Miragen Preferred Stock into Miragen Common Stock immediately prior to the Effective Time.

5.17 Termination of Certain Agreements and Rights. Miragen shall use commercially reasonable efforts to terminate, at or prior to the Effective Time, those agreements set forth on Schedule 5.17 (collectively, the ***Investor Agreements***).

5.18 Net Cash. Signal shall use commercially reasonable efforts to ensure that Net Cash (as determined pursuant to Section 1.6) is greater than or equal to (a) zero ($0) if the Closing occurs on or before December 31, 2016, (b) negative Two Hundred Thousand Dollars (-$200,000) if the Closing occurs after December 31, 2016, and on or before January 31, 2017, and (c) negative Three Hundred Thousand Dollars (-$300,000) if the Closing occurs after January 31, 2017.

ARTICLE 6. CONDITIONS PRECEDENT TO OBLIGATIONS OF EACH PARTY

The obligations of each Party to effect the Merger and otherwise consummate the transactions to be consummated at the Closing are subject to the satisfaction or, to the extent permitted by applicable Legal Requirements, the written waiver by each of the Parties, at or prior to the Closing, of each of the following conditions:

6.1 Effectiveness of Registration Statement. The Form S-4 Registration Statement has been declared effective by the SEC under the Securities Act and no stop order suspending the effectiveness of the Form S-4 Registration Statement has been issued by the SEC and no proceedings for that purpose and no similar proceeding has been initiated or, to the Knowledge of Signal, threatened by the SEC.

6.2 No Restraints. (a) No temporary restraining order, preliminary or permanent injunction or other order preventing the consummation of the Merger has been issued by any court of competent jurisdiction or other Governmental Body of competent jurisdiction and remain in effect, and there shall not be any Legal Requirement which has the effect of making the consummation of the Merger illegal; and (b) there shall be no Legal Proceeding pending, or overtly threatened in writing, by an official of a Governmental Body in which such Governmental Body indicates that it intends to conduct any Legal Proceeding or take any other action challenging or seeking to restrain or prohibit the consummation of the Merger.

6.3 Stockholder Approval. (a) Miragen has obtained the Required Miragen Stockholder Vote, (b) Signal has obtained the Required Signal Stockholder Vote, and (c) Miragen has received evidence, in form and substance satisfactory to it, that Merger Sub has obtained the Required Merger Sub Stockholder Vote.

6.4 Regulatory Matters. Any waiting period applicable to the consummation of the Merger under the HSR Act or applicable to foreign Legal Requirements relating to antitrust or competition matters has expired or been terminated, and there shall not be in effect any voluntary agreement between Signal, Merger Sub and/or Miragen, on the one hand, and the Federal Trade Commission, the Department of Justice or any foreign Governmental

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Body, on the other hand, pursuant to which such Party has agreed not to consummate the Merger for any period of time; *provided*, that neither Miragen, on the one hand, nor Signal or Merger Sub, on the other hand, shall enter into any such voluntary agreement without the written consent of all Parties.

6.5 Listing. (a) The existing shares of Signal Common Stock have been continually listed on The NASDAQ Capital Market as of and from the date of this Agreement through the Closing Date, (b) the shares of Signal Common Stock to be issued in the Merger shall be approved for listing (subject to official notice of issuance) on The NASDAQ Capital Market as of the Effective Time, and (c) to the extent required by NASDAQ Marketplace Rule 5110, the NASDAQ Listing Application has been approved for listing (subject to official notice of issuance).

ARTICLE 7. ADDITIONAL CONDITIONS PRECEDENT TO OBLIGATIONS OF SIGNAL AND MERGER SUB

The obligations of Signal and Merger Sub to effect the Merger and otherwise consummate the transactions to be consummated at the Closing are subject to the satisfaction or the written waiver by Signal, at or prior to the Closing, of each of the following conditions:

7.1 Accuracy of Representations. (a) The representations and warranties of Miragen in Section 2.4(a), Section 2.4(b), and Section 2.4(c) (Capitalization), are true and correct in all but de minimis respects as of the date of this Agreement and are true and correct in all but de minimis respects on and as of the Closing Date with the same force and effect as if made on the Closing Date, except for those representations and warranties which address matters only as of a particular date (which representations were so true and correct as of such particular date); and (b) all other representations and warranties of Miragen in Article 2 of this Agreement are true and correct as of the date of this Agreement and are true and correct on and as of the Closing Date with the same force and effect as if made on the Closing Date except (i) in each case, or in the aggregate, where the failure to be true and correct would not have an Miragen Material Adverse Effect (provided that all Miragen Material Adverse Effect qualifications and other materiality qualifications limiting the scope of the representations and warranties of Miragen in Article 2 of this Agreement will be disregarded), or (ii) for those representations and warranties which address matters only as of a particular date (which representations were so true and correct, subject to the qualifications as set forth in the preceding clause (i), as of such particular date).

7.2 Performance of Covenants. Each of the covenants and obligations in this Agreement that Miragen is required to comply with or to perform at or prior to the Closing have been complied with and performed by Miragen in all material respects.

7.3 No Miragen Material Adverse Effect. Since the date of this Agreement, there has not occurred any Miragen Material Adverse Effect that is continuing.

7.4 Preferred Stock Conversion. Miragen has effected a conversion of all shares of Miragen Preferred Stock into shares of Miragen Common Stock immediately prior to the Effective Time (the ***Preferred Stock Conversion***).

7.5 Termination of Investor Agreements. The Investor Agreements shall have been terminated.

7.6 Documents. Signal has received the following documents, each of which shall be in full force and effect as of the Closing Date:

(a) a certificate executed by the Chief Executive Officer and Chief Financial Officer of Miragen confirming that the conditions set forth in Sections 7.1, 7.2, 7.3, 7.4 and 7.5 have been duly satisfied;

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(b) (i) certificates of good standing of Miragen in its jurisdiction of organization and the various foreign jurisdictions in which it is qualified to do business, (ii) certified copies of the certificate of incorporation and bylaws of Miragen, (iii) a certificate as to the incumbency of the Chief Executive Officer and Chief Financial Officer of Miragen, and (iv) the adoption of resolutions of the Miragen Board of Directors authorizing the execution of this Agreement and the consummation of the Contemplated Transactions to be performed by Miragen hereunder;

(c) a form of notice to the Internal Revenue Service in accordance with the requirements of Treasury Regulation Section 1.897-2(h) and in form and substance reasonably acceptable to Signal along with written authorization for Signal to deliver such notice form to the Internal Revenue Service on behalf of Miragen upon the Closing; and

(d) the Allocation Certificate.

ARTICLE 8. ADDITIONAL CONDITIONS PRECEDENT TO OBLIGATIONS OF Miragen

The obligations of Miragen to effect the Merger and otherwise consummate the transactions to be consummated at the Closing are subject to the satisfaction or the written wavier by Miragen, at or prior to the Closing, of each of the following conditions:

8.1 Accuracy of Representations. (a) The representations and warranties of Signal and Merger Sub in Section 3.4(a), Section 3.4(b), Section 3.4(c), Section 3.4(e) (Capitalization), are true and correct in all but de minimis respects as of the date of this Agreement and are true and correct in all but de minimis respects on and as of the Closing Date with the same force and effect as if made on the Closing Date, except for those representations and warranties which address matters only as of a particular date (which representations were so true and correct as of such particular date); and (b) all other representations and warranties of Signal and Merger Sub in Article 3 of this Agreement are true and correct as of the date of this Agreement and are true and correct on and as of the Closing Date with the same force and effect as if made on the Closing Date except (i) in each case, or in the aggregate, where the failure to be true and correct would not have a Signal Material Adverse Effect (provided that all Signal Material Adverse Effect qualifications and other materiality qualifications limiting the scope of the representations and warranties of Signal in Article 3 of this Agreement will be disregarded), or (ii) for those representations and warranties which address matters only as of a particular date (which representations were so true and correct, subject to the qualifications as set forth in the preceding clause (i), as of such particular date).

8.2 Performance of Covenants. (a) Signal and Merger Sub will have complied with the covenants and obligations set forth in Section 4.2(b)(ii), Section 4.2(b)(xii), and Section 5.6 in all respects and (b) all of the other covenants and obligations in this Agreement that either Signal or Merger Sub is required to comply with or to perform at or prior to the Closing have been complied with and performed in all material respects.

8.3 No Signal Material Adverse Effect. Since the date of this Agreement, there has not occurred any Signal Material Adverse Effect that is continuing.

8.4 Termination of Contracts. Miragen has received evidence, in form and substance satisfactory to it, that all Signal Contracts (other than the Signal Contracts listed on Schedule 8.4) have been (a) terminated, assigned, or fully performed by Signal and (b) all obligations of Signal thereunder have been fully satisfied, waived or otherwise discharged.

8.5 Board of Directors and Officers. Signal has caused the Signal Board of Directors and the officers of Signal, to be constituted as set forth in Section 5.13 of this Agreement effective as of the Effective Time.

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8.6 Sarbanes-Oxley Certifications. Neither the principal executive officer nor the principal financial officer of Signal has failed to provide, with respect to any Signal SEC Document filed (or required to be filed) with the SEC on or after the date of this Agreement, any necessary certification in the form required under Rule 13a-14 under the Exchange Act and 18 U.S.C. §1350.

8.7 Net Cash Threshold. Signal and Miragen have agreed in writing upon the Net Cash Calculation, or the Accounting Firm has delivered its determination with respect to the Net Cash Calculation, in each case pursuant to Section 1.6, and the Net Cash is greater than or equal to negative Three Hundred Thousand Dollars (-$300,000).

8.8 Lab Business. Signal has completed, in a manner satisfactory to Miragen, the sale, divestiture and/or winding down of its Lab Business such that there are no post-Closing obligations of Signal remaining related thereto.

8.9 Satisfaction of Liabilities. Signal has satisfied all of its Liabilities as of the Closing Date and Miragen has received payoff letters or other proof of payment evidencing the satisfaction of such Liabilities and release of any Encumbrances related to such Liabilities, in form and substance satisfactory, to Miragen.

8.10 Amendment to Certificate of Incorporation. (a) Signal has effected the NASDAQ Reverse Split and has provided a file-stamped copy of the amendment to Signal s certificate of incorporation effecting the NASDAQ Reverse Split; and (b) if requested by Miragen, Signal has effected the Miragen Reverse Split and has provided file-stamped copies of the amendments to Signal s certificate of incorporation effecting the Miragen Reverse Split and increase in the number of authorized shares of Signal Common Stock.

8.11 Note Conversion. Signal has effected a conversion of the LeBow Note into shares of Signal Common Stock immediately prior to the Effective Time in accordance with the terms of the LeBow Note.

8.12 Bylaws. The Signal Board of Directors shall have approved an amendment to the bylaws of Signal (i) prohibit the ability of Signal Stockholders to act by written consent and (ii) make such other changes as are mutually agreeable to Signal and Miragen.

8.13 Documents. Miragen has received the following documents, each of which shall be in full force and effect as of the Closing Date:

(a) a certificate executed by the Chief Executive Officer and Chief Financial Officer of Signal confirming that the conditions set forth in Sections 8.1, 8.2, 8.3, 8.5, 8.6, 8.7, 8.8, 8.9, and 8.11 have been duly satisfied;

(b) (i) certificates of good standing of each of Signal and Merger Sub in its jurisdiction of organization and the various foreign jurisdictions in which each is qualified to do business, (ii) certified copies of the certificate of incorporation and bylaws of Signal and Merger Sub, (iii) a certificate as to the incumbency of the officers of Signal and Merger Sub, and (iv) the adoption of resolutions of the Signal Board of Directors and the board of directors of Merger Sub authorizing the execution of this Agreement and the consummation of the Contemplated Transactions to be performed by Signal and Merger Sub hereunder;

(c) written resignations in forms satisfactory to Miragen, dated as of the Closing Date and effective as of the Closing executed by all officers and directors of Signal; and

(d) the Signal Outstanding Shares Certificate.

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ARTICLE 9. TERMINATION

9.1 Termination. This Agreement may be terminated prior to the Effective Time (whether before or after obtaining the Required Miragen Stockholder Vote or Required Signal Stockholder Vote, as applicable, unless otherwise specified below):

(a) by mutual written consent duly authorized by the Boards of Directors of Signal and Miragen;

(b) by either Signal or Miragen if the Merger shall not have been consummated by April 30, 2017 (the ***Outside Date***); *provided*, *however*, that the right to terminate this Agreement under this Section 9.1(b) shall not be available to Miragen, on the one hand, or to Signal, on the other hand, if such Party s (or, in the case of Signal, Merger Sub s) action or failure to act has been a principal cause of the failure of the Merger to occur on or before the Outside Date and such action or failure to act constitutes a breach of this Agreement; *provided*, *further*, that, in the event that the SEC has not declared effective under the Securities Act the Form S-4 Registration Statement by the date which is 60 calendar days prior to the Outside Date, then either Miragen or Signal shall be entitled to extend the date for termination of this Agreement pursuant to this Section 9.1(b) for an additional 60 calendar days from the Outside Date;

(c) by either Signal or Miragen if a court of competent jurisdiction or other Governmental Body has issued a final and nonappealable order, decree or ruling, or has taken any other action, having the effect of permanently restraining, enjoining or otherwise prohibiting the Merger;

(d) by Signal if the Required Miragen Stockholder Vote shall not have been obtained within five Business Days of the Form S-4 Registration Statement being declared effective by the SEC; *provided*, *however*, that once the Required Miragen Stockholder Vote has been obtained, Signal may not terminate this Agreement pursuant to this Section 9.1(d);

(e) by either Signal or Miragen if (i) the Signal Stockholders Meeting (including any adjournments and postponements thereof) has been held and completed and the Signal Stockholders have taken a final vote on the Signal Stockholder Matters and (ii) the Signal Stockholder Matters have not been approved at the Signal Stockholders Meeting (or any adjournment or postponement thereof) by the Required Signal Stockholder Vote; *provided*, *however*, that the right to terminate this Agreement under this Section 9.1(e) shall not be available to Signal where the failure to obtain the Required Signal Stockholder Vote has been caused by the action or failure to act of Signal or Merger Sub and such action or failure to act constitutes a material breach by Signal or Merger Sub of this Agreement;

(f) by Miragen (at any time prior to obtaining the Required Signal Stockholder Vote) if any of the following events have occurred: (i) Signal failed to include the Signal Board Recommendation in the Proxy Statement / Prospectus / Information Statement; (ii) the Signal Board of Directors have approved, endorsed or recommended any Acquisition Proposal; (iii) Signal has failed to hold the Signal Stockholders Meeting within 60 calendar days of the Form S-4 Registration Statement being declared effective by the SEC under the Securities Act (other than to the extent that the Form S-4 Registration Statement is subject to any stop order or proceeding (or threatened proceeding by the SEC) seeking a stop order with respect to the Form S-4 Registration Statement, in which case such 60-calendar day period shall be tolled for the earlier of 60 calendar days or so long as such stop order remains in effect or such proceeding or threatened proceeding remains pending); (iv) Signal has entered into any Acquisition Agreement (other than a confidentiality agreement permitted pursuant to Section 4.5); or (v) Signal or any of its Representatives has willfully and intentionally breached the provisions set forth in Section 4.5;

(g) by Signal (at any time prior to the approval of the Merger by the Required Miragen Stockholder Vote) if any of the following events have occurred: (i) the Miragen Board of Directors failed to include the Miragen Board

Recommendation in the Proxy Statement / Prospectus / Information Statement; (ii) the Miragen

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Board of Directors have approved, endorsed or recommended any Acquisition Proposal; (iii) Miragen has entered into any Acquisition Agreement (other than a confidentiality agreement permitted pursuant to Section 4.5); or (iv) Miragen or any of its Representatives has willfully and intentionally breached the provisions set forth in Section 4.5 of the Agreement;

(h) by Miragen, upon a breach of any representation, warranty, covenant or agreement on the part of Signal or Merger Sub set forth in this Agreement, or if any representation or warranty of Signal or Merger Sub has become inaccurate, in either case such that the conditions set forth in Section 8.1 or Section 8.2 would not be satisfied; *provided, however*, that if such inaccuracy in Signal s or Merger Sub s representations and warranties or breach by Signal or Merger Sub is curable by Signal or Merger Sub, then this Agreement shall not terminate pursuant to this Section 9.1(h) as a result of such particular breach or inaccuracy unless such breach remains uncured 15 calendar days following the date of written notice from Miragen to Signal of such breach or inaccuracy and its intention to terminate pursuant to this Section 9.1(h); *provided further, however*, that no termination may be made pursuant to this Section 9.1(h) solely as a result of the failure to obtain the Required Signal Stockholder Vote (in which case, termination must be made pursuant to Section 9.1(e));

(i) by Signal, upon a breach of any representation, warranty, covenant or agreement on the part of Miragen set forth in this Agreement, or if any representation or warranty of Miragen has become inaccurate, in either case such that the conditions set forth in Section 7.1 or Section 7.2 would not be satisfied; *provided, however*, that if such inaccuracy in Miragen s representations and warranties or breach by Miragen is curable by Miragen, then this Agreement shall not terminate pursuant to this Section 9.1(i) as a result of such particular breach or inaccuracy unless such breach remains uncured 15 calendar days following the date of written notice from Signal to Miragen of such breach or inaccuracy and its intention to terminate pursuant to this Section 9.1(i); *provided further, however*, that no termination may be made pursuant to this Section 9.1(i) solely as a result of the failure to obtain the Required Miragen Stockholder Vote (in which case, termination must be made pursuant to Section 9.1(d));

(j) by Signal (prior to obtaining the Required Signal Stockholder Vote), if the Signal Board of Directors authorized Signal to enter into any Permitted Alternative Agreement; *provided, however*, that Signal shall not enter into any Permitted Alternative Agreement unless (i) Signal has complied with its obligations under Section 4.5; (ii) Signal has complied with its obligations under Section 5.3(c); (iii) Signal concurrently pays to Miragen amounts due pursuant to Section 9.3; and (iv) a copy of the execution version of such Permitted Alternative Agreement and all related agreements, exhibits, schedules, and other documents have been delivered to Miragen; or

(k) by Miragen (prior to obtaining the Required Miragen Stockholder Vote), if the Miragen Board of Directors authorized Miragen to enter into any Permitted Alternative Agreement; *provided, however*, that Miragen shall not enter into any Permitted Alternative Agreement unless (i) Miragen has complied with its obligations under Section 4.5; (ii) Miragen has complied with its obligations under Section 5.2(c); (iii) Miragen concurrently pays to Signal amounts due pursuant to Section 9.3; and (iv) a copy of the execution version of such Permitted Alternative Agreement and all related agreements, exhibits, schedules, and other documents have been delivered to Signal.

The Party desiring to terminate this Agreement pursuant to this Section 9.1 (other than pursuant to Section 9.1(a)) shall give a notice of such termination to the other Party specifying the provisions hereof pursuant to which such termination is made and the basis therefor described in reasonable detail.

9.2 Effect of Termination. In the event of the termination of this Agreement as provided in Section 9.1, this Agreement shall be of no further force or effect; *provided*, *however*, that (i) this Section 9.2, Section 9.3, and Article 10 shall survive the termination of this Agreement and shall remain in full force and effect, and (ii) the termination of this Agreement shall not relieve any Party for its fraud or from any liability for any willful and material breach of any

representation, warranty, covenant, obligation or other provision contained in this Agreement.

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9.3 Expenses; Termination Fees.

(a) Except as set forth in this Section 9.3, all fees and expenses incurred in connection with this Agreement and the Contemplated Transactions shall be paid by the Party incurring such expenses, whether or not the Merger is consummated; *provided*, *however*, that Signal and Miragen shall share equally all fees and expenses, other than attorneys and accountants fees and expenses, incurred in relation to the filings by the Parties under any filing requirement under the HSR Act and any foreign antitrust Legal Requirement applicable to this Agreement and the Contemplated Transactions; *provided*, *further,* that Signal and Miragen shall also share equally all fees and expenses incurred by engagement of the Exchange Agent and in relation to the printing (*e.g.*, paid to a financial printer) and filing with the SEC of the Form S-4 Registration Statement (including any financial statements and exhibits) and any amendments or supplements thereto.

(b) (i) If (A) this Agreement is terminated by Signal or Miragen pursuant to Section 9.1(e) or Section 9.1(f), (B) at any time before the Signal Stockholders Meeting an Acquisition Proposal with respect to Signal has been publicly announced, disclosed or otherwise communicated to the Signal Board of Directors and (C) in the event this Agreement is terminated pursuant Section 9.1(e), within 12 months after the date of such termination, Signal enters into a definitive agreement with respect to a Subsequent Transaction or consummates a Subsequent Transaction, then Signal shall pay to Miragen, within 10 Business Days after termination (or, if applicable, upon the earlier of such entry into a definitive agreement with respect to a Subsequent Transaction or consummation of a Subsequent Transaction), a nonrefundable fee in an amount equal to $300,000 (the ***Miragen Termination Fee***), in addition to any amount payable to Miragen pursuant to Section 9.3(c) or Section 9.3(e).

(ii) If (A) this Agreement is terminated by Signal pursuant to Section 9.1(d) or Section 9.1(g), (B) at any time before obtaining the Required Miragen Stockholder Vote an Acquisition Proposal with respect to Miragen has been publicly announced, disclosed or otherwise communicated to the Miragen Board of Directors, and (C) in the event this Agreement is terminated pursuant Section 9.1(d), within 12 months after the date of such termination, Miragen enters into a definitive agreement with respect to a Subsequent Transaction or consummates a Subsequent Transaction, then Miragen shall pay to Signal, within 10 Business Days after termination (or, if applicable, upon the earlier of such entry into a definitive agreement with respect to a Subsequent Transaction or consummation of a Subsequent Transaction), a nonrefundable fee in an amount equal to $300,000 (the ***Signal Termination Fee***), in addition to any amount payable to Signal pursuant to Section 9.3(d) or Section 9.3(e).

(iii) If this Agreement is terminated by Signal pursuant to Section 9.1(j), then Signal shall pay to Miragen, concurrent with such termination, the Miragen Termination Fee, in addition to any amount payable to Miragen pursuant to Section 9.3(c) or Section 9.3(e).

(iv) If this Agreement is terminated by Miragen pursuant to Section 9.1(k), then Miragen shall pay to Signal, concurrent with such termination, the Signal Termination Fee, in addition to any amount payable to Signal pursuant to Section 9.3(d) or Section 9.3(e).

(c) (i) If this Agreement is terminated by Miragen pursuant to Section 9.1(e), Section 9.1(f) or Section 9.1(h), or (ii) if this Agreement is terminated by Signal pursuant to Section 9.1(e) or Section 9.1(j), or (iii) in the event of a failure of Miragen to consummate the transactions to be consummated at the Closing solely as a result of a Signal Material Adverse Effect as set forth in Section 8.3 (*provided*, that at such time all of the other conditions precedent to Signal s obligation to close set forth in Article 6 and Article 7 of this Agreement have been satisfied by Miragen, are capable of being satisfied by Miragen or have been waived by Signal), then Signal shall reimburse Miragen for all reasonable fees and expenses incurred by Miragen in connection with this Agreement and the transactions contemplated hereby, including (A) all fees and expenses incurred in connection with the preparation, printing and filing, as applicable, of

the Form S-4 Registration Statement (including any preliminary materials related thereto and all amendments and supplements thereto, as well as any financial

statements and schedules thereto) and (B) all fees and expenses incurred in connection with the preparation and filing under any filing requirement of any Governmental Body applicable to this Agreement and the transactions contemplated hereby (such expenses, including (A) and (B) above, collectively, the ***Third-Party Expenses***), up to a maximum of $100,000, by wire transfer of same-day funds within 10 Business Days following the date on which Miragen submits to Signal true and correct copies of reasonable documentation supporting such Third-Party Expenses; *provided*, *however*, that such Third-Party Expenses shall not include any amounts for a financial advisor to Miragen except for reasonably documented out-of-pocket expenses otherwise reimbursable by Miragen to such financial advisor pursuant to the terms of Miragen s engagement letter or similar arrangement with financial advisor.

(d) (i) If this Agreement is terminated by Signal pursuant to Section 9.1(d), Section 9.1(g), or Section 9.1(i), or (ii) if this Agreement is terminated by Miragen pursuant to Section 9.1(k), or (iii) in the event of a failure of Signal to consummate the transactions to be consummated at the Closing solely as a result of an Miragen Material Adverse Effect as set forth in Section 7.3 (*provided*, that at such time all of the other conditions precedent to Miragen s obligation to close set forth in Article 6 and Article 8 of this Agreement have been satisfied by Signal, are capable of being satisfied by Signal or have been waived by Miragen), then Miragen shall reimburse Signal for all Third-Party Expenses incurred by Signal up to a maximum of $100,000, by wire transfer of same-day funds within 10 Business Days following the date on which Signal submits to Miragen true and correct copies of reasonable documentation supporting such Third-Party Expenses; *provided*, *however*, that such Third-Party Expenses shall not include any amounts for a financial advisor to Signal except for reasonably documented out-of-pocket expenses otherwise reimbursable by Signal to such financial advisor pursuant to the terms of Signal s engagement letter or similar arrangement with financial advisor.

(e) If either Party fails to pay when due any amount payable by such Party under Section 9.3(b), Section 9.3(c), or Section 9.3(d), then (i) such Party shall reimburse the other Party for reasonable costs and expenses (including reasonable fees and disbursements of counsel) incurred in connection with the collection of such overdue amount and the enforcement by the other Party of its rights under this Section 9.3, and (ii) such Party shall pay to the other Party interest on such overdue amount (for the period commencing as of the date such overdue amount was originally required to be paid and ending on the date such overdue amount is actually paid to the other Party in full) at a rate per annum equal to the prime rate (as announced by Bank of America or any successor thereto) in effect on the date such overdue amount was originally required to be paid.

The Parties agree that the payment of the fees and expenses set forth in this Section 9.3, subject to Section 9.2, shall be the sole and exclusive remedy of each Party following a termination of this Agreement under the circumstances described in this Section 9.3, it being understood that in no event shall either Signal or Miragen be required to pay fees or damages payable pursuant to this Section 9.3 on more than one occasion. Subject to Section 9.2, the payment of the fees and expenses set forth in this Section 9.3, and the provisions of Section 10.10, each of the Parties and their respective Affiliates will not have any liability, will not be entitled to bring or maintain any other claim, action or proceeding against the other, shall be precluded from any other remedy against the other, at law or in equity or otherwise, and shall not seek to obtain any recovery, judgment or damages of any kind against the other (or any partner, member, stockholder, director, officer, employee, Subsidiary, affiliate, agent or other representative of such Party) in connection with or arising out of the termination of this Agreement, any breach by any Party giving rise to such termination or the failure of the Contemplated Transactions to be consummated. Each of the Parties acknowledges that (i) the agreements contained in this Section 9.3, are an integral part of the Contemplated Transactions, (ii) without these agreements, the Parties would not enter into this Agreement and (iii) any amount payable pursuant to this Section 9.3, is not a penalty, but rather is liquidated damages in a reasonable amount that will compensate the Parties in the circumstances in which such amount is payable.

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ARTICLE 10. MISCELLANEOUS PROVISIONS

10.1 Non-Survival of Representations and Warranties. The representations and warranties of Miragen, Merger Sub and Signal contained in this Agreement or any certificate or instrument delivered pursuant to this Agreement shall terminate at the Effective Time, and only the covenants that by their terms survive the Effective Time and this Section 10.1 shall survive the Effective Time.

10.2 Amendment. This Agreement may be amended with the approval of the respective Boards of Directors of Miragen, Merger Sub and Signal at any time (whether before or after obtaining the Required Signal Stockholder Vote or the Required Miragen Stockholder Vote); *provided*, *however*, that after any such adoption and approval of this Agreement by a Party s stockholders, no amendment shall be made, which by applicable Legal Requirement requires further approval of the stockholders of such Party, without the further approval of such stockholders. This Agreement may not be amended except by an instrument in writing signed on behalf of each of Miragen, Merger Sub and Signal.

10.3 Waiver.

(a) No failure on the part of any Party to exercise any power, right, privilege or remedy under this Agreement, and no delay on the part of any Party in exercising any power, right, privilege or remedy under this Agreement, shall operate as a waiver of such power, right, privilege or remedy; and no single or partial exercise of any such power, right, privilege or remedy shall preclude any other or further exercise thereof or of any other power, right, privilege or remedy.

(b) No Party shall be deemed to have waived any claim arising out of this Agreement, or any power, right, privilege or remedy under this Agreement, unless the waiver of such claim, power, right, privilege or remedy is expressly set forth in a written instrument duly executed and delivered on behalf of such Party; and any such waiver shall not be applicable or have any effect except in the specific instance in which it is given.

10.4 Entire Agreement; Counterparts; Exchanges by Facsimile. This Agreement and the other agreements referred to in this Agreement constitute the entire agreement and supersede all prior agreements and understandings, both written and oral, among or between any of the Parties with respect to the subject matter hereof and thereof; *provided*, *however*, that the Confidentiality Agreement shall not be superseded and shall remain in full force and effect in accordance with its terms. This Agreement may be executed in several counterparts, each of which shall be deemed an original and all of which shall constitute one and the same instrument. The exchange of a fully executed Agreement (in counterparts or otherwise) by all Parties by facsimile or electronic transmission in .PDF format shall be sufficient to bind the Parties to the terms and conditions of this Agreement.

10.5 Applicable Law; Jurisdiction. This Agreement shall be governed by, and construed in accordance with, the laws of the State of Delaware, regardless of the laws that might otherwise govern under applicable principles of conflicts of laws. In any action or suit between any of the Parties arising out of or relating to this Agreement or any of the Contemplated Transactions: (a) each of the Parties irrevocably and unconditionally consents and submits to the exclusive jurisdiction and venue of the state and federal courts located in the State of Delaware; and (b) each of the Parties irrevocably waives the right to trial by jury.

10.6 Attorneys Fees. In any action at law or suit in equity to enforce this Agreement or the rights of any of the parties under this Agreement, the prevailing Party in such action or suit shall be entitled to receive a reasonable sum for its attorneys fees and all other reasonable costs and expenses incurred in such action or suit.

10.7 Assignability; No Third Party Beneficiaries. This Agreement shall be binding upon, and shall be enforceable by and inure solely to the benefit of, the Parties hereto and their respective successors and assigns; *provided*, *however*, that neither this Agreement nor any of a Party s rights or obligations hereunder may be

assigned or delegated by such Party without the prior written consent of each other Party, and any attempted assignment or delegation of this Agreement or any of such rights or obligations by such Party without each other Party s prior written consent shall be void and of no effect. Nothing in this Agreement, express or implied, is intended to or shall confer upon any Person (other than the parties hereto and the D&O Indemnified Parties to the extent of their respective rights pursuant to Section 5.7) any right, benefit or remedy of any nature whatsoever under or by reason of this Agreement.

10.8 Notices. Any notice or other communication required or permitted to be delivered to any Party under this Agreement shall be in writing and shall be deemed properly delivered, given and received when delivered by hand, by registered mail, by courier or express delivery service, electronic mail, or by facsimile to the address, electronic mail address, or facsimile telephone number set forth beneath the name of such Party below (or to such other address, electronic mail address, or facsimile telephone number as such Party has specified in a written notice given to the other parties hereto):

if to Signal or Merger Sub:

Signal Genetics, Inc.

5740 Fleet Street

Carlsbad, California

Telephone No.: (760) 537-4100

Attention: Samuel D. Riccitelli, President & Chief Executive Officer

E-mail: sriccitelli@signalgenetics.com

with a copy to:

Pillsbury Winthrop Shaw Pittman LLP

12255 El Camino Real, Suite 300

San Diego, California 92130

Telephone: (858) 509-4000

Fax: (858) 509-4010

Attention: Mike Hird

E-mail: mike.hird@pillsburylaw.com

if to Miragen:

Miragen Therapeutics, Inc.

6200 Lookout Road, Suite 100

Boulder, Colorado

Telephone No.: (303) 531-5952

Facsimile No.: (303) 531-5094

Attention: William S. Marshall, President & Chief Executive Officer

E-mail: bmarshall@miragenrx.com

with a copy to:

Cooley LLP

380 Interlocken Crescent, Suite 900

Broomfield, Colorado 80021

Telephone No.: (720) 566-4000

Facsimile No.: (720) 455-4099

Attention: Brent Fassett

E-Mail: fassettbd@cooley.com

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10.9 Severability. Any term or provision of this Agreement that is invalid or unenforceable in any situation in any jurisdiction shall not affect the validity or enforceability of the remaining terms and provisions of this Agreement or the validity or enforceability of the offending term or provision in any other situation or in any other jurisdiction. If a final judgment of a court of competent jurisdiction declares that any term or provision of this Agreement is invalid or unenforceable, the Parties hereto agree that the court making such determination will have the power to limit such term or provision, to delete specific words or phrases or to replace such term or provision with a term or provision that is valid and enforceable and that comes closest to expressing the intention of the invalid or unenforceable term or provision, and this Agreement shall be valid and enforceable as so modified. In the event such court does not exercise the power granted to it in the prior sentence, the Parties hereto agree to replace such invalid or unenforceable term or provision with a valid and enforceable term or provision that will achieve, to the extent possible, the economic, business and other purposes of such invalid or unenforceable term or provision.

10.10 Other Remedies; Specific Performance. Except as otherwise provided herein, any and all remedies herein expressly conferred upon a Party will be deemed cumulative with and not exclusive of any other remedy conferred hereby, or by law or equity upon such Party, and the exercise by a Party of any one remedy will not preclude the exercise of any other remedy. The Parties hereto agree that irreparable damage would occur in the event that any of the provisions of this Agreement were not performed in accordance with their specific terms or were otherwise breached. It is accordingly agreed that the Parties shall be entitled to an injunction or injunctions to prevent breaches of this Agreement and to enforce specifically the terms and provisions hereof in any court of the United States or any state having jurisdiction, this being in addition to any other remedy to which they are entitled at law or in equity, and each of the Parties hereto waives any bond, surety or other security that might be required of any other Party with respect thereto.

10.11 Construction.

(a) For purposes of this Agreement, whenever the context requires: the singular number shall include the plural, and vice versa; the masculine gender shall include the feminine and neuter genders; the feminine gender shall include the masculine and neuter genders; and the neuter gender shall include masculine and feminine genders.

(b) The Parties hereto agree that any rule of construction to the effect that ambiguities are to be resolved against the drafting Party shall not be applied in the construction or interpretation of this Agreement.

(c) As used in this Agreement, the words include and including, and variations thereof, shall not be deemed to be terms of limitation, but rather shall be deemed to be followed by the words without limitation.

(d) Except as otherwise indicated, all references in this Agreement to Sections, Articles, Exhibits and Schedules are intended to refer to Sections or Articles of this Agreement and Exhibits and Schedules to this Agreement, respectively.

(e) The bold-faced headings contained in this Agreement are for convenience of reference only, shall not be deemed to be a part of this Agreement and shall not be referred to in connection with the construction or interpretation of this Agreement.

[*Remainder of page intentionally left blank*]

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IN WITNESS WHEREOF, the parties have caused this Agreement to be executed as of the date first above written.

SIGNAL GENETICS, INC.

By: /s/ Samuel D. Riccitelli
Name: Samuel D. Riccitelli
Title: Chief Executive Officer and President

SIGNAL MERGER SUB, INC.

By: /s/ Samuel D. Riccitelli
Name: Samuel D. Riccitelli
Title: Chief Executive Officer and President

MIRAGEN THERAPEUTICS, INC.

By: /s/ William S. Marshall, Ph.D.
Name: William S. Marshall, Ph.D.
Title: Chief Executive Officer and President

[Signature Page to Merger Agreement]

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EXHIBIT A

CERTAIN DEFINITIONS

For purposes of the Agreement (including this Exhibit A):

2008 Plan has the meaning set forth in Section 2.4(b).

2014 Plan has the meaning set forth in Section 3.4(b).

ACA has the meaning set forth in Section 2.14(o).

Accounting Firm has the meaning set forth in Section 1.6(e).

Acquisition Agreement has the meaning set forth in Section 4.5(a).

Acquisition Inquiry means, with respect to a Party, an inquiry, indication of interest or request for information (other than an inquiry, indication of interest or request for information made or submitted by Miragen, on the one hand, or Signal, on the other hand, to the other Party) that would reasonably be expected to lead to an Acquisition Proposal with such Party.

Acquisition Proposal means, with respect to a Party, any offer or proposal, whether written or oral (other than an offer or proposal made or submitted by or on behalf of Miragen or any of its Affiliates, on the one hand, or by or on behalf of Signal or any of its Affiliates, on the other hand, to the other Party) made by a third party contemplating or otherwise relating to any Acquisition Transaction with such Party.

Acquisition Transaction means any transaction or series of transactions involving: (a) any merger, consolidation, amalgamation, share exchange, business combination, issuance of securities, acquisition of securities, reorganization, recapitalization, tender offer, exchange offer or other similar transaction: (i) in which a Party is a constituent corporation; (ii) in which a Person or group (as defined in the Exchange Act and the rules promulgated thereunder) of Persons directly or indirectly acquires beneficial or record ownership of securities representing more than 20% of the outstanding securities of any class of voting securities of a Party or any of its Subsidiaries; or (iii) in which a Party or any of its Subsidiaries issues securities representing more than 20% of the outstanding securities of any class of voting securities of such Party or any of its Subsidiaries; *provided, however*, in the case of Miragen, the Miragen Pre-Closing Financing shall not be an Acquisition Transaction ; (b) any sale, lease, exchange, transfer, license, acquisition or disposition of any business or businesses or assets that constitute or account for 20% or more of the consolidated book value or the fair market value of the assets of a Party and its Subsidiaries, taken as a whole (other than (i) the sale, divestiture and/or winding down of the Lab Business by Signal in accordance with the terms and conditions of this Agreement and (ii) any lease, exchange, transfer, license, disposition, partnership, or collaboration involving less than substantially all of the assets of Miragen or any Miragen Subsidiary pursuant to a collaboration agreement, partnership agreement or similar arrangement); or (c) any tender offer or exchange offer, that if consummated would result in any Person beneficially owning 20% or more of the outstanding equity securities of a Party or any of its Subsidiaries.

Affiliates has the meaning for such term as used in Rule 145 under the Securities Act.

Agreement has the meaning set forth in the Preamble.

Allocation Certificate has the meaning set forth in Section 1.12(b).

Anticipated Closing Date has the meaning set forth in Section 1.6(a).

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Business Day means any day other than a day on which banks in the State of New York are authorized or obligated to be closed.

Certificate of Merger has the meaning set forth in Section 1.3.

Certifications has the meaning set forth in Section 3.5(a).

Closing has the meaning set forth in Section 1.3.

CLIA has the meaning set forth in Section 3.12(c).

Closing Date has the meaning set forth in Section 1.3.

COBRA means the Consolidated Omnibus Budget Reconciliation Act of 1985, as amended, as set forth in Section 4980B of the Code and Part 6 of Title I of ERISA.

Code means the Internal Revenue Code of 1986, as amended.

Confidentiality Agreement means the Amended and Restated Confidentiality Agreement, dated August 15, 2016, between Miragen and Signal.

Consent means any approval, consent, ratification, permission, waiver or authorization (including any Governmental Authorization).

Contemplated Transactions means the Merger, the Preferred Stock Conversion, the NASDAQ Reverse Split, the Miragen Reverse Split, the Miragen Pre-Closing Financing, and the other transactions and actions contemplated by the Agreement.

Contract shall, with respect to any Person, mean any written agreement, contract, subcontract, lease (whether real or personal property), mortgage, understanding, arrangement, instrument, note, option, warranty, purchase order, license, sublicense, insurance policy, benefit plan or legally binding commitment or undertaking of any nature to which such Person is a party or by which such Person or any of its assets are bound or affected under applicable law.

Cooley has the meaning set forth in Section 5.1(c).

Costs has the meaning set forth in Section 5.7(a).

D&O Indemnified Parties has the meaning set forth in Section 5.7(a).

Determination Date has the meaning set forth in Section 1.6(a).

DGCL means the General Corporation Law of the State of Delaware.

Dispute Notice has the meaning set forth in Section 1.6(b).

Dissenting Shares has the meaning set forth in Section 1.9(a).

Drug Regulatory Agency has the meaning set forth in Section 2.12(c).

Effect means any effect, change, event, circumstance, or development.

Effective Time has the meaning set forth in Section 1.3.

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Encumbrance means any lien, pledge, hypothecation, charge, mortgage, security interest, encumbrance, claim, infringement, interference, option, right of first refusal, preemptive right, community property interest or restriction of any nature (including any restriction on the voting of any security, any restriction on the transfer of any security or other asset, any restriction on the receipt of any income derived from any asset, any restriction on the use of any asset and any restriction on the possession, exercise or transfer of any other attribute of ownership of any asset).

Entity means any corporation (including any non-profit corporation), partnership (including any general partnership, limited partnership or limited liability partnership), joint venture, estate, trust, company (including any company limited by shares, limited liability company or joint stock company), firm, society or other enterprise, association, organization or entity, and each of its successors.

Environmental Law means any federal, state, local or foreign Legal Requirement relating to pollution or protection of human health or the environment (including ambient air, surface water, ground water, land surface or subsurface strata), including any law or regulation relating to emissions, discharges, releases or threatened releases of Hazardous Materials, or otherwise relating to the manufacture, processing, distribution, use, treatment, storage, disposal, transport or handling of Hazardous Materials.

ERISA means the Employee Retirement Income Security Act of 1974, as amended.

Exchange Act means the Securities Exchange Act of 1934, as amended.

Exchange Agent has the meaning set forth in Section 1.8(a).

Exchange Fund has the meaning set forth in Section 1.8(a).

Exchange Ratio means, subject to Section 1.5(f), the following ratio (with such ratio being calculated to the nearest 1/10,000 of a share): the quotient obtained by *dividing* (a) the Miragen Merger Shares *by* (b) the Miragen Outstanding Shares, in which

Miragen Allocation Percentage means 1.00 minus the Signal Allocation Percentage.

Miragen Merger Shares means the product determined by *multiplying* (a) the Post-Closing Signal Shares *by* (b) the Miragen Allocation Percentage.

Miragen Outstanding Shares means the total number of shares of Miragen Common Stock outstanding immediately prior to the Effective Time expressed on a fully-diluted and as-converted to Miragen Common Stock basis and assuming, without limitation or duplication, (a) the exercise of all Miragen Options and Miragen Warrants outstanding as of immediately prior to the Effective Time, (b) the effectiveness of the Preferred Stock Conversion, and (c) the issuance of shares of Miragen Common Stock in respect of all other options, warrants or rights to receive such shares that will be outstanding immediately after the Effective Time and are specifically listed in the calculation; *provided*, *however*, that notwithstanding the foregoing, all shares of Miragen Common Stock issued in the Miragen Pre-Closing Financing shall be excluded from such total (*i.e.*, the Miragen Allocation Percentage and Signal Allocation Percentage contemplated by the Exchange Ratio are intended to be determined in the absence of the Miragen Pre-Closing Financing).

Post-Closing Signal Shares mean the quotient determined by *dividing* (a) the Signal Outstanding Shares *by* (b) the Signal Allocation Percentage.

Signal Allocation Percentage means 0.06; *provided, however, solely* to the extent that the Net Cash determined pursuant to Section 1.6 is less than negative One Hundred Thousand Dollars (-$100,000), then 0.06 shall be reduced by 0.00000002 for each One Dollar ($1.00) that the Net Cash as so determined is less than negative One Hundred Thousand Dollars (-$100,000) (for example, the Signal Allocation Percentage would be 0.055 if the Net Cash determined pursuant to Section 1.6 is negative Three Hundred Fifty Thousand Dollars (-$350,000)).

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Signal Outstanding Shares means, subject to Section 1.5(f), the total number of shares of Signal Common Stock outstanding immediately prior to the Effective Time expressed on a fully-diluted and as-converted to Signal Common Stock basis, and assuming, without limitation or duplication, (a) the exercise of each Signal Option outstanding as of the Effective Time, solely to the extent such Signal Option will not be canceled pursuant to Section 5.6(b) at the Effective Time or exercised prior thereto, (b) the settlement in shares of Signal Common Stock of each Signal RSU outstanding as of the Effective Time, solely to the extent such Signal RSU will not be canceled pursuant to Section 5.6(b) at the Effective Time or settled prior thereto, (c) the exercise of all Signal Warrants outstanding as of immediately prior to the Effective Time, (d) the conversion of all of Signal s outstanding convertible indebtedness into shares of Signal Common Stock, including the conversion of the LeBow Note into shares of Signal Common Stock in accordance with the terms of the LeBow Note, and (e) the issuance of shares of Signal Common Stock in respect of all other options, warrants or rights to receive such shares that will be outstanding immediately after the Effective Time and are specifically listed in the calculation.

Existing Miragen D&O Policies has the meaning set forth in Section 2.16(b).

Existing Signal D&O Policies has the meaning set forth in Section 3.16(b).

FDA has the meaning set forth in Section 2.12(c).

FDCA has the meaning set forth in Section 2.12(c).

Form S-4 Registration Statement means the registration statement on Form S-4 to be filed with the SEC by Signal registering the public offering and sale of Signal Common Stock to all Miragen Stockholders in the Merger, including all shares of Signal Common Stock to be issued in exchange for all shares of Miragen Common Stock in the Merger, as said registration statement may be amended prior to the time it is declared effective by the SEC.

GAAP has the meaning set forth in Section 2.5(a).

Governmental Authorization means any: (a) permit, license, certificate, franchise, permission, variance, exceptions, orders, clearance, registration, qualification or authorization issued, granted, given or otherwise made available by or under the authority of any Governmental Body or pursuant to any Legal Requirement; or (b) right under any Contract with any Governmental Body.

Governmental Body means any: (a) nation, state, commonwealth, province, territory, county, municipality, district or other jurisdiction of any nature; (b) federal, state, local, municipal, foreign or other government; (c) governmental or quasi-governmental body of any nature (including any governmental division, department, agency, commission, instrumentality, official, ministry, fund, foundation, center, organization, unit, body or Entity and any court or other tribunal, and for the avoidance of doubt, any Tax authority); or (d) self-regulatory organization (including NASDAQ and the Financial Industry Regulatory Authority).

Grant Date has the meaning set forth in Section 2.14(f).

Hazardous Materials means any pollutant, chemical, substance and any toxic, infectious, carcinogenic, reactive, corrosive, ignitable or flammable chemical, or chemical compound, or hazardous substance, material or waste, whether solid, liquid or gas, that is subject to regulation, control or remediation under any Environmental Law, including crude oil or any fraction thereof, and petroleum products or by-products.

HSR Act means the Hart-Scott-Rodino Antitrust Improvements Act of 1976, as amended.

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Intellectual Property means (a) United States, foreign and international patents, patent applications, including provisional applications, statutory invention registrations, invention disclosures and inventions, (b) trademarks, service marks, trade names, domain names, URLs, trade dress, logos and other source identifiers, including registrations and applications for registration thereof, (c) copyrights, including registrations and applications for registration thereof, and (d) software, formulae, customer lists, trade secrets, know-how, confidential information and other proprietary rights and intellectual property, whether patentable or not.

Investor Agreements shall have the meaning set forth in Section 5.17.

IRS means the United States Internal Revenue Service.

Knowledge means, (a) with respect to Signal, the actual knowledge of Samuel D. Riccitelli and Tamara A. Seymour, after reasonable inquiry; and (b) with respect to Miragen, the actual knowledge of William S. Marshall, Jason A. Lervone, and Adam Levy, after reasonable inquiry.

Lab Business means the MyPRS® (Myeloma Prognostic Risk Signature) assay business of Signal.

LeBow Note means that certain Unsecured Demand Promissory Note, dated March 6, 2015, issued by Signal to the holder thereof in the original principal amount of $1,105,000, as amended by that certain Amendment to Unsecured Demand Promissory Note, dated October 31, 2016, between Signal and the holder thereof.

Legal Proceeding means any action, suit, litigation, arbitration, proceeding (including any civil, criminal, administrative, investigative or appellate proceeding), hearing, inquiry, audit, examination or investigation commenced, brought, conducted or heard by or before, or otherwise involving, any court or other Governmental Body or any arbitrator or arbitration panel.

Legal Requirement means any federal, state, foreign, material local or municipal or other law, statute, constitution, principle of common law, resolution, ordinance, code, edict, decree, rule, regulation, ruling or requirement issued, enacted, adopted, promulgated, implemented or otherwise put into effect by or under the authority of any Governmental Body.

Liability has the meaning set forth in Section 2.11.

Merger has the meaning set forth in the recitals.

Merger Consideration has the meaning set forth in Section 1.5(a)(ii).

Merger Sub has the meaning set forth in the Preamble.

Merger Sub Capital Stock has the meaning set forth in Section 3.4(e).

Miragen has the meaning set forth in the Preamble.

Miragen 409A Plan has the meaning set forth in Section 2.14(n).

Miragen Affiliate means any Person that is (or at any relevant time was) under common control with Miragen within the meaning of Sections 414(b), (c), (m) and (o) of the Code, and the regulations issued thereunder.

Miragen Associate means any current employee, independent contractor, officer or director of Miragen or any Miragen Affiliate.

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Miragen Board Adverse Recommendation Change has the meaning set forth in Section 5.2(b).

Miragen Board of Directors means the board of directors of Miragen.

Miragen Board Recommendation has the meaning set forth in Section 5.2(b).

Miragen Capital Stock means the Miragen Common Stock and the Miragen Preferred Stock.

Miragen Common Stock has the meaning set forth in Section 2.4(a).

Miragen Contract means any Contract: (a) to which Miragen or any of its Subsidiaries is a Party; or (b) by which Miragen or any Miragen Subsidiary or any Miragen IP Rights or any other asset of Miragen or its Subsidiaries is bound or under which Miragen or any Miragen Subsidiary has any obligation.

Miragen Disclosure Schedule has the meaning set forth in Article 2.

Miragen Employee Plan has the meaning set forth in Section 2.14(e).

Miragen Financials has the meaning set forth in Section 2.5(a).

Miragen IP Rights means all Intellectual Property owned, licensed or controlled by Miragen or any of its Subsidiaries that is necessary or used in the business of Miragen and its Subsidiaries as presently conducted or as presently proposed to be conducted.

Miragen IP Rights Agreement means any instrument or agreement governing, related or pertaining to any Miragen IP Rights.

Miragen Intervening Event has the meaning set forth in Section 5.2(c).

Miragen Leases has the meaning set forth in Section 2.8.

Miragen Material Adverse Effect means any Effect that, considered together with all other Effects that have occurred prior to the date of determination of the occurrence of the Miragen Material Adverse Effect, is or would reasonably be expected to be materially adverse to, or has or would reasonably be expected to have or result in a material adverse effect on: (a) the business, condition (financial or otherwise), capitalization, assets, operations or financial performance of Miragen and its Subsidiaries taken as a whole; or (b) the ability of Miragen to consummate the Contemplated Transactions or to perform any of its covenants or obligations under the Agreement in all material respects; *provided*, *however*, that Effects from the following shall not be deemed to constitute (nor shall Effects from any of the following be taken into account in determining whether there has occurred) an Miragen Material Adverse Effect: (i) any rejection by a Governmental Body of a registration or filing by Miragen relating to the Miragen IP Rights; (ii) any change in the cash position of Miragen which results from operations in the Ordinary Course of Business; (iii) conditions generally affecting the industries in which Miragen and its Subsidiaries participate or the United States or global economy or capital markets as a whole, to the extent that such conditions do not have a disproportionate impact on Miragen and its Subsidiaries taken as a whole; (iv) any failure by Miragen or any of its Subsidiaries to meet internal projections or forecasts on or after the date of this Agreement (it being understood, however, that any Effect causing or contributing to any such failure to meet projections or forecasts may constitute a Miragen Material Adverse Effect and may be taken into account in determining whether a Miragen Material Adverse Effect has occurred); (v) the execution, delivery, announcement or performance of the obligations under this

Agreement or the announcement, pendency or anticipated consummation of the Merger or the Miragen Pre-Closing Financing; (vi) the failure to close the Miragen Pre-Closing Financing; (vii) any natural disaster or any acts of terrorism, sabotage, military action or war or any escalation or worsening thereof; or (viii) any changes (after the date of this Agreement) in GAAP or applicable Legal Requirements.

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Miragen Material Contract has the meaning set forth in Section 2.10(a).

Miragen Options means options to purchase shares of Miragen Common Stock issued or granted by Miragen.

Miragen Permits has the meaning set forth in Section 2.12(b).

Miragen Pre-Closing Financing means an acquisition of Miragen Capital Stock to be consummated prior to the Closing pursuant to the Subscription Agreement.

Miragen Preferred Stock has the meaning set forth in Section 2.4(a).

Miragen Product Candidates has the meaning set forth in Section 2.12(d).

Miragen Registered IP means all Miragen IP Rights that are registered, filed or issued under the authority of, with or by any Governmental Body, including all patents, registered copyrights and registered trademarks and all applications for any of the foregoing.

Miragen Regulatory Permits has the meaning set forth in Section 2.12(d).

Miragen Reverse Split means a reverse stock split of all outstanding shares of Signal Common Stock at a reverse stock split ratio in the range mutually agreed to by Signal and Miragen that is effected by Signal upon the request of Miragen. For the avoidance of doubt, Miragen Reverse Split as used in this Agreement shall not mean any reverse split of Signal Common Stock undertaken by Signal to maintain compliance with NASDAQ listing standards.

Miragen Stock Certificate has the meaning set forth in Section 1.7.

Miragen Stockholder means each holder of Miragen Capital Stock, and ***Miragen Stockholders*** means all Miragen Stockholders.

Miragen Stockholder Matters has the meaning set forth in Section 5.2(a).

Miragen Stockholder Support Agreements has the meaning set forth in the Recitals.

Miragen Stockholder Written Consent has the meaning set forth in Section 2.2(b).

Miragen Subsidiary has the meaning set forth in Section 2.1(a).

Miragen Termination Fee has the meaning set forth in Section 9.3(b).

Miragen Unaudited Interim Balance Sheet means the unaudited consolidated balance sheet of Miragen as of June 30, 2016.

Miragen Warrants means the outstanding warrants to purchase Miragen Capital Stock set forth in Section 2.4(a) of the Miragen Disclosure Schedule.

Multiemployer Plan means (a) a multiemployer plan, as defined in Section 3(37) or 4001(a)(3) of ERISA, or (b) a plan which if maintained or administered in or otherwise subject to the laws of the United States would be described in paragraph (a).

Multiple Employer Plan means (a) a multiple employer plan within the meaning of Section 413(c) of the Code or Section 3(40) of ERISA, or (b) a plan which if maintained or administered in or otherwise subject to the laws of the United States would be described in paragraph (a).

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NASDAQ means The NASDAQ Stock Market.

NASDAQ Listing Application has the meaning set forth in Section 5.10.

NASDAQ Reverse Split means a reverse stock split of all outstanding shares of Signal Common Stock at a reverse stock split ratio in the range previously approved by the holders of Signal Common Stock and otherwise mutually agreed to by Signal and Miragen that is effected by Signal for the purpose of maintaining compliance with NASDAQ listing standards.

Net Cash means (a) the sum of Signal s cash and cash equivalents, marketable securities, accounts, interest and other receivables (to the extent determined to be collectible), and deposits (to the extent refundable to Signal), in each case as of the Anticipated Closing Date, determined in a manner consistent with the manner in which such items were historically determined and in accordance with the Signal Audited Financial Statements and the Signal Unaudited Interim Balance Sheet, *minus* (b) the sum of Signal s accounts payable and accrued expenses (without duplication of any expenses accounted for below), in each case as of such date and determined in a manner consistent with the manner in which such items were historically determined and in accordance with the Signal Audited Financial Statements and the Signal Unaudited Interim Balance Sheet, *minus* (c) the cash cost of any unpaid change of control payments or severance, termination or similar payments that are or become due to any current or former employee, director or independent contractor of Signal, or any other third party *minus* (d) the cash cost of any accrued and unpaid retention payments or other bonuses due to any current or former employee, director or independent contractor of Signal as of the Closing Date, *minus* (e) the cash cost of any other Terminated Signal Associate Payment not set forth in clauses (c) or (d), *minus* (f) all payroll, employment or other withholding Taxes incurred by Signal and any Signal Associate (to the extent paid or to be paid by Signal on the behalf of such Signal Associate) in connection with any payment amounts set forth in clauses (c), (d) or (e) and the exercise of any Signal Option or settlement of any Signal RSU on or prior to the Effective Time, *minus* (g) any remaining unpaid fees and expenses (including any attorney s, accountant s, financial advisor s or finder s fees) as of such date for which Signal is liable incurred by Signal in connection with this Agreement and the Contemplated Transactions or otherwise, *minus* (h) any bona fide current liabilities payable in cash, in each case to the extent not canceled at or prior to the Anticipated Closing Date, *minus* (i) any fees and expenses payable by Signal pursuant to Section 1.6(e), *minus* (j) any unpaid amounts payable by Signal in satisfaction of its obligations under Section 5.7 for the period after the Closing (including any expenses incurred in connection with the tail policy), *minus* (k) the cash cost of any unpaid retention payment amounts due under any insurance policy with respect to any Legal Proceeding against Signal or Merger Sub, *minus* (l) the cash cost of repurchasing any shares of Signal Common Stock to the extent Signal has agreed to purchase such shares and the purchase price for such shares has not been fully paid by Signal as of the Determination Date, *plus* or *minus* (as applicable) (m) the net amount of any transaction expense reimbursement owed to, or transaction expense payment owed by, Signal pursuant to Section 9.3(a), *plus* (n) the amount of any payments due to Signal within 30 calendar days of the Closing Date pursuant to the sale or other disposition of all or a portion of the Lab Business, *plus* (o) any amounts paid or payable by Signal for activities requested by Miragen in respect of the audit of Signal s financial statements at and for the year ended December 31, 2016, as well as for the preparation of Signal s Annual Report on Form 10-K for 2016.

Net Cash Calculation has the meaning set forth in Section 1.6(a).

Net Cash Schedule has the meaning set forth in Section 1.6(a).

Notice Period has the meaning set forth in Section 5.2(c).

Ordinary Course of Business means, in the case of each of Miragen and Signal and for all periods, such actions taken in the ordinary course of its normal operations and consistent with its past practices, and for periods following the date of this Agreement consistent with its operating plans delivered to the other Party pursuant to Section 4.1(ii); *provided, however,* that during the Pre-Closing Period, (a) the Ordinary Course of Business of

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each Party shall also include any actions expressly required or permitted by this Agreement, including the Contemplated Transactions, (b) the Ordinary Course of Business for Miragen shall also include (i) actions undertaken in connection with preparing to become a SEC reporting company listed on the NASDAQ Capital Market and (ii) actions required to engage with one or more third parties regarding a lease, exchange, transfer, license, disposition, partnership, or collaboration involving less than substantially all of the assets of Miragen or any Miragen Subsidiary pursuant to a collaboration agreement, partnership agreement or similar arrangement, and (c) the Ordinary Course of Business of Signal shall also include actions required to effect the sale, divestiture and/or winding down of the Lab Business.

Other Signal Stockholder Matters has the meaning set forth in Section 5.3(a).

Outside Date has the meaning set forth in Section 9.1(b).

Party or ***Parties*** means Miragen, Merger Sub and Signal.

Permitted Alternative Agreement means an Acquisition Agreement that constitutes a Superior Offer.

Person means any individual, Entity or Governmental Body.

Pillsbury has the meaning set forth in Section 5.1(c).

Pre-Closing Period has the meaning set forth in Section 4.1.

Preferred Stock Conversion has the meaning set forth in Section 7.4.

Proxy Statement / Prospectus / Information Statement means the proxy statement/prospectus/information statement to be sent to Miragen s stockholders in connection with the approval of this Agreement and the Merger (by signing the Miragen Stockholder Written Consent) and to Signal s stockholders in connection with the Signal Stockholders Meeting.

Representatives means directors, officers, other employees, agents, attorneys, accountants, investment bankers, advisors and representatives.

Required Merger Sub Stockholder Vote has the meaning set forth in Section 3.2(b).

Required Miragen Stockholder Vote has the meaning set forth in Section 2.2(b).

Required Signal Stockholder Vote has the meaning set forth in Section 3.2(b).

Response Date has the meaning set forth in Section 1.6(b).

Sarbanes-Oxley Act means the Sarbanes-Oxley Act of 2002, as it may be amended from time to time.

SEC means the United States Securities and Exchange Commission.

Securities Act means the Securities Act of 1933, as amended.

Subscription Agreement has the meaning set forth in the Recitals.

Signal 401(k) Plan has the meaning set forth in Section 5.6(c).

Signal 409A Plan has the meaning set forth in Section 3.14(k).

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Signal has the meaning set forth in the Preamble.

Signal Affiliate means any Person that is (or at any relevant time was) under common control with Signal within the meaning of Sections 414(b), (c), (m) and (o) of the Code, and the regulations issued thereunder.

Signal Associate means any current or former employee, independent contractor, officer or director of Signal, any of its former Subsidiaries or any Signal Affiliate.

Signal Audited Financial Statements means the audited consolidated financial statements included in Signal s Report on Form 10-K filed with the SEC for the period ended December 31, 2015.

Signal Board Adverse Recommendation Change has the meaning set forth in Section 5.3(b).

Signal Board of Directors means the board of directors of Signal.

Signal Board Recommendation has the meaning set forth in Section 5.3(b).

Signal Capital Stock means Signal Common Stock and Signal preferred stock.

Signal Common Stock has the meaning set forth in Section 3.4(a).

Signal Contract means any Contract: (a) to which Signal is a Party; or (b) by which Signal or any Signal IP Rights or any other asset of Signal is bound or under which Signal has any obligation.

Signal Disclosure Schedule has the meaning set forth in Article 3.

Signal Employee Plan has the meaning set forth in Section 3.14(c).

Signal IP Rights means all Intellectual Property owned, licensed or controlled by Signal that is necessary or used in the business of Signal as presently conducted or as presently proposed to be conducted).

Signal IP Rights Agreement means any instrument or agreement governing, related or pertaining to any Signal IP Rights.

Signal Intervening Event has the meaning set forth in Section 5.3(c).

Sidney Leases has the meaning set forth in Section 3.8.

Signal Material Adverse Effect means any Effect that, considered together with all other Effects that have occurred prior to the date of determination of the occurrence of the Signal Material Adverse Effect, is or would reasonably be expected to be or to become materially adverse to, or has or would reasonably be expected to have or result in a material adverse effect on: (a) the business, condition (financial or otherwise), capitalization, assets, operations or financial performance of Signal; or (b) the ability of Signal to consummate the Contemplated Transactions or to perform any of its covenants or obligations under the Agreement in all material respects; *provided*, *however*, that Effects from the following shall not be deemed to constitute (nor shall Effects from any of the following be taken into account in determining whether there has occurred) a Signal Material Adverse Effect: (i) any rejection by a Governmental Body of a registration or filing by Signal relating to the Signal IP Rights; (ii) any change in the cash position of Signal which results from operations in the Ordinary Course of Business; (iii) conditions generally

affecting the industries in which Signal participates or the United States or global economy or capital markets as a whole, to the extent that such conditions do not have a disproportionate impact on Signal; (iv) any failure of Signal to meet internal projections or forecast or third-party revenue or earnings predictions for any period ending (or for which revenues or earnings are released) on or after the date of

this Agreement or any change in the price or trading volume of Signal Common Stock (it being understood, however, that any Effect causing or contributing to any such failure to meet projections or predictions or any change in stock price or trading volume may constitute a Signal Material Adverse Effect and may be taken into account in determining whether a Signal Material Adverse Effect has occurred); (v) the sale and/or winding down of the Lab Business and Signal s operations; (vi) the conversion of the LeBow Note; (vii) the execution, delivery, announcement or performance of the obligations under this Agreement or the announcement, pendency or anticipated consummation of the Merger or the Miragen Pre-Closing Financing; (viii) any natural disaster or any acts of terrorism, sabotage, military action or war or any escalation or worsening thereof; or (ix) any changes (after the date of this Agreement) in GAAP or applicable Legal Requirements.

Signal Material Contract has the meaning set forth in Section 3.10.

Signal Options means options to purchase shares of Signal Common Stock issued or granted by Signal.

Signal Outstanding Shares Certificate has the meaning set forth in Section 1.12(a).

Signal Permits has the meaning set forth in Section 3.12(b).

Signal Registered IP means all Signal IP Rights that are registered, filed or issued under the authority of, with or by any Governmental Body, including all patents, registered copyrights and registered trademarks and all applications for any of the foregoing.

Signal Regulatory Permits has the meaning set forth in Section 3.12(d).

Signal RSUs means a restricted stock unit covering shares of Signal Common Stock issued or granted by Signal.

Signal Stockholder means each holder of Signal Capital Stock, and ***Signal Stockholders*** means all Signal Stockholders.

Signal Stockholder Matters has the meaning set forth in Section 5.3(a).

Signal Stockholders Meeting has the meaning set forth in Section 5.3(a).

Signal Stockholder Support Agreements has the meaning set forth in the Recitals.

Signal Termination Fee has the meaning set forth in Section 9.3(b).

Signal Unaudited Interim Balance Sheet means the unaudited consolidated balance sheet of Signal included in Signal s Report on Form 10-Q filed with the SEC for the period ended June 30, 2016.

Signal Warrants means the outstanding warrants to purchase Signal Capital Stock set forth in Section 3.4(a) of the Signal Disclosure Schedule.

Subsequent Transaction means any Acquisition Transaction (with all references to 20% in the definition of Acquisition Proposal being treated as references to 50% for these purposes).

Subsidiary means an Entity of which another Person directly or indirectly owns or purports to own, beneficially or of record, (a) an amount of voting securities of other interests in such Entity that is sufficient to enable such Person to

elect at least a majority of the members of such Entity s board of directors or other governing body, or (b) at least 50% of the outstanding equity, voting, beneficial or financial interests in such Entity.

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Superior Offer means an unsolicited, bona fide Acquisition Proposal (with all references to 20% in the definition of Acquisition Proposal being treated as references to 50% for these purposes) made by a third party that (a) was not obtained or made as a direct or indirect result of a breach of (or in violation of) this Agreement; and (b) is on terms and conditions that the Signal Board of Directors or the Miragen Board of Directors, as applicable, determines, in its reasonable, good faith judgment, after obtaining and taking into account such matters that its Board of Directors deems relevant following consultation with its outside legal counsel and financial advisor, if any (i) is more favorable, from a financial point of view, to the Signal Stockholders or the Miragen Stockholders, as applicable, than the terms of the Merger; and (ii) is reasonably capable of being consummated; *provided*, *however*, that any such offer shall not be deemed to be a Superior Offer if (A) any financing required to consummate the transaction contemplated by such offer is not committed and is not reasonably capable of being obtained by such third party or (B) if the consummation of such transaction is contingent on any such financing being obtained.

Surviving Corporation has the meaning set forth in Section 1.1.

Tax means any federal, state, local, foreign or other tax, including any income tax, franchise tax, capital gains tax, gross receipts tax, value-added tax, surtax, estimated tax, unemployment tax, national health insurance tax, excise tax, ad valorem tax, transfer tax, stamp tax, sales tax, use tax, property tax, business tax, withholding tax, payroll tax, customs duty, alternative or add-on minimum or other tax of any kind whatsoever, and including any fine, penalty, addition to tax or interest, whether disputed or not.

Tax Return means any return (including any information return), report, statement, declaration, estimate, schedule, notice, notification, form, election, certificate or other document or information, and any amendment or supplement to any of the foregoing, filed with or submitted to, or required to be filed with or submitted to, any Governmental Body in connection with the determination, assessment, collection or payment of any Tax or in connection with the administration, implementation or enforcement of or compliance with any Legal Requirement relating to any Tax.

Terminated Signal Associate Payments has the meaning set forth in Section 5.6(a).

Terminated Signal Options and RSUs has the meaning set forth in Section 5.6(b).

Treasury Regulations means the United States Treasury regulations promulgated under the Code.

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Annex B

Signal 2016 Equity Incentive Plan

ADOPTED BY THE BOARD OF DIRECTORS: NOVEMBER 30, 2016

APPROVED BY THE STOCKHOLDERS: ,

1. GENERAL.

(a) Successor to and Continuation of Prior Plan. The Plan is intended as the successor to and continuation of the Miragen Therapeutics, Inc. 2008 Equity Incentive Plan, as amended (the ***Prior Plan***). On and following the Effective Date, no additional stock awards will be granted under the Prior Plan. All Awards granted on or after the Effective Date will be granted under this Plan. All stock awards granted under the Prior Plan prior to the Effective Date will remain subject to the terms of the Prior Plan and the applicable award agreement. All Awards granted on or after the Effective Date will be subject to the terms of the Plan and the applicable award agreement.

(i) Any shares that would otherwise remain available for future grants under the Prior Plan as of the Effective Date will cease to be available under the Prior Plan at such time.

(ii) From and after the Effective Date, any shares subject to stock awards granted under the Prior Plan and outstanding as of the Effective Date that (i) expire or terminate for any reason prior to exercise or settlement; (ii) are forfeited because of the failure to meet a contingency or condition required to vest such shares or otherwise return to the Company; or (iii) are reacquired, withheld (or not issued) to satisfy a tax withholding obligation in connection with an award or to satisfy the purchase price or exercise price of a stock award (such shares the ***Returning Shares***) will immediately be added to the Share Reserve (as further described in Section 3(a) below) as and when such shares become Returning Shares, up to the maximum number set forth in Section 3(a) below.

(b) Eligible Award Recipients. Employees, Directors and Consultants are eligible to receive Awards.

(c) Available Awards. The Plan provides for the grant of the following types of Awards: (i) Incentive Stock Options; (ii) Nonstatutory Stock Options; (iii) Stock Appreciation Rights; (iv) Restricted Stock Awards; (v) Restricted Stock Unit Awards; (vi) Performance Stock Awards; (vii) Performance Cash Awards; and (viii) Other Stock Awards.

(d) Purpose. The Plan, through the granting of Awards, is intended to help the Company secure and retain the services of eligible award recipients, provide incentives for such persons to exert maximum efforts for the success of the Company and any Affiliate and provide a means by which the eligible recipients may benefit from increases in value of the Common Stock.

2. ADMINISTRATION.

(a) Administration by Board. The Board will administer the Plan. The Board may delegate administration of the Plan to a Committee or Committees, as provided in Section 2(c).

(b) Powers of Board. The Board will have the power, subject to, and within the limitations of, the express provisions of the Plan:

(i) To determine: (A) who will be granted Awards; (B) when and how each Award will be granted; (C) what type of Award will be granted; (D) the provisions of each Award (which need not be identical), including when a Participant will be permitted to exercise or otherwise receive cash or Common Stock under the Award; (E) the number of shares of Common Stock subject to, or the cash value of, an Award; and (F) the Fair Market Value applicable to a Stock Award.

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(ii) To construe and interpret the Plan and Awards granted under it, and to establish, amend and revoke rules and regulations for administration of the Plan and Awards. The Board, in the exercise of these powers, may correct any defect, omission or inconsistency in the Plan or in any Award Agreement or in the written terms of a Performance Cash Award, in a manner and to the extent it will deem necessary or expedient to make the Plan or Award fully effective.

(iii) To settle all controversies regarding the Plan and Awards granted under it.

(iv) To accelerate, in whole or in part, the time at which an Award may be exercised or vest (or at which cash or shares of Common Stock may be issued).

(v) To suspend or terminate the Plan at any time. Except as otherwise provided in the Plan (including Section 2(b)(viii)) or an Award Agreement, suspension or termination of the Plan will not materially impair a Participant s rights under an outstanding Award without his or her written consent.

(vi) To amend the Plan in any respect the Board deems necessary or advisable, including, without limitation, by adopting amendments relating to Incentive Stock Options and certain nonqualified deferred compensation under Section 409A of the Code and/or to make the Plan or Awards granted under the Plan compliant with the requirements for Incentive Stock Options or exempt from or compliant with the requirements for nonqualified deferred compensation under Section 409A of the Code, subject to the limitations, if any, of applicable law. If required by applicable law or listing requirements, and except as provided in Section 9(a) relating to Capitalization Adjustments, the Company will seek stockholder approval of any amendment of the Plan that (A) materially increases the number of shares of Common Stock available for issuance under the Plan, (B) materially expands the class of individuals eligible to receive Awards under the Plan, (C) materially increases the benefits accruing to Participants under the Plan, (D) materially reduces the price at which shares of Common Stock may be issued or purchased under the Plan, (E) materially extends the term of the Plan, or (F) materially expands the types of Awards available for issuance under the Plan. Except as otherwise provided in the Plan (including Section 2(b)(viii)) or an Award Agreement, no amendment of the Plan will materially impair a Participant s rights under an outstanding Award without his or her written consent.

(vii) To submit any amendment to the Plan for stockholder approval, including, but not limited to, amendments to the Plan intended to satisfy the requirements of (A) Section 162(m) of the Code regarding the exclusion of performance-based compensation from the limit on corporate deductibility of compensation paid to Covered Employees, (B) Section 422 of the Code regarding incentive stock options or (C) Rule 16b-3.

(viii) To approve forms of Award Agreements for use under the Plan and to amend the terms of any one or more outstanding Awards, including, but not limited to, amendments to provide terms more favorable to the Participant than previously provided in the Award Agreement, subject to any specified limits in the Plan that are not subject to Board discretion; *provided, however,* that except as otherwise provided in the Plan (including this Section 2(b)(viii)) or an Award Agreement, the Board may not amend the terms of an outstanding Award if the Board, in its sole discretion, determines that the amendment, taken as a whole, will materially impair the Participant s rights under such Award without his or her written consent.

Notwithstanding the foregoing or anything in the Plan to the contrary, unless prohibited by applicable law, the Board may amend the terms of any outstanding Award or the Plan, or may suspend or terminate the Plan, without the affected Participant s consent, (A) to maintain the qualified status of the Award as an Incentive Stock Option under Section 422 of the Code, (B) to change the terms of an Incentive Stock Option, if such change results in impairment of the Award solely because it impairs the qualified status of the Award as an Incentive Stock Option under Section 422

of the Code, (C) to clarify the manner of exemption from, or to bring the Award or the Plan into compliance with, Section 409A of the Code, or (D) to comply with other applicable laws or listing requirements.

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(ix) Generally, to exercise such powers and to perform such acts as the Board deems necessary or expedient to promote the best interests of the Company and that are not in conflict with the provisions of the Plan or Awards.

(x) To adopt such procedures and sub-plans as are necessary or appropriate to permit participation in the Plan by Employees, Directors or Consultants who are foreign nationals or employed outside the United States (provided that Board approval will not be necessary for immaterial modifications to the Plan or any Award Agreement that are required for compliance with the laws of the relevant foreign jurisdiction).

(c) Delegation to Committee.

(i) General. The Board may delegate some or all of the administration of the Plan to a Committee or Committees. If administration of the Plan is delegated to a Committee, the Committee will have, in connection with the administration of the Plan, the powers theretofore possessed by the Board that have been delegated to the Committee, including the power to delegate to a subcommittee of the Committee any of the administrative powers the Committee is authorized to exercise (and references in this Plan to the Board will thereafter be to the Committee or subcommittee, as applicable). Any delegation of administrative powers will be reflected in resolutions, not inconsistent with the provisions of the Plan, adopted from time to time by the Board or Committee (as applicable). The Committee may, at any time, abolish the subcommittee and/or revest in the Committee any powers delegated to the subcommittee. The Board may retain the authority to concurrently administer the Plan with the Committee and may, at any time, revest in the Board some or all of the powers previously delegated.

(ii) Section 162(m) and Rule 16b-3 Compliance. The Committee may consist solely of two (2) or more Outside Directors, in accordance with Section 162(m) of the Code, or solely of two (2) or more Non-Employee Directors, in accordance with Rule 16b-3.

(d) Delegation to an Officer. The Board may delegate to one (1) or more Officers the authority to do one or both of the following: (i) designate Employees who are not Officers to be recipients of Options and SARs (and, to the extent permitted by applicable law, other Stock Awards) and, to the extent permitted by applicable law, the terms of such Awards; and (ii) determine the number of shares of Common Stock to be subject to such Stock Awards granted to such Employees; *provided, however*, that the Board resolutions regarding such delegation will specify the total number of shares of Common Stock that may be subject to the Stock Awards granted by such Officer and that such Officer may not grant a Stock Award to himself or herself. Any such Stock Awards will be granted on the form of Award Agreement most recently approved for use by the Committee or the Board, unless otherwise provided in the resolutions approving the delegation of authority. The Board may not delegate authority to an Officer who is acting solely in the capacity of an Officer (and not also as a Director) to determine the Fair Market Value pursuant to Section 13(y)(iii).

(e) Effect of Board s Decision. All determinations, interpretations and constructions made by the Board in good faith will not be subject to review by any person and will be final, binding and conclusive on all persons.

(f) Cancellation and Re-Grant of Stock Awards. Neither the Board nor any Committee will have the authority to (i) reduce the exercise or strike price of any outstanding Option or SAR under the Plan or (ii) cancel any outstanding Option or SAR that has an exercise or strike price greater than the then-current Fair Market Value of the Common Stock in exchange for cash or other Stock Awards under the Plan, unless the stockholders of the Company have approved such an action within twelve (12) months prior to such an event.

3. Shares Subject to the Plan.

(a) Share Reserve.

(i) Subject to Section 9(a) relating to Capitalization Adjustments, the aggregate number of shares of Common Stock that may be issued pursuant to Stock Awards from and after the Effective Date will not exceed 4,182,404 shares (the ***Share Reserve***), which is the sum of (A) 1,681,294 shares, *plus* (ii) 2,501,110 shares that are Returning Shares as such shares become available from time to time.

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(ii) In addition, the Share Reserve will automatically increase on January 1st of each year, for a period of not more than ten years, commencing on January 1st of the year following the year in which the Effective Date occurs and ending on (and including) January 1, 2026, in an amount equal to 4% of the total number of shares of Capital Stock outstanding on December 31st of the preceding calendar year. Notwithstanding the foregoing, the Board may act prior to January 1st of a given year to provide that there will be no January 1st increase in the Share Reserve for such year or that the increase in the Share Reserve for such year will be a lesser number of shares of Common Stock than would otherwise occur pursuant to the preceding sentence

(iii) For clarity, the Share Reserve in this Section 3(a) is a limitation on the number of shares of Common Stock that may be issued pursuant to the Plan. Accordingly, this Section 3(a) does not limit the granting of Stock Awards except as provided in Section 7(a). Shares may be issued in connection with a merger or acquisition as permitted by NASDAQ Listing Rule 5635(c) or, if applicable, NYSE Listed Company Manual Section 303A.08, AMEX Company Guide Section 711 or other applicable rule, and such issuance will not reduce the number of shares available for issuance under the Plan.

(b) Reversion of Shares to the Share Reserve. If a Stock Award or any portion thereof (i) expires or otherwise terminates without all of the shares covered by such Stock Award having been issued or (ii) is settled in cash (i.e., the Participant receives cash rather than stock), such expiration, termination or settlement will not reduce (or otherwise offset) the number of shares of Common Stock that may be available for issuance under the Plan. If any shares of Common Stock issued pursuant to a Stock Award are forfeited back to or repurchased by the Company because of the failure to meet a contingency or condition required to vest such shares in the Participant, then the shares that are forfeited or repurchased will revert to and again become available for issuance under the Plan. Any shares reacquired by the Company in satisfaction of tax withholding obligations on a Stock Award or as consideration for the exercise or purchase price of a Stock Award will again become available for issuance under the Plan.

(c) Incentive Stock Option Limit. Subject to the Share Reserve and Section 9(a) relating to Capitalization Adjustments, the aggregate maximum number of shares of Common Stock that may be issued pursuant to the exercise of Incentive Stock Options will be 20,912,020 shares of Common Stock.

(d) Section 162(m) Limitations. Subject to the Share Reserve and Section 9(a) relating to Capitalization Adjustments, at such time as the Company may be subject to the applicable provisions of Section 162(m) of the Code, the following limitations will apply; *provided, however,* that if any additional Awards are granted to any Participant during any calendar year in excess of the limits below, compensation attributable to such additional Awards will not satisfy the requirements to be considered qualified performance-based compensation under Section 162(m) of the Code unless such additional Award is approved by the Company s stockholders.

(i) A maximum of One Million Five Hundred Thousand (1,500,000) shares of Common Stock subject to Options and SARs whose value is determined by reference to an increase over an exercise or strike price of at least one hundred percent (100%) of the Fair Market Value on the date any such Option or SAR is granted may be granted to any one Participant during any one calendar year.

(ii) A maximum of One Million Five Hundred Thousand (1,500,000) shares of Common Stock subject to Performance Stock Awards may be granted to any one Participant during any one calendar year (whether the grant, vesting or exercise is contingent upon the attainment during the Performance Period of the Performance Goals).

(iii) A maximum of Three Million Dollars ($3,000,000) subject to Performance Cash Awards may be granted to any one Participant during any one calendar year.

For purposes of this Section 3(d): (1) if a Performance Stock Award is in the form of an Option or SAR, it will count only against the Performance Stock Award limit set forth in Section 3(d)(ii); (2) if a Performance

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Stock Award may be paid in the form of cash, it will count only against the Performance Stock Award limit set forth in Section 3(d)(ii); and (3) if a Performance Cash Award may be paid in the form of Common Stock, it will count only against the Performance Cash Award limit set forth in Section 3(d)(iii).

(e) Limits on Grants to Non-Employee Directors. The maximum number of shares of Common Stock subject to Stock Awards granted under the Plan or otherwise during any one calendar year to any Non-Employee Director, taken together with any cash fees paid by the Company to such Non-Employee Director during such calendar year for service on the Board, will not exceed Five Hundred Thousand Dollars ($500,000) in total value (calculating the value of any such Stock Awards based on the grant date fair value of such Stock Awards for financial reporting purposes), or, with respect to the calendar year in which a Non-Employee Director is first appointed or elected to the Board, One Million Dollars ($1,000,000). The Board may make exceptions to the applicable limit in this Section 3(e) for individual Non-Employee Directors in extraordinary circumstances, as the Board may determine in its discretion, provided that the Non-Employee Director receiving such additional compensation may not participate in the decision to award such compensation.

(f) Source of Shares. The stock issuable under the Plan will be shares of authorized but unissued or reacquired Common Stock, including shares repurchased by the Company on the open market or otherwise.

4. ELIGIBILITY.

(a) Eligibility for Specific Stock Awards. Incentive Stock Options may be granted only to employees of the Company or a parent corporation or subsidiary corporation thereof (as such terms are defined in Sections 424(e) and 424(f) of the Code). Stock Awards other than Incentive Stock Options may be granted to Employees, Directors and Consultants; *provided, however*, that Stock Awards may not be granted to Employees, Directors and Consultants who are providing Continuous Service only to any parent of the Company, as such term is defined in Rule 405, unless (i) the stock underlying such Stock Awards is treated as service recipient stock under Section 409A of the Code (for example, because the Stock Awards are granted pursuant to a corporate transaction such as a spin off transaction) or (ii) the Company, in consultation with its legal counsel, has determined that such Stock Awards are otherwise exempt from or alternatively comply with Section 409A of the Code.

(b) Ten Percent Stockholders. A Ten Percent Stockholder will not be granted an Incentive Stock Option unless the exercise price of such Option is at least one hundred ten percent (110%) of the Fair Market Value on the date of grant and the Option is not exercisable after the expiration of five (5) years from the date of grant.

5. PROVISIONS RELATING TO OPTIONS AND STOCK APPRECIATION RIGHTS.

Each Option or SAR Agreement will be in such form and will contain such terms and conditions as the Board deems appropriate. All Options will be separately designated Incentive Stock Options or Nonstatutory Stock Options at the time of grant, and, if certificates are issued, a separate certificate or certificates will be issued for shares of Common Stock purchased on exercise of each type of Option. If an Option is not specifically designated as an Incentive Stock Option, or if an Option is designated as an Incentive Stock Option but some portion or all of the Option fails to qualify as an Incentive Stock Option under the applicable rules, then the Option (or portion thereof) will be a Nonstatutory Stock Option. The terms and conditions of separate Option or SAR Agreements need not be identical; *provided, however*, that each Award Agreement will conform to (through incorporation of the provisions hereof by reference in the applicable Award Agreement or otherwise) the substance of each of the following provisions:

(a) Term. Subject to the provisions of Section 4(b) regarding Ten Percent Stockholders, no Option or SAR will be exercisable after the expiration of ten (10) years from the date of its grant or such shorter period specified in the Award Agreement.

(b) Exercise Price. Subject to the provisions of Section 4(b) regarding Ten Percent Stockholders, the exercise or strike price of each Option or SAR will be not less than one hundred percent (100%) of the Fair

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Market Value of the Common Stock subject to the Option or SAR on the date the Award is granted. Notwithstanding the foregoing, an Option or SAR may be granted with an exercise or strike price lower than one hundred percent (100%) of the Fair Market Value of the Common Stock subject to the Award if such Award is granted pursuant to an assumption of or substitution for another option or stock appreciation right pursuant to a Corporate Transaction and in a manner consistent with the provisions of Section 409A of the Code and, if applicable, Section 424(a) of the Code. Each SAR will be denominated in shares of Common Stock equivalents.

(c) Purchase Price for Options. The purchase price of Common Stock acquired pursuant to the exercise of an Option may be paid, to the extent permitted by applicable law and as determined by the Board in its sole discretion, by any combination of the methods of payment set forth below. The Board will have the authority to grant Options that do not permit all of the following methods of payment (or that otherwise restrict the ability to use certain methods) and to grant Options that require the consent of the Company to use a particular method of payment. The permitted methods of payment are as follows:

(i) by cash (including electronic funds transfers), check, bank draft or money order payable to the Company;

(ii) pursuant to a program developed under Regulation T as promulgated by the Federal Reserve Board that, prior to the issuance of the stock subject to the Option, results in either the receipt of cash (or check) by the Company or the receipt of irrevocable instructions to pay the aggregate exercise price to the Company from the sales proceeds;

(iii) by delivery to the Company (either by actual delivery or attestation) of shares of Common Stock;

(iv) if an Option is a Nonstatutory Stock Option, by a net exercise arrangement pursuant to which the Company will reduce the number of shares of Common Stock issuable upon exercise by the largest whole number of shares with a Fair Market Value that does not exceed the aggregate exercise price; *provided, however*, that the Company will accept a cash or other payment from the Participant to the extent of any remaining balance of the aggregate exercise price not satisfied by such reduction in the number of whole shares to be issued. Shares of Common Stock will no longer be subject to an Option and will not be exercisable thereafter to the extent that (A) shares issuable upon exercise are used to pay the exercise price pursuant to the net exercise, (B) shares are delivered to the Participant as a result of such exercise, and (C) shares are withheld to satisfy tax withholding obligations; or

(v) in any other form of legal consideration that may be acceptable to the Board and specified in the applicable Award Agreement.

(d) Exercise and Payment of a SAR. To exercise any outstanding SAR, the Participant must provide written notice of exercise to the Company in compliance with the provisions of the Award Agreement evidencing such SAR. The appreciation distribution payable on the exercise of a SAR will be not greater than an amount equal to the excess of (A) the aggregate Fair Market Value (on the date of the exercise of the SAR) of a number of shares of Common Stock equal to the number of Common Stock equivalents in which the Participant is vested under such SAR, and with respect to which the Participant is exercising the SAR on such date, over (B) the aggregate strike price of the number of Common Stock equivalents with respect to which the Participant is exercising the SAR on such date. The appreciation distribution may be paid in Common Stock, in cash, in any combination of the two or in any other form of consideration, as determined by the Board and contained in the Award Agreement evidencing such SAR.

(e) Transferability of Options and SARs. The Board may, in its sole discretion, impose such limitations on the transferability of Options and SARs as the Board will determine. In the absence of such a determination by the Board to the contrary, the following restrictions on the transferability of Options and SARs will apply:

(i) Restrictions on Transfer. An Option or SAR will not be transferable, except by will or by the laws of descent and distribution (or pursuant to Sections 5(e)(ii) and 5(e)(iii)), and will be exercisable during the

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lifetime of the Participant only by the Participant. The Board may permit transfer of the Option or SAR in a manner that is not prohibited by applicable tax and securities laws. Except as explicitly provided in the Plan, neither an Option nor a SAR may be transferred for consideration.

(ii) Domestic Relations Orders. Subject to the approval of the Board or a duly authorized Officer, an Option or SAR may be transferred pursuant to the terms of a domestic relations order, official marital settlement agreement or other divorce or separation instrument as permitted by Treasury Regulations Section 1.421-1(b)(2). If an Option is an Incentive Stock Option, such Option may be deemed to be a Nonstatutory Stock Option as a result of such transfer.

(iii) Beneficiary Designation. Subject to the approval of the Board or a duly authorized Officer, a Participant may, by delivering written notice to the Company, in a form approved by the Company (or the designated broker), designate a third party who, upon the death of the Participant, will thereafter be entitled to exercise the Option or SAR and receive the Common Stock or other consideration resulting from such exercise. In the absence of such a designation, upon the death of the Participant, the executor or administrator of the Participant s estate will be entitled to exercise the Option or SAR and receive the Common Stock or other consideration resulting from such exercise. However, the Company may prohibit designation of a beneficiary at any time, including due to any conclusion by the Company that such designation would be inconsistent with the provisions of applicable laws.

(f) Vesting Generally. The total number of shares of Common Stock subject to an Option or SAR may vest and become exercisable in periodic installments that may or may not be equal. The Option or SAR may be subject to such other terms and conditions on the time or times when it may or may not be exercised (which may be based on the satisfaction of Performance Goals or other criteria) as the Board may deem appropriate. The vesting provisions of individual Options or SARs may vary. The provisions of this Section 5(f) are subject to any Option or SAR provisions governing the minimum number of shares of Common Stock as to which an Option or SAR may be exercised.

(g) Termination of Continuous Service. Except as otherwise provided in the applicable Award Agreement or other written agreement between a Participant and the Company or an Affiliate, if a Participant s Continuous Service terminates (other than for Cause and other than upon the Participant s death or Disability), the Participant may exercise his or her Option or SAR (to the extent that the Participant was entitled to exercise such Option or SAR as of the date of termination of Continuous Service), but only within such period of time ending on the earlier of (i) the date that is three (3) months following such termination of Continuous Service (or such longer or shorter period specified in the Award Agreement), and (ii) the expiration of the term of the Option or SAR as set forth in the Award Agreement. Except as otherwise provided in the applicable Award Agreement, if, after such termination of Continuous Service, the Participant does not exercise his or her Option or SAR (as applicable) within the applicable time frame, the Option or SAR (as applicable) will terminate.

(h) Extension of Termination Date. Except as otherwise provided in the applicable Award Agreement or other written agreement between a Participant and the Company or an Affiliate, if the exercise of an Option or SAR following the termination of a Participant s Continuous Service (other than for Cause and other than upon the Participant s death or Disability) would be prohibited at any time solely because the issuance of shares of Common Stock would violate the registration requirements under the Securities Act, then the Option or SAR will terminate on the earlier of (i) the expiration of a total period of time (that need not be consecutive) equal to the applicable post-termination exercise period after the termination of the Participant s Continuous Service during which the exercise of the Option or SAR would not be in violation of such registration requirements, or (ii) the expiration of the term of the Option or SAR as set forth in the applicable Award Agreement. In addition, except as otherwise provided in the applicable Award Agreement or other written agreement between a Participant and the Company or an Affiliate, if the sale of any Common Stock received upon exercise of an Option or SAR following the termination of a Participant s Continuous Service (other than for Cause) would violate the Company s insider trading policy, then the

Option or SAR will terminate on the earlier of (i) the expiration of a

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total period of time (that need not be consecutive) equal to the applicable post-termination exercise period after the termination of the Participant s Continuous Service during which the sale of the Common Stock received upon exercise of the Option or SAR would not be in violation of the Company s insider trading policy, or (ii) the expiration of the term of the Option or SAR as set forth in the applicable Award Agreement.

(i) Disability of Participant. Except as otherwise provided in the applicable Award Agreement or other written agreement between a Participant and the Company or an Affiliate, if a Participant s Continuous Service terminates as a result of the Participant s Disability, the Participant may exercise his or her Option or SAR (to the extent that the Participant was entitled to exercise such Option or SAR as of the date of termination of Continuous Service), but only within such period of time ending on the earlier of (i) the date that is twelve (12) months following such termination of Continuous Service (or such longer or shorter period specified in the Award Agreement), and (ii) the expiration of the term of the Option or SAR as set forth in the Award Agreement. If, after such termination of Continuous Service, the Participant does not exercise his or her Option or SAR (as applicable) within the applicable time frame, the Option or SAR (as applicable) will terminate.

(j) Death of Participant. Except as otherwise provided in the applicable Award Agreement or other written agreement between a Participant and the Company or an Affiliate, if (i) a Participant s Continuous Service terminates as a result of the Participant s death, or (ii) a Participant dies within the period (if any) specified in the Award Agreement for exercisability after the termination of the Participant s Continuous Service (for a reason other than death), then the Participant s Option or SAR may be exercised (to the extent that the Participant was entitled to exercise such Option or SAR as of the date of death) by the Participant s estate, by a person who acquired the right to exercise the Option or SAR by bequest or inheritance, or by a person designated to exercise the Option or SAR upon the Participant s death, but only within such period of time ending on the earlier of (i) the date that is eighteen (18) months following the date of death (or such longer or shorter period specified in the Award Agreement), and (ii) the expiration of the term of the Option or SAR as set forth in the Award Agreement. If, after the Participant s death, the Option or SAR (as applicable) is not exercised within the applicable time frame, the Option or SAR (as applicable) will terminate.

(k) Termination for Cause. Except as explicitly provided otherwise in the applicable Award Agreement or other individual written agreement between a Participant and the Company or an Affiliate, if a Participant s Continuous Service is terminated for Cause, the Participant s Option or SAR will terminate immediately upon such termination of Continuous Service, and the Participant will be prohibited from exercising his or her Option or SAR from and after the time of such termination of Continuous Service.

(l) Non-Exempt Employees. If an Option or SAR is granted to an Employee who is a non-exempt employee for purposes of the Fair Labor Standards Act of 1938, as amended, the Option or SAR will not be first exercisable for any shares of Common Stock until at least six (6) months following the date of grant of the Option or SAR (although the Award may vest prior to such date). Consistent with the provisions of the Worker Economic Opportunity Act, (i) if such non-exempt employee dies or suffers a Disability, (ii) upon a Corporate Transaction in which such Option or SAR is not assumed, continued or substituted, (iii) upon a Change in Control, or (iv) upon the Participant s retirement (as such term may be defined in the Participant s Award Agreement, in another written agreement between the Participant and the Company or an Affiliate, or, if no such definition, in accordance with the Company s then current employment policies and guidelines), the vested portion of any Options and SARs may be exercised earlier than six (6) months following the date of grant. The foregoing provision is intended to operate so that any income derived by a non-exempt employee in connection with the exercise or vesting of an Option or SAR will be exempt from his or her regular rate of pay. To the extent permitted and/or required for compliance with the Worker Economic Opportunity Act to ensure that any income derived by a non-exempt employee in connection with the exercise, vesting or issuance of any shares under any other Stock Award will be exempt from the employee s regular rate of pay,

the provisions of this Section 5(l) will apply to all Stock Awards and are hereby incorporated by reference into such Stock Award Agreements.

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6. Provisions of Stock Awards Other than Options and SARs.

(a) Restricted Stock Awards. Each Restricted Stock Award Agreement will be in such form and will contain such terms and conditions as the Board deems appropriate. To the extent consistent with the Company s bylaws, at the Board s election, shares of Common Stock underlying a Restricted Stock Award may be (i) held in book entry form subject to the Company s instructions until any restrictions relating to the Restricted Stock Award lapse, or (ii) evidenced by a certificate, which certificate will be held in such form and manner as determined by the Board. The terms and conditions of separate Restricted Stock Award Agreements need not be identical; *provided, however*, that each Restricted Stock Award Agreement will conform to (through incorporation of the provisions hereof by reference in the applicable Award Agreement or otherwise) the substance of each of the following provisions:

(i) Consideration. A Restricted Stock Award may be awarded in consideration for (A) cash (including electronic funds transfers), check, bank draft or money order payable to the Company, (B) past services to the Company or an Affiliate, or (C) any other form of legal consideration (including future services) that may be acceptable to the Board, in its sole discretion, and permissible under applicable law.

(ii) Vesting. Shares of Common Stock awarded under a Restricted Stock Award Agreement may be subject to forfeiture to or repurchase by the Company in accordance with a vesting schedule to be determined by the Board.

(iii) Termination of Continuous Service. If a Participant s Continuous Service terminates, the Company may receive through a forfeiture condition or a repurchase right any or all of the shares of Common Stock held by the Participant that have not vested as of the date of such termination under the terms of the Participant s Restricted Stock Award Agreement.

(iv) Transferability. Rights to acquire shares of Common Stock under a Restricted Stock Award Agreement will be transferable by the Participant only upon such terms and conditions as are set forth in the Restricted Stock Award Agreement, as the Board will determine in its sole discretion, so long as Common Stock awarded under the Restricted Stock Award Agreement remains subject to the terms of the Restricted Stock Award Agreement.

(v) Dividends. A Restricted Stock Award Agreement may provide that any dividends paid on Restricted Stock will be subject to the same vesting and forfeiture restrictions as apply to the shares subject to the Restricted Stock Award to which they relate.

(b) Restricted Stock Unit Awards. Each Restricted Stock Unit Award Agreement will be in such form and will contain such terms and conditions as the Board deems appropriate. The terms and conditions of separate Restricted Stock Unit Award Agreements need not be identical; *provided, however*, that each Restricted Stock Unit Award Agreement will conform to (through incorporation of the provisions hereof by reference in the applicable Award Agreement or otherwise) the substance of each of the following provisions:

(i) Consideration. At the time of grant of a Restricted Stock Unit Award, the Board will determine the consideration, if any, to be paid by the Participant upon delivery of each share of Common Stock subject to the Restricted Stock Unit Award. The consideration to be paid (if any) by the Participant for each share of Common Stock subject to a Restricted Stock Unit Award may be paid in any form of legal consideration that may be acceptable to the Board, in its sole discretion, and permissible under applicable law.

(ii) Vesting. At the time of the grant of a Restricted Stock Unit Award, the Board may impose such restrictions on or conditions to the vesting of the Restricted Stock Unit Award as it, in its sole discretion, deems appropriate.

(iii) Payment. A Restricted Stock Unit Award may be settled by the delivery of shares of Common Stock, their cash equivalent, any combination thereof or in any other form of consideration, as determined by the Board and contained in the Restricted Stock Unit Award Agreement.

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(iv) Additional Restrictions. At the time of the grant of a Restricted Stock Unit Award, the Board, as it deems appropriate, may impose such restrictions or conditions that delay the delivery of the shares of Common Stock (or their cash equivalent) subject to the Restricted Stock Unit Award to a time after the vesting of the Restricted Stock Unit Award.

(v) Dividend Equivalents. Dividend equivalents may be credited in respect of shares of Common Stock covered by a Restricted Stock Unit Award, as determined by the Board and contained in the Restricted Stock Unit Award Agreement. At the sole discretion of the Board, such dividend equivalents may be converted into additional shares of Common Stock covered by the Restricted Stock Unit Award in such manner as determined by the Board. Any additional shares covered by the Restricted Stock Unit Award credited by reason of such dividend equivalents will be subject to all of the same terms and conditions of the underlying Restricted Stock Unit Award Agreement to which they relate.

(vi) Termination of Continuous Service. Except as otherwise provided in the applicable Restricted Stock Unit Award Agreement or other written agreement between a Participant and the Company or an Affiliate, if a Participant s Continuous Service terminates, any portion of the Participant s Restricted Stock Unit Award that has not vested as of the date of such termination will be forfeited upon such termination.

(c) Performance Awards.

(i) Performance Stock Awards. A Performance Stock Award is a Stock Award (covering a number of shares not in excess of that set forth in Section 3(d)(ii)) that is payable (including that may be granted, vest or be exercised) contingent upon the attainment during a Performance Period of specified Performance Goals. A Performance Stock Award may, but need not, require the Participant s completion of a specified period of Continuous Service. The length of any Performance Period, the Performance Goals to be achieved during the Performance Period, and the measure of whether and to what degree such Performance Goals have been attained will be conclusively determined by the Committee (or, to the extent that an Award is not intended to qualify as performance-based compensation under Section 162(m) of the Code, the Board or the Committee), in its sole discretion. In addition, to the extent permitted by applicable law and the applicable Award Agreement, the Board or the Committee may determine that cash may be used in payment of Performance Stock Awards.

(ii) Performance Cash Awards. A Performance Cash Award is a cash award (for a dollar value not in excess of that set forth in Section 3(d)(iii)) that is payable contingent upon the attainment during a Performance Period of specified Performance Goals. A Performance Cash Award may, but need not, require the Participant s completion of a specified period of Continuous Service. The length of any Performance Period, the Performance Goals to be achieved during the Performance Period, and the measure of whether and to what degree such Performance Goals have been attained will be conclusively determined by the Committee (or, to the extent that an Award is not intended to qualify as performance-based compensation under Section 162(m) of the Code, the Board or the Committee), in its sole discretion. The Board or the Committee may specify the form of payment of Performance Cash Awards, which may be cash or other property, or may provide for a Participant to have the option for his or her Performance Cash Award, or such portion thereof as the Board or the Committee may specify, to be paid in whole or in part in cash or other property.

(iii) Committee and Board Discretion. With respect to any Performance Stock Award or Performance Cash Award, the Committee (or, to the extent that an Award is not intended to qualify as performance-based compensation under Section 162(m) of the Code, the Board or the Committee) retains the discretion to (A) reduce or eliminate the compensation or economic benefit due upon attainment of the Performance Goals on the basis of any considerations as the Committee or Board (as applicable), in its sole discretion, may determine and (B) define the manner of

calculating the Performance Criteria it selects to use for a Performance Period.

(iv) Section 162(m) Compliance. With respect to any Award intended to qualify as performance-based compensation under Section 162(m) of the Code, unless otherwise permitted under Section 162(m) of the

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Code, the Committee will establish the Performance Goals applicable to, and the formula for calculating the amount payable under, the Award no later than the earlier of (A) the date ninety (90) days after the commencement of the applicable Performance Period, and (B) the date on which twenty-five percent (25%) of the Performance Period has elapsed, and in any event at a time when the achievement of the applicable Performance Goals remains substantially uncertain. Prior to the payment of any compensation under an Award intended to qualify as performance-based compensation under Section 162(m) of the Code, the Committee will certify the extent to which any Performance Goals and any other material terms under such Award have been satisfied (other than in cases where such Performance Goals or terms relate solely to the increase in the value of the Common Stock).

(d) Other Stock Awards. Other forms of Stock Awards valued in whole or in part by reference to, or otherwise based on, Common Stock, including the appreciation in value thereof (*e.g.*, options or stock appreciation rights with an exercise price or strike price less than one hundred percent (100%) of the Fair Market Value of the Common Stock at the time of grant) may be granted either alone or in addition to Stock Awards granted under Section 5 and this Section 6. Subject to the provisions of the Plan, the Board will have sole and complete authority to determine the persons to whom and the time or times at which such Other Stock Awards will be granted, the number of shares of Common Stock (or the cash equivalent thereof) to be granted pursuant to such Other Stock Awards and all other terms and conditions of such Other Stock Awards.

7. COVENANTS OF THE COMPANY.

(a) Availability of Shares. The Company will keep available at all times the number of shares of Common Stock reasonably required to satisfy then-outstanding Stock Awards.

(b) Securities Law Compliance. The Company will seek to obtain from each regulatory commission or agency having jurisdiction over the Plan the authority required to grant Stock Awards and to issue and sell shares of Common Stock upon exercise of the Stock Awards; *provided, however*, that this undertaking will not require the Company to register under the Securities Act the Plan, any Stock Award or any Common Stock issued or issuable pursuant to any such Stock Award. If, after reasonable efforts and at a reasonable cost, the Company is unable to obtain from any such regulatory commission or agency the authority that counsel for the Company deems necessary for the lawful issuance and sale of Common Stock under the Plan, the Company will be relieved from any liability for failure to issue and sell Common Stock upon exercise of such Stock Awards unless and until such authority is obtained. A Participant will not be eligible for the grant of an Award or the subsequent issuance of cash or Common Stock pursuant to the Award if such grant or issuance would be in violation of any applicable securities law.

(c) No Obligation to Notify or Minimize Taxes. The Company will have no duty or obligation to any Participant to advise such holder as to the time or manner of exercising a Stock Award. Furthermore, the Company will have no duty or obligation to warn or otherwise advise such holder of a pending termination or expiration of an Award or a possible period in which the Award may not be exercised. The Company has no duty or obligation to minimize the tax consequences of an Award to the holder of such Award.

8. MISCELLANEOUS.

(a) Use of Proceeds from Sales of Common Stock. Proceeds from the sale of shares of Common Stock issued pursuant to Stock Awards will constitute general funds of the Company.

(b) Corporate Action Constituting Grant of Awards. Corporate action constituting a grant by the Company of an Award to any Participant will be deemed completed as of the date of such corporate action, unless otherwise determined by the Board, regardless of when the instrument, certificate or letter evidencing the Award is communicated to, or actually received or accepted by, the Participant. In the event that the corporate records (*e.g.*, Board consents, resolutions or minutes) documenting the corporate action constituting the grant

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contain terms (*e.g.*, exercise price, vesting schedule or number of shares) that are inconsistent with those in the Award Agreement or related grant documents as a result of a clerical error in the papering of the Award Agreement or related grant documents, the corporate records will control and the Participant will have no legally binding right to the incorrect term in the Award Agreement or related grant documents.

(c) Stockholder Rights. No Participant will be deemed to be the holder of, or to have any of the rights of a holder with respect to, any shares of Common Stock subject to an Award unless and until (i) such Participant has satisfied all requirements for exercise of, or the issuance of shares of Common Stock under, the Award pursuant to its terms, and (ii) the issuance of the Common Stock subject to such Award has been entered into the books and records of the Company.

(d) No Employment or Other Service Rights. Nothing in the Plan, any Award Agreement or any other instrument executed thereunder or in connection with any Award granted pursuant thereto will confer upon any Participant any right to continue to serve the Company or an Affiliate in the capacity in effect at the time the Award was granted or will affect the right of the Company or an Affiliate to terminate (i) the employment of an Employee with or without notice and with or without cause, (ii) the service of a Consultant pursuant to the terms of such Consultant s agreement with the Company or an Affiliate, or (iii) the service of a Director pursuant to the bylaws of the Company or an Affiliate, and any applicable provisions of the corporate law of the state in which the Company or the Affiliate is incorporated, as the case may be.

(e) Change in Time Commitment. In the event a Participant s regular level of time commitment in the performance of his or her services for the Company or any Affiliate is reduced (for example, and without limitation, if the Participant is an Employee of the Company and the Employee has a change in status from a full-time Employee to a part-time Employee or takes an extended leave of absence) after the date of grant of any Award to the Participant, the Board has the right in its sole discretion to (i) make a corresponding reduction in the number of shares or cash amount subject to any portion of such Award that is scheduled to vest or become payable after the date of such change in time commitment, and (ii) in lieu of or in combination with such a reduction, extend the vesting or payment schedule applicable to such Award. In the event of any such reduction, the Participant will have no right with respect to any portion of the Award that is so reduced or extended.

(f) Incentive Stock Option Limitations. To the extent that the aggregate Fair Market Value (determined at the time of grant) of Common Stock with respect to which Incentive Stock Options are exercisable for the first time by any Participant during any calendar year (under all plans of the Company and any Affiliates) exceeds one hundred thousand dollars ($100,000) (or such other limit established in the Code) or otherwise does not comply with the rules governing Incentive Stock Options, the Options or portions thereof that exceed such limit (according to the order in which they were granted) or otherwise do not comply with such rules will be treated as Nonstatutory Stock Options, notwithstanding any contrary provision of the applicable Option Agreement(s).

(g) Investment Assurances. The Company may require a Participant, as a condition of exercising or acquiring Common Stock under any Award, (i) to give written assurances satisfactory to the Company as to the Participant s knowledge and experience in financial and business matters and/or to employ a purchaser representative reasonably satisfactory to the Company who is knowledgeable and experienced in financial and business matters and that he or she is capable of evaluating, alone or together with the purchaser representative, the merits and risks of exercising the Award, and (ii) to give written assurances satisfactory to the Company stating that the Participant is acquiring Common Stock subject to the Award for the Participant s own account and not with any present intention of selling or otherwise distributing the Common Stock. The foregoing requirements, and any assurances given pursuant to such requirements, will be inoperative if (A) the issuance of the shares upon the exercise or acquisition of Common Stock under the Stock Award has been registered under a then currently effective registration statement under the Securities

Act, or (B) as to any particular requirement, a determination is made by counsel for the Company that such requirement need not be met in the circumstances under the then applicable securities laws. The Company may, upon advice of counsel to the Company, place legends on stock certificates issued under the Plan as such counsel deems necessary or appropriate in order to comply with applicable securities laws, including, but not limited to, legends restricting the transfer of the Common Stock.

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(h) Withholding Obligations. Unless prohibited by the terms of an Award Agreement, the Company may, in its sole discretion, satisfy any federal, state or local tax withholding obligation relating to an Award by any of the following means or by a combination of such means: (i) causing the Participant to tender a cash payment; (ii) withholding shares of Common Stock from the shares of Common Stock issued or otherwise issuable to the Participant in connection with the Stock Award; *provided, however,* that no shares of Common Stock are withheld with a value exceeding the minimum amount of tax required to be withheld by law (or such lesser amount as may be necessary to avoid classification of the Stock Award as a liability for financial accounting purposes); (iii) withholding cash from an Award settled in cash; (iv) withholding payment from any amounts otherwise payable to the Participant; or (v) by such other method as may be set forth in the Award Agreement.

(i) Electronic Delivery. Any reference herein to a written agreement or document will include any agreement or document delivered electronically, filed publicly at www.sec.gov (or any successor website thereto) or posted on the Company s intranet (or other shared electronic medium controlled by the Company to which the Participant has access).

(j) Deferrals. To the extent permitted by applicable law, the Board, in its sole discretion, may determine that the delivery of Common Stock or the payment of cash, upon the exercise, vesting or settlement of all or a portion of any Award may be deferred and may establish programs and procedures for deferral elections to be made by Participants. Deferrals by Participants will be made in accordance with Section 409A of the Code. Consistent with Section 409A of the Code, the Board may provide for distributions while a Participant is still an employee or otherwise providing services to the Company. The Board is authorized to make deferrals of Awards and determine when, and in what annual percentages, Participants may receive payments, including lump sum payments, following the Participant s termination of Continuous Service, and implement such other terms and conditions consistent with the provisions of the Plan and in accordance with applicable law.

(k) Section 409A Compliance. Unless otherwise expressly provided for in an Award Agreement, the Plan and Award Agreements will be interpreted to the greatest extent possible in a manner that makes the Plan and the Awards granted hereunder exempt from Section 409A of the Code, and, to the extent not so exempt, in compliance with Section 409A of the Code. If the Board determines that any Award granted hereunder is not exempt from and is therefore subject to Section 409A of the Code, the Award Agreement evidencing such Award will incorporate the terms and conditions necessary to avoid the consequences specified in Section 409A(a)(1) of the Code and to the extent an Award Agreement is silent on terms necessary for compliance, such terms are hereby incorporated by reference into the Award Agreement. Notwithstanding anything to the contrary in this Plan (and unless the Award Agreement specifically provides otherwise), if the shares of Common Stock are publicly traded, and if a Participant holding an Award that constitutes deferred compensation under Section 409A of the Code is a specified employee for purposes of Section 409A of the Code, no distribution or payment of any amount that is due because of a separation from service (as defined in Section 409A of the Code without regard to alternative definitions thereunder) will be issued or paid before the date that is six (6) months following the date of the Participant s separation from service or, if earlier, the date of the Participant s death, unless such distribution or payment may be made in a manner that complies with Section 409A of the Code, and any amounts so deferred will be paid in a lump sum on the day after such six (6) month period elapses, with the balance paid thereafter on the original schedule.

(l) Clawback/Recovery. All Awards granted under the Plan will be subject to recoupment in accordance with any clawback policy that the Company is required to adopt pursuant to the listing standards of any national securities exchange or association on which the Company s securities are listed or as is otherwise required by the Dodd-Frank Wall Street Reform and Consumer Protection Act or other applicable law. In addition, the Board may impose such other clawback, recovery or recoupment provisions in an Award Agreement as the Board determines necessary or appropriate, including, but not limited to, a reacquisition right in respect of previously acquired shares of Common

Stock or other cash or property upon the occurrence of Cause. No recovery of compensation under such a clawback policy will be an event giving rise to a right to resign for good reason or constructive termination (or similar term) under any agreement with the Company.

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9. Adjustments upon Changes in Common Stock; Other Corporate Events.

(a) Capitalization Adjustments. In the event of a Capitalization Adjustment, the Board will appropriately and proportionately adjust: (i) the class(es) and maximum number of securities subject to the Plan pursuant to Section 3(a); (ii) the class(es) and maximum number of securities that may be issued pursuant to the exercise of Incentive Stock Options pursuant to Section 3(c); (iii) the class(es) and maximum number of securities that may be awarded to any Participant pursuant to Section 3(d); (iv) the class(es) and maximum number of securities that may be awarded to any Non-Employee Director pursuant to Section 3(e); and (v) the class(es) and number of securities and price per share of stock subject to outstanding Stock Awards. The Board will make such adjustments, and its determination will be final, binding and conclusive.

(b) Dissolution or Liquidation. Except as otherwise provided in the applicable Stock Award Agreement or other written agreement between a Participant and the Company or an Affiliate, in the event of a dissolution or liquidation of the Company, all outstanding Stock Awards (other than Stock Awards consisting of vested and outstanding shares of Common Stock not subject to a forfeiture condition or the Company s right of repurchase) will terminate immediately prior to the completion of such dissolution or liquidation, and the shares of Common Stock subject to a forfeiture condition or the Company s right of repurchase may be reacquired or repurchased by the Company notwithstanding the fact that the holder of such Stock Award is providing Continuous Service; *provided, however*, that the Board may, in its sole discretion, cause some or all Stock Awards to become fully vested, exercisable and/or no longer subject to forfeiture or repurchase (to the extent such Stock Awards have not previously expired or terminated) before the dissolution or liquidation is completed but contingent on its completion.

(c) Corporate Transactions. In the event of a Corporate Transaction, notwithstanding any other provision of the Plan, the Board may take one or more of the following actions with respect to Stock Awards, contingent upon the closing or consummation of the Corporate Transaction, unless otherwise provided in the instrument evidencing the Stock Award, in any other written agreement between the Company or any Affiliate and the Participant or in any director compensation policy of the Company, or unless otherwise expressly provided by the Board at the time of grant of the Stock Award:

(i) arrange for the surviving corporation or acquiring corporation (or the surviving or acquiring corporation s parent company) to assume or continue the Stock Award or to substitute a similar stock award for the Stock Award (including, but not limited to, an award to acquire the same consideration paid to the stockholders of the Company pursuant to the Corporate Transaction);

(ii) arrange for the assignment of any reacquisition or repurchase rights held by the Company in respect of Common Stock issued pursuant to the Stock Award to the surviving corporation or acquiring corporation (or the surviving or acquiring corporation s parent company);

(iii) accelerate the vesting, in whole or in part, of the Stock Award (and, if applicable, the time at which the Stock Award may be exercised) to a date prior to the effective time of such Corporate Transaction as the Board determines (or, if the Board does not determine such a date, to the date that is five (5) days prior to the effective date of the Corporate Transaction), with such Stock Award terminating if not exercised (if applicable) at or prior to the effective time of the Corporate Transaction; *provided, however*, that the Board may require Participants to complete and deliver to the Company a notice of exercise before the effective date of a Corporate Transaction, which exercise is contingent upon the effectiveness of such Corporate Transaction;

(iv) arrange for the lapse, in whole or in part, of any reacquisition or repurchase rights held by the Company with respect to the Stock Award;

(v) cancel or arrange for the cancellation of the Stock Award, to the extent not vested or not exercised prior to the effective time of the Corporate Transaction, and pay such cash consideration (including no consideration) as the Board, in its sole discretion, may consider appropriate; and

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(vi) cancel or arrange for the cancellation of the Stock Award, to the extent not vested or not exercised prior to the effective time of the Corporate Transaction, in exchange for a payment, in such form as may be determined by the Board equal to the excess, if any, of (A) the per share amount payable to holders of Common Stock in connection with the Corporate Transaction, over (B) the per share exercise price under the applicable Award. For clarity, this payment may be zero ($0) if the value of the property is equal to or less than the exercise price. In addition, any escrow, holdback, earnout or similar provisions in the definitive agreement for the Corporate Transaction may apply to such payment to the same extent and in the same manner as such provisions apply to the holders of Common Stock.

The Board need not take the same action or actions with respect to all Stock Awards or portions thereof or with respect to all Participants. The Board may take different actions with respect to the vested and unvested portions of a Stock Award.

In the event of a Corporate Transaction, unless otherwise provided in the instrument evidencing a Performance Cash Award or any other written agreement between the Company or any Affiliate and the Participant, or unless otherwise expressly provided by the Board, all Performance Cash Awards outstanding under the Plan will terminate prior to the effective time of such Corporate Transaction.

(d) Change in Control. A Stock Award may be subject to additional acceleration of vesting and exercisability upon or after a Change in Control as may be provided in the Stock Award Agreement for such Stock Award, in any other written agreement between the Company or any Affiliate and the Participant or in any director compensation policy of the Company, but in the absence of such provision, no such acceleration will occur.

10. Termination or Suspension of the Plan.
(a) The Board may suspend or terminate the Plan at any time. No Incentive Stock Option may be granted after the tenth (10th) anniversary of the earlier of (i) the Adoption Date or (ii) the date the Plan is approved by the stockholders of the Company. No Awards may be granted under the Plan while the Plan is suspended or after it is terminated.

(b) No Impairment of Rights. Suspension or termination of the Plan will not materially impair rights and obligations under any Award granted while the Plan is in effect except with the written consent of the affected Participant or as otherwise permitted in the Plan (including Section 2(b)(viii)) or an Award Agreement.

11. Effective Date of Plan.
This Plan will become effective on the Effective Date.

12. Choice of Law.
The laws of the State of Delaware will govern all questions concerning the construction, validity and interpretation of this Plan, without regard to that state s conflict of laws rules.

13. Definitions. As used in the Plan, the following definitions will apply to the capitalized terms indicated below:
(a) ***Adoption Date*** means November 30, 2016, which is the date the Plan was adopted by the Board.

(b) ***Affiliate*** means, at the time of determination, any parent or subsidiary of the Company as such terms are defined in Rule 405. The Board will have the authority to determine the time or times at which parent or subsidiary status is determined within the foregoing definition.

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(c) ***Award*** means a Stock Award or a Performance Cash Award.

(d) ***Award Agreement*** means a written agreement between the Company and a Participant evidencing the terms and conditions of an Award.

(e) ***Board*** means the Board of Directors of the Company.

(f) ***Capital Stock*** means each and every class of common stock of the Company, regardless of the number of votes per share.

(g) ***Capitalization Adjustment*** means any change that is made in, or other events that occur with respect to, the Common Stock subject to the Plan or subject to any Stock Award after the Adoption Date without the receipt of consideration by the Company through merger, consolidation, reorganization, recapitalization, reincorporation, stock dividend, dividend in property other than cash, large nonrecurring cash dividend, stock split, reverse stock split, liquidating dividend, combination of shares, exchange of shares, change in corporate structure or any similar equity restructuring transaction, as that term is used in Statement of Financial Accounting Standards Board Accounting Standards Codification Topic 718 (or any successor thereto). Notwithstanding the foregoing, the conversion of any convertible securities of the Company will not be treated as a Capitalization Adjustment.

(h) ***Cause*** will have the meaning ascribed to such term in any written agreement between a Participant and the Company or an Affiliate defining such term and, in the absence of such agreement, such term means, with respect to a Participant, the occurrence of any of the following events: (i) such Participant s commission of any felony or any crime involving fraud, dishonesty or moral turpitude under the laws of the United States or any state thereof; (ii) such Participant s attempted commission of, or participation in, a fraud or act of dishonesty against the Company; (iii) such Participant s intentional, material violation of any contract or agreement between such Participant and the Company or any statutory duty the Participant owes to the Company; (iv) such Participant s unauthorized use or disclosure of the Company s confidential information or trade secrets; or (v) such Participant s gross misconduct; *provided, however*, that the action or conduct described in clauses (iii) and (v) above will constitute Cause only if such action or conduct continues after the Company has provided such Participant with written notice thereof and thirty (30) days to cure the same. The determination that a termination of the Participant s Continuous Service is either for Cause or without Cause will be made by the Company, in its sole discretion. Any determination by the Company that the Continuous Service of a Participant was terminated with or without Cause for the purposes of outstanding Awards held by such Participant will have no effect upon any determination of the rights or obligations of the Company or such Participant for any other purpose.

(i) ***Change in Control*** means the occurrence, in a single transaction or in a series of related transactions, of any one or more of the following events:

(i) any Exchange Act Person becomes the Owner, directly or indirectly, of securities of the Company representing more than fifty percent (50%) of the combined voting power of the Company s then outstanding securities other than by virtue of a merger, consolidation or similar transaction. Notwithstanding the foregoing, a Change in Control will not be deemed to occur (A) on account of the acquisition of securities of the Company directly from the Company, (B) on account of the acquisition of securities of the Company by an investor, any affiliate thereof or any other Exchange Act Person that acquires the Company s securities in a transaction or series of related transactions the primary purpose of which is to obtain financing for the Company through the issuance of equity securities, or (C) solely because the level of Ownership held by any Exchange Act Person (the ***Subject Person***) exceeds the designated percentage threshold of the outstanding voting securities as a result of a repurchase or other acquisition of voting securities by the Company reducing the number of shares outstanding, provided that if a Change in Control would occur (but for the

operation of this sentence) as a result of the acquisition of voting securities by the Company, and after such share acquisition, the Subject Person becomes the Owner of any additional voting securities that, assuming the repurchase or other acquisition had not occurred, increases the percentage of the then outstanding voting securities Owned by the Subject Person over the designated percentage threshold, then a Change in Control will be deemed to occur;

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(ii) there is consummated a merger, consolidation or similar transaction involving (directly or indirectly) the Company and, immediately after the consummation of such merger, consolidation or similar transaction, the stockholders of the Company immediately prior thereto do not Own, directly or indirectly, either (A) outstanding voting securities representing more than fifty percent (50%) of the combined outstanding voting power of the surviving Entity in such merger, consolidation or similar transaction or (B) more than fifty percent (50%) of the combined outstanding voting power of the parent of the surviving Entity in such merger, consolidation or similar transaction, in each case in substantially the same proportions as their Ownership of the outstanding voting securities of the Company immediately prior to such transaction;

(iii) there is consummated a sale, lease, exclusive license or other disposition of all or substantially all of the consolidated assets of the Company and its Subsidiaries, other than a sale, lease, license or other disposition of all or substantially all of the consolidated assets of the Company and its Subsidiaries to an Entity, more than fifty percent (50%) of the combined voting power of the voting securities of which are Owned by stockholders of the Company in substantially the same proportions as their Ownership of the outstanding voting securities of the Company immediately prior to such sale, lease, license or other disposition; or

(iv) individuals who, on the Effective Date immediately following the closing of the Merger, are members of the Board (the ***Incumbent Board***) cease for any reason to constitute at least a majority of the members of the Board; *provided, however*, that if the appointment or election (or nomination for election) of any new Board member was approved or recommended by a majority vote of the members of the Incumbent Board then still in office, such new member will, for purposes of this Plan, be considered as a member of the Incumbent Board.

Notwithstanding the foregoing definition or any other provision of this Plan, (A) the term Change in Control will not include a sale of assets, merger or other transaction effected exclusively for the purpose of changing the domicile of the Company, and (B) the definition of Change in Control (or any analogous term) in an individual written agreement between a Participant and the Company or an Affiliate will supersede the foregoing definition with respect to Awards subject to such agreement; *provided, however*, that (1) if no definition of Change in Control (or any analogous term) is set forth in such an individual written agreement, the foregoing definition will apply; and (2) no Change in Control (or any analogous term) will be deemed to occur with respect to Awards subject to such an individual written agreement without a requirement that the Change in Control (or any analogous term) actually occur. If required for compliance with Section 409A of the Code, in no event will an event be deemed a Change in Control if such event is not also a change in the ownership of the Company, a change in the effective control of the Company, or a change in the ownership of a substantial portion of the assets of the Company, each as determined under Treasury Regulations Section 1.409A-3(i)(5) (without regard to any alternative definition thereunder). The Board may, in its sole discretion and without a Participant s consent, amend the definition of Change in Control to conform to the definition of a change in control event under Section 409A of the Code and the regulations thereunder.

(j) ***Code*** means the Internal Revenue Code of 1986, as amended, including any applicable regulations and guidance thereunder.

(k) ***Committee*** means a committee of one (1) or more Directors to whom authority has been delegated by the Board in accordance with Section 2(c).

(l) ***Common Stock*** means the common stock of the Company.

(m) ***Company*** means Signal Genetics, Inc., a Delaware corporation.

(n) ***Consultant*** means any person, including an advisor, who is (i) engaged by the Company or an Affiliate to render consulting or advisory services and is compensated for such services, or (ii) serving as a member of the board of directors of an Affiliate and is compensated for such services. However, service solely as

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a Director, or payment of a fee for such service, will not cause a Director to be considered a Consultant for purposes of the Plan. Notwithstanding the foregoing, a person is treated as a Consultant under this Plan only if a Form S-8 Registration Statement under the Securities Act is available to register either the offer or the sale of the Company s securities to such person.

(o) ***Continuous Service*** means that the Participant s service with the Company or an Affiliate, whether as an Employee, Director or Consultant, is not interrupted or terminated. A change in the capacity in which the Participant renders service to the Company or an Affiliate as an Employee, Director or Consultant or a change in the Entity for which the Participant renders such service, provided that there is no interruption or termination of the Participant s service with the Company or an Affiliate, will not terminate a Participant s Continuous Service; *provided, however,* that if the Entity for which a Participant is rendering services ceases to qualify as an Affiliate, as determined by the Board, in its sole discretion, such Participant s Continuous Service will be considered to have terminated on the date such Entity ceases to qualify as an Affiliate. For example, a change in status from an Employee of the Company to a Consultant of an Affiliate or to a Director will not constitute an interruption of Continuous Service. To the extent permitted by law, the Board or the chief executive officer of the Company, in that party s sole discretion, may determine whether Continuous Service will be considered interrupted in the case of (i) any leave of absence approved by the Board or chief executive officer, including sick leave, military leave or any other personal leave, or (ii) transfers between the Company, an Affiliate, or their successors. Notwithstanding the foregoing, a leave of absence will be treated as Continuous Service for purposes of vesting in an Award only to such extent as may be provided in the Company s leave of absence policy, in the written terms of any leave of absence agreement or policy applicable to the Participant, or as otherwise required by law.

(p) ***Corporate Transaction*** means the consummation, in a single transaction or in a series of related transactions, of any one or more of the following events:

(i) a sale or other disposition of all or substantially all, as determined by the Board, in its sole discretion, of the consolidated assets of the Company and its Subsidiaries;

(ii) a sale or other disposition of more than fifty percent (50%) of the outstanding securities of the Company;

(iii) a merger, consolidation or similar transaction following which the Company is not the surviving corporation; or

(iv) a merger, consolidation or similar transaction following which the Company is the surviving corporation but the shares of Common Stock outstanding immediately preceding the merger, consolidation or similar transaction are converted or exchanged by virtue of the merger, consolidation or similar transaction into other property, whether in the form of securities, cash or otherwise.

If required for compliance with Section 409A of the Code, in no event will an event be deemed a Corporate Transaction if such event is not also a change in the ownership of the Company, a change in the effective control of the Company, or a change in the ownership of a substantial portion of the assets of the Company, each as determined under Treasury Regulations Section 1.409A-3(i)(5) (without regard to any alternative definition thereunder). The Board may, in its sole discretion and without a Participant s consent, amend the definition of Corporate Transaction to conform to the definition of a change in control event under Section 409A of the Code and the regulations thereunder.

(q) ***Covered Employee*** will have the meaning provided in Section 162(m)(3) of the Code.

(r) ***Director*** means a member of the Board.

(s) ***Disability*** means, with respect to a Participant, the inability of such Participant to engage in any substantial gainful activity by reason of any medically determinable physical or mental impairment that can be

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expected to result in death or that has lasted or can be expected to last for a continuous period of not less than twelve (12) months, as provided in Sections 22(e)(3) and 409A(a)(2)(c)(i) of the Code, and will be determined by the Board on the basis of such medical evidence as the Board deems warranted under the circumstances.

(t) ***Effective Date*** means the effective date of this Plan document, which is the date of the closing of the transactions contemplated by the Agreement and Plan of Merger and Reorganization among the Company, Signal Merger Sub, Inc., and Miragen Therapeutics, Inc. dated as of October 31, 2016, provided that this Plan is approved by the Company s stockholders on or prior to such date.

(u) ***Employee*** means any person employed by the Company or an Affiliate. However, service solely as a Director, or payment of a fee for such services, will not cause a Director to be considered an Employee for purposes of the Plan.

(v) ***Entity*** means a corporation, partnership, limited liability company or other entity.

(w) ***Exchange Act*** means the Securities Exchange Act of 1934, as amended, and the rules and regulations promulgated thereunder.

(x) ***Exchange Act Person*** means any natural person, Entity or group (within the meaning of Section 13(d) or 14(d) of the Exchange Act), except that Exchange Act Person will not include (i) the Company or any Subsidiary of the Company, (ii) any employee benefit plan of the Company or any Subsidiary of the Company or any trustee or other fiduciary holding securities under an employee benefit plan of the Company or any Subsidiary of the Company, (iii) an underwriter temporarily holding securities pursuant to an offering of such securities, (iv) an Entity Owned, directly or indirectly, by the stockholders of the Company in substantially the same proportions as their Ownership of stock of the Company, or (v) any natural person, Entity or group (within the meaning of Section 13(d) or 14(d) of the Exchange Act) that, as of the Effective Date, is the Owner, directly or indirectly, of securities of the Company representing more than fifty percent (50%) of the combined voting power of the Company s then outstanding securities.

(y) ***Fair Market Value*** means, as of any date, the value of the Common Stock determined as follows:

(i) If the Common Stock is listed on any established stock exchange or traded on any established market, the Fair Market Value of a share of Common Stock will be, unless otherwise determined by the Board, the closing sales price for such stock as quoted on such exchange or market (or the exchange or market with the greatest volume of trading in the Common Stock) on the date of determination, as reported in a source the Board deems reliable.

(ii) Unless otherwise provided by the Board, if there is no closing sales price for the Common Stock on the date of determination, then the Fair Market Value will be the closing sales price on the last preceding date for which such quotation exists.

(iii) In the absence of such markets for the Common Stock, the Fair Market Value will be determined by the Board in good faith and in a manner that complies with Sections 409A and 422 of the Code.

(z) ***Incentive Stock Option*** means an option granted pursuant to Section 5 that is intended to be, and that qualifies as, an incentive stock option within the meaning of Section 422 of the Code.

(aa) ***Non-Employee Director*** means a Director who either (i) is not a current employee or officer of the Company or an Affiliate, does not receive compensation, either directly or indirectly, from the Company or an Affiliate for services rendered as a consultant or in any capacity other than as a Director (except for an amount as to which disclosure

would not be required under Item 404(a) of Regulation S-K promulgated pursuant to the Securities Act (***Regulation S-K***)), does not possess an interest in any other transaction for which disclosure

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would be required under Item 404(a) of Regulation S-K, and is not engaged in a business relationship for which disclosure would be required pursuant to Item 404(b) of Regulation S-K, or (ii) is otherwise considered a non-employee director for purposes of Rule 16b-3.

(bb) ***Nonstatutory Stock Option*** means an option granted pursuant to Section 5 that does not qualify as an Incentive Stock Option.

(cc) ***Officer*** means a person who is an officer of the Company within the meaning of Section 16 of the Exchange Act.

(dd) ***Option*** means an Incentive Stock Option or a Nonstatutory Stock Option to purchase shares of Common Stock granted pursuant to the Plan.

(ee) ***Option Agreement*** means a written agreement between the Company and a holder of an Option evidencing the terms and conditions of an Option grant. Each Option Agreement will be subject to the terms and conditions of the Plan.

(ff) ***Other Stock Award*** means an award based in whole or in part by reference to the Common Stock which is granted pursuant to the terms and conditions of Section 6(d).

(gg) ***Other Stock Award Agreement*** means a written agreement between the Company and a holder of an Other Stock Award evidencing the terms and conditions of an Other Stock Award grant. Each Other Stock Award Agreement will be subject to the terms and conditions of the Plan.

(hh) ***Outside Director*** means a Director who either (i) is not a current employee of the Company or an affiliated corporation (within the meaning of Treasury Regulations promulgated under Section 162(m) of the Code), is not a former employee of the Company or an affiliated corporation who receives compensation for prior services (other than benefits under a tax-qualified retirement plan) during the taxable year, has not been an officer of the Company or an affiliated corporation, and does not receive remuneration from the Company or an affiliated corporation, either directly or indirectly, in any capacity other than as a Director, or (ii) is otherwise considered an outside director for purposes of Section 162(m) of the Code.

(ii) ***Own, Owned, Owner, Ownership*** means a person or Entity will be deemed to Own, to have Owned, to be Owner of, or to have acquired Ownership of securities if such person or Entity, directly or indirectly, through any contract, arrangement, understanding, relationship or otherwise, has or shares voting power, which includes the power to vote or to direct the voting, with respect to such securities.

(jj) ***Participant*** means a person to whom an Award is granted pursuant to the Plan or, if applicable, such other person who holds an outstanding Award.

(kk) ***Performance Cash Award*** means an award of cash granted pursuant to the terms and conditions of Section 6(c)(ii).

(ll) ***Performance Criteria*** means the one or more criteria that the Board will select for purposes of establishing the Performance Goals for a Performance Period. The Performance Criteria that will be used to establish such Performance Goals may be based on any one of, or combination of, the following as determined by the Board: (i) earnings (including earnings per share and net earnings); (ii) earnings before interest, taxes and depreciation; (iii) earnings before interest, taxes, depreciation and amortization; (iv) earnings before interest, taxes, depreciation, amortization and legal settlements; (v) earnings before interest, taxes, depreciation, amortization, legal settlements and

other income (expense); (vi) earnings before interest, taxes, depreciation, amortization, legal settlements, other income (expense) and stock-based compensation; (vii) earnings before interest, taxes, depreciation, amortization, legal settlements, other income (expense), stock-based compensation

and changes in deferred revenue; (viii) earnings before interest, taxes, depreciation, amortization, legal settlements, other income (expense), stock-based compensation, other non-cash expenses and changes in deferred revenue; (ix) total stockholder return; (x) return on equity or average stockholder s equity; (xi) return on assets, investment, or capital employed; (xii) stock price; (xiii) margin (including gross margin); (xiv) income (before or after taxes); (xv) operating income; (xvi) operating income after taxes; (xvii) pre-tax profit; (xviii) operating cash flow; (xix) sales or revenue targets; (xx) increases in revenue or product revenue; (xxi) expenses and cost reduction goals; (xxii) improvement in or attainment of working capital levels; (xxiii) economic value added (or an equivalent metric); (xxiv) market share; (xxv) cash flow; (xxvi) cash flow per share; (xxvii) cash balance; (xxviii) cash burn; (xxix) cash collections; (xxx) share price performance; (xxxi) debt reduction; (xxxii) implementation or completion of projects or processes (including, without limitation, clinical trial initiation, clinical trial enrollment and dates, clinical trial results, regulatory filing submissions, regulatory filing acceptances, regulatory or advisory committee interactions, regulatory approvals, new and supplemental indications for existing products, and product supply); (xxxiii) stockholders equity; (xxxiv) capital expenditures; (xxxv) debt levels; (xxxvi) operating profit or net operating profit; (xxxvii) workforce diversity; (xxxviii) growth of net income or operating income; (xxxix) billings; (xl) bookings; (xli) employee retention; (xlii) initiation of phases of clinical trials and/or studies by specific dates; (xliii) acquisition of new customers, including institutional accounts; (xliv) customer retention and/or repeat order rate; (xlv) number of institutional customer accounts (xlvi) budget management; (xlvii) improvements in sample and test processing times; (xlviii) regulatory milestones; (xlix) progress of internal research or clinical programs; (l) progress of partnered programs; (li) partner satisfaction; (lii) milestones related to samples received and/or tests run; (liii) expansion of sales in additional geographies or markets; (liv) research progress, including the development of programs; (lv) submission to, or approval by, a regulatory body (including, but not limited to the U.S. Food and Drug Administration) of an applicable filing or a product; (lvi) timely completion of clinical trials; (lvii) milestones related to samples received and/or tests or panels run; (lviii) expansion of sales in additional geographies or markets; (lix) research progress, including the development of programs; (lx) patient samples processed and billed; (lxi) sample processing operating metrics (including, without limitation, failure rate maximums and reduction of repeat rates); (lxii) strategic partnerships or transactions (including in-licensing and out-licensing of intellectual property); (lxiii) pre-clinical development related to compound goals; (lxiv) customer satisfaction; and (lxv) and to the extent that an Award is not intended to comply with Section 162(m) of the Code, other measures of performance selected by the Board.

(mm) ***Performance Goals*** means, for a Performance Period, the one or more goals established by the Board for the Performance Period based upon the Performance Criteria. Performance Goals may be based on a Company-wide basis, with respect to one or more business units, divisions, Affiliates, or business segments, and in either absolute terms or relative to the performance of one or more comparable companies or the performance of one or more relevant indices. Unless specified otherwise by the Board (i) in the Award Agreement at the time the Award is granted or (ii) in such other document setting forth the Performance Goals at the time the Performance Goals are established, the Board will appropriately make adjustments in the method of calculating the attainment of Performance Goals for a Performance Period as follows: (1) to exclude restructuring and/or other nonrecurring charges; (2) to exclude exchange rate effects; (3) to exclude the effects of changes to generally accepted accounting principles; (4) to exclude the effects of any statutory adjustments to corporate tax rates; (5) to exclude the effects of items that are unusual in nature or occur infrequently as determined under generally accepted accounting principles; (6) to exclude the dilutive effects of acquisitions or joint ventures; (7) to assume that any business divested by the Company achieved performance objectives at targeted levels during the balance of a Performance Period following such divestiture; (8) to exclude the effect of any change in the outstanding shares of common stock of the Company by reason of any stock dividend or split, stock repurchase, reorganization, recapitalization, merger, consolidation, spin-off, combination or exchange of shares or other similar corporate change, or any distributions to common stockholders other than regular cash dividends; (9) to exclude the effects of stock based compensation and the award of bonuses under the Company s bonus plans; (10) to exclude costs incurred in connection with potential acquisitions or divestitures that are required to be expensed under generally accepted accounting principles; and (11) to exclude the goodwill and intangible asset

impairment charges that are required to be recorded under generally accepted accounting principles. In addition,

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the Board retains the discretion to reduce or eliminate the compensation or economic benefit due upon attainment of Performance Goals and to define the manner of calculating the Performance Criteria it selects to use for such Performance Period. Partial achievement of the specified criteria may result in the payment or vesting corresponding to the degree of achievement as specified in the Stock Award Agreement or the written terms of a Performance Cash Award.

(nn) ***Performance Period*** means the period of time selected by the Committee (or, to the extent that an Award is not intended to qualify as performance-based compensation under Section 162(m) of the Code, the Board or the Committee) over which the attainment of one or more Performance Goals will be measured for the purpose of determining a Participant s right to and the payment of a Performance Stock Award or a Performance Cash Award. Performance Periods may be of varying and overlapping duration, at the sole discretion of the Committee (or Board, if applicable).

(oo) ***Performance Stock Award*** means a Stock Award granted under the terms and conditions of Section 6(c)(i).

(pp) ***Plan*** means this Signal Genetics, Inc. 2016 Equity Incentive Plan.

(qq) ***Restricted Stock Award*** means an award of shares of Common Stock which is granted pursuant to the terms and conditions of Section 6(a).

(rr) ***Restricted Stock Award Agreement*** means a written agreement between the Company and a holder of a Restricted Stock Award evidencing the terms and conditions of a Restricted Stock Award grant. Each Restricted Stock Award Agreement will be subject to the terms and conditions of the Plan.

(ss) ***Restricted Stock Unit Award*** means a right to receive shares of Common Stock which is granted pursuant to the terms and conditions of Section 6(b).

(tt) ***Restricted Stock Unit Award Agreement*** means a written agreement between the Company and a holder of a Restricted Stock Unit Award evidencing the terms and conditions of a Restricted Stock Unit Award grant. Each Restricted Stock Unit Award Agreement will be subject to the terms and conditions of the Plan.

(uu) ***Rule 16b-3*** means Rule 16b-3 promulgated under the Exchange Act or any successor to Rule 16b-3, as in effect from time to time.

(vv) ***Rule 405*** means Rule 405 promulgated under the Securities Act.

(ww) ***Securities Act*** means the Securities Act of 1933, as amended.

(xx) ***Stock Appreciation Right*** or ***SAR*** means a right to receive the appreciation on Common Stock that is granted pursuant to the terms and conditions of Section 5.

(yy) ***Stock Appreciation Right Agreement*** or ***SAR Agreement*** means a written agreement between the Company and a holder of a Stock Appreciation Right evidencing the terms and conditions of a Stock Appreciation Right grant. Each Stock Appreciation Right Agreement will be subject to the terms and conditions of the Plan.

(zz) ***Stock Award*** means any right to receive Common Stock granted under the Plan, including an Incentive Stock Option, a Nonstatutory Stock Option, a Stock Appreciation Right, a Restricted Stock Award, a Restricted Stock Unit Award, a Performance Stock Award or any Other Stock Award.

(aaa) ***Stock Award Agreement*** means a written agreement between the Company and a Participant evidencing the terms and conditions of a Stock Award grant. Each Stock Award Agreement will be subject to the terms and conditions of the Plan.

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(bbb) ***Subsidiary*** means, with respect to the Company, (i) any corporation of which more than fifty percent (50%) of the outstanding capital stock having ordinary voting power to elect a majority of the board of directors of such corporation (irrespective of whether, at the time, stock of any other class or classes of such corporation will have or might have voting power by reason of the happening of any contingency) is at the time, directly or indirectly, Owned by the Company, and (ii) any partnership, limited liability company or other entity in which the Company has a direct or indirect interest (whether in the form of voting or participation in profits or capital contribution) of more than fifty percent (50%).

(ccc) ***Ten Percent Stockholder*** means a person who Owns (or is deemed to Own pursuant to Section 424(d) of the Code) stock possessing more than ten percent (10%) of the total combined voting power of all classes of stock of the Company or any Affiliate.

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Annex C

2016 Signal Employee Stock Purchase Plan

ADOPTED BY THE BOARD OF DIRECTORS: NOVEMBER 30, 2016

APPROVED BY THE STOCKHOLDERS: ,

1. GENERAL; PURPOSE.

(a) The Plan provides a means by which Eligible Employees of the Company and certain designated Related Corporations may be given an opportunity to purchase shares of Common Stock. The Plan permits the Company to grant a series of Purchase Rights to Eligible Employees under an Employee Stock Purchase Plan.

(b) The Company, by means of the Plan, seeks to retain the services of such Employees, to secure and retain the services of new Employees and to provide incentives for such persons to exert maximum efforts for the success of the Company and its Related Corporations.

2. ADMINISTRATION.

(a) The Board will administer the Plan. The Board may delegate administration of the Plan to a Committee or Committees, as provided in Section 2(c).

(b) The Board will have the power, subject to, and within the limitations of, the express provisions of the Plan:

(i) To determine when and how Purchase Rights will be granted and the provisions of each Offering (which need not be identical).

(ii) To designate from time to time which Related Corporations will be eligible to participate in the Plan.

(iii) To construe and interpret the Plan and Purchase Rights, and to establish, amend and revoke rules and regulations for the administration of the Plan. The Board, in the exercise of this power, may correct any defect, omission or inconsistency in the Plan, in a manner and to the extent it deems necessary or expedient to make the Plan fully effective.

(iv) To settle all controversies regarding the Plan and Purchase Rights.

(v) To amend the Plan at any time as provided in Section 12.

(vi) To suspend or terminate the Plan at any time as provided in Section 12.

(vii) Generally, to exercise such powers and to perform such acts as it deems necessary or expedient to promote the best interests of the Company and its Related Corporations and to carry out the intent that the Plan be treated as an Employee Stock Purchase Plan.

(viii) To adopt such procedures and sub-plans as are necessary or appropriate to permit participation in the Plan by Employees who are foreign nationals or employed outside the United States.

(c) The Board may delegate some or all of the administration of the Plan to a Committee or Committees. If administration is delegated to a Committee, the Committee will have, in connection with the administration of the Plan, the powers theretofore possessed by the Board that have been delegated to the Committee, including the power to delegate to a subcommittee any of the administrative powers the Committee is authorized to exercise (and references to the Board in this Plan and in any applicable Offering Document will thereafter be to the Committee or subcommittee), subject, however, to such resolutions, not inconsistent with the provisions of the Plan, as may be adopted from time to time by the Board. The Board may retain the authority to concurrently

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administer the Plan with the Committee and may, at any time, revest in the Board some or all of the powers previously delegated. Whether or not the Board has delegated administration of the Plan to a Committee, the Board will have the final power to determine all questions of policy and expediency that may arise in the administration of the Plan.

(d) All determinations, interpretations and constructions made by the Board in good faith will not be subject to review by any person and will be final, binding and conclusive on all persons.

3. Shares of Common Stock Subject to the Plan.

(a) Subject to Section 11(a) relating to Capitalization Adjustments, the aggregate number of shares of Common Stock that may be issued under the Plan will not exceed 210,162 shares of Common Stock, plus the number of shares of Common Stock that are automatically added on January 1st of each year for a period of up to ten years, commencing on the first January 1st following the Effective Date and ending on (and including) January 1, 2026, in an amount equal to the lesser of (i) 1% of the total number of shares of Capital Stock outstanding on December 31st of the preceding calendar year, and (ii) 367,784 shares of Common Stock. Notwithstanding the foregoing, the Board may act prior to the first day of any calendar year to provide that there will be no January 1st increase in the share reserve for such calendar year or that the increase in the share reserve for such calendar year will be a lesser number of shares of Common Stock than would otherwise occur pursuant to the preceding sentence.

(b) If any Purchase Right terminates without having been exercised in full, the shares of Common Stock not purchased under such Purchase Right will again become available for issuance under the Plan.

(c) The stock issuable under the Plan will be shares of authorized but unissued or reacquired Common Stock, including shares repurchased by the Company on the open market.

4. Grant of Purchase Rights; Offering.

(a) The Board may from time to time grant or provide for the grant of Purchase Rights to Eligible Employees under an Offering (consisting of one or more Purchase Periods) on an Offering Date or Offering Dates selected by the Board. Each Offering will be in such form and will contain such terms and conditions as the Board will deem appropriate and will comply with the requirement of Section 423(b)(5) of the Code that all Employees granted Purchase Rights will have the same rights and privileges. The terms and conditions of an Offering will be incorporated by reference into the Plan and treated as part of the Plan. The provisions of separate Offerings need not be identical, but each Offering will include (through incorporation of the provisions of this Plan by reference in the document comprising the Offering or otherwise) the period during which the Offering will be effective, which period will not exceed twenty-seven (27) months beginning with the Offering Date, and the substance of the provisions contained in Sections 5 through 8, inclusive.

(b) If a Participant has more than one Purchase Right outstanding under the Plan, unless he or she otherwise indicates in forms delivered to the Company: (i) each form will apply to all of his or her Purchase Rights under the Plan, and (ii) a Purchase Right with a lower exercise price (or an earlier-granted Purchase Right, if different Purchase Rights have identical exercise prices) will be exercised to the fullest possible extent before a Purchase Right with a higher exercise price (or a later-granted Purchase Right if different Purchase Rights have identical exercise prices) will be exercised.

(c) The Board will have the discretion to structure an Offering so that if the Fair Market Value of a share of Common Stock on any Purchase Date during an Offering is less than or equal to the Fair Market Value of a share of Common Stock on the Offering Date for that Offering, then (i) that Offering will terminate immediately following the purchase of shares of Common Stock on such Purchase Date, and (ii) the Participants in such terminated Offering will be automatically enrolled in a new Offering that begins immediately after such Purchase Date.

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5. ELIGIBILITY.

(a) Purchase Rights may be granted only to Employees of the Company or, as the Board may designate in accordance with Section 2(b), to Employees of a Related Corporation. Except as provided in Section 5(b), an Employee will not be eligible to be granted Purchase Rights unless, on the Offering Date, the Employee has been in the employ of the Company or the Related Corporation, as the case may be, for such continuous period preceding such Offering Date as the Board may require, but in no event will the required period of continuous employment be equal to or greater than two (2) years. In addition, the Board may provide that no Employee will be eligible to be granted Purchase Rights unless, on the Offering Date, such Employee s customary employment with the Company or the Related Corporation is more than twenty (20) hours per week and more than five (5) months per calendar year or such other criteria as the Board may determine consistent with Section 423 of the Code.

(b) The Board may provide that each person who, during the course of an Offering, first becomes an Eligible Employee will, on a date or dates specified in the Offering which coincides with the day on which such person becomes an Eligible Employee or which occurs thereafter, receive a Purchase Right under that Offering, which Purchase Right will thereafter be deemed to be a part of that Offering. Such Purchase Right will have the same characteristics as any Purchase Rights originally granted under that Offering, as described herein, except that:

(i) the date on which such Purchase Right is granted will be the Offering Date of such Purchase Right for all purposes, including determination of the exercise price of such Purchase Right;

(ii) the period of the Offering with respect to such Purchase Right will begin on its Offering Date and end coincident with the end of such Offering; and

(iii) the Board may provide that if such person first becomes an Eligible Employee within a specified period of time before the end of the Offering, he or she will not receive any Purchase Right under that Offering.

(c) No Employee will be eligible for the grant of any Purchase Rights if, immediately after any such Purchase Rights are granted, such Employee owns stock possessing five percent (5%) or more of the total combined voting power or value of all classes of stock of the Company or of any Related Corporation. For purposes of this Section 5(c), the rules of Section 424(d) of the Code will apply in determining the stock ownership of any Employee, and stock which such Employee may purchase under all outstanding Purchase Rights and options will be treated as stock owned by such Employee.

(d) As specified by Section 423(b)(8) of the Code, an Eligible Employee may be granted Purchase Rights only if such Purchase Rights, together with any other rights granted under all Employee Stock Purchase Plans of the Company and any Related Corporations, do not permit such Eligible Employee s rights to purchase stock of the Company or any Related Corporation to accrue at a rate which exceeds twenty-five thousand dollars ($25,000) of Fair Market Value of such stock (determined at the time such rights are granted, and which, with respect to the Plan, will be determined as of their respective Offering Dates) for each calendar year in which such rights are outstanding at any time.

(e) Officers of the Company and any designated Related Corporation, if they are otherwise Eligible Employees, will be eligible to participate in Offerings under the Plan. Notwithstanding the foregoing, the Board may provide in an Offering that Employees who are highly compensated Employees within the meaning of Section 423(b)(4)(D) of the Code will not be eligible to participate.

6. PURCHASE RIGHTS; PURCHASE PRICE.

(a) On each Offering Date, each Eligible Employee, pursuant to an Offering made under the Plan, will be granted a Purchase Right to purchase up to that number of shares of Common Stock purchasable either with a

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percentage or with a maximum dollar amount, as designated by the Board, but in either case not exceeding fifteen percent (15%) of such Employee s earnings (as defined by the Board in each Offering) during the period that begins on the Offering Date (or such later date as the Board determines for a particular Offering) and ends on the date stated in the Offering, which date will be no later than the end of the Offering.

(b) The Board will establish one (1) or more Purchase Dates during an Offering on which Purchase Rights granted pursuant to that Offering will be exercised and shares of Common Stock will be purchased in accordance with such Offering.

(c) In connection with each Offering made under the Plan, the Board may specify (i) a maximum number of shares of Common Stock that may be purchased by any Participant pursuant to such Offering, (ii) a maximum number of shares of Common Stock that may be purchased by any Participant on any Purchase Date pursuant to such Offering, (iii) a maximum aggregate number of shares of Common Stock that may be purchased by all Participants pursuant to such Offering, and/or (iv) a maximum aggregate number of shares of Common Stock that may be purchased by all Participants on any Purchase Date pursuant to such Offering. If the aggregate purchase of shares of Common Stock issuable upon exercise of Purchase Rights granted under such Offering would exceed any such maximum aggregate number, then, in the absence of any Board action otherwise, a pro rata (based on each Participant s accumulated Contributions) allocation of the shares of Common Stock available will be made in as nearly a uniform manner as will be practicable and equitable.

(d) The purchase price of shares of Common Stock acquired pursuant to Purchase Rights will not be less than the lower of:

(i) an amount equal to eighty-five percent (85%) of the Fair Market Value of the shares of Common Stock on the Offering Date; or

(ii) an amount equal to eighty-five percent (85%) of the Fair Market Value of the shares of Common Stock on the applicable Purchase Date.

7. PARTICIPATION; WITHDRAWAL; TERMINATION.

(a) An Eligible Employee may elect to authorize payroll deductions as the means of making Contributions by completing and delivering to the Company, within the time specified in the Offering, an enrollment form provided by the Company. The enrollment form will specify the amount of Contributions not to exceed the maximum amount specified by the Board. Each Participant s Contributions will be credited to a bookkeeping account for such Participant under the Plan and will be deposited with the general funds of the Company except where applicable law requires that Contributions be deposited with a third party. To the extent provided in the Offering, a Participant may begin such Contributions on or after the Offering Date. To the extent provided in the Offering, a Participant may thereafter decrease (including to zero) or increase his or her Contributions. To the extent specifically provided in the Offering, in addition to or instead of making Contributions by payroll deductions, a Participant may make Contributions through payment by cash or check prior to a Purchase Date.

(b) During an Offering, a Participant may cease making Contributions and withdraw from the Offering by delivering to the Company a withdrawal form provided by the Company. The Company may impose a deadline before a Purchase Date for withdrawing. Upon such withdrawal, such Participant s Purchase Right in that Offering will immediately terminate and the Company will distribute to such Participant all of his or her accumulated but unused Contributions without interest. A Participant s withdrawal from an Offering will have no effect upon his or her

eligibility to participate in any other Offerings under the Plan, but such Participant will be required to deliver a new enrollment form to participate in subsequent Offerings.

(c) Purchase Rights granted pursuant to any Offering under the Plan will terminate immediately if the Participant either (i) is no longer an Employee for any reason or for no reason (subject to any post-employment participation period required by law) or (ii) is otherwise no longer eligible to participate. The Company will distribute to such individual all of his or her accumulated but unused Contributions without interest.

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(d) Purchase Rights will not be transferable by a Participant except by will, by the laws of descent and distribution, or, if permitted by the Company, by a beneficiary designation as described in Section 10. During a Participant s lifetime, Purchase Rights will be exercisable only by such Participant.

(e) Unless otherwise specified in an Offering, the Company will have no obligation to pay interest on Contributions.

8. Exercise of Purchase Rights.

(a) On each Purchase Date, each Participant s accumulated Contributions will be applied to the purchase of shares of Common Stock, up to the maximum number of shares of Common Stock permitted by the Plan and the applicable Offering, at the purchase price specified in the Offering. No fractional shares will be issued upon the exercise of Purchase Rights unless specifically provided for in the Offering.

(b) If any amount of accumulated Contributions remains in a Participant s account after the purchase of shares of Common Stock and such remaining amount is less than the amount required to purchase one (1) whole share of Common Stock on the final Purchase Date of an Offering, then such remaining amount will be held in such Participant s account for the purchase of shares of Common Stock under the next Offering under the Plan, unless such Participant withdraws from or is not eligible to participate in such next Offering, in which case such amount will be distributed to such Participant after the final Purchase Date without interest. If the amount of Contributions remaining in a Participant s account after the purchase of shares of Common Stock is at least equal to the amount required to purchase one (1) whole share of Common Stock on the final Purchase Date of an Offering, then such remaining amount will be distributed in full to such Participant after the final Purchase Date of such Offering without interest.

(c) No Purchase Rights may be exercised to any extent unless the shares of Common Stock to be issued upon such exercise under the Plan are covered by an effective registration statement pursuant to the Securities Act and the Plan is in material compliance with all applicable federal, state, foreign and other securities and other laws applicable to the Plan. If, on a Purchase Date, the shares of Common Stock are not so registered or the Plan is not in such compliance, no Purchase Rights will be exercised on such Purchase Date, and the Purchase Date will be delayed until the shares of Common Stock are subject to such an effective registration statement and the Plan is in such compliance, except that the Purchase Date will not be delayed more than twelve (12) months and the Purchase Date will in no event be more than twenty-seven (27) months from the Offering Date. If, on the Purchase Date, as delayed to the maximum extent permissible, the shares of Common Stock are not so registered or the Plan is not in such compliance, no Purchase Rights will be exercised and all accumulated but unused Contributions will be distributed to the Participants without interest.

9. Covenants of the Company.

The Company will seek to obtain from each federal, state, foreign or other regulatory commission or agency having jurisdiction over the Plan such authority as may be required to grant Purchase Rights and issue and sell shares of Common Stock thereunder. If, after commercially reasonable efforts, the Company is unable to obtain the authority that counsel for the Company deems necessary for the grant of Purchase Rights or the lawful issuance and sale of Common Stock under the Plan, and at a commercially reasonable cost, the Company will be relieved from any liability for failure to grant Purchase Rights and/or to issue and sell Common Stock upon exercise of such Purchase Rights.

10. Designation of Beneficiary.

(a) The Company may, but is not obligated to, permit a Participant to submit a form designating a beneficiary who will receive any shares of Common Stock and/or Contributions from the Participant s account under the Plan if the Participant dies before such shares and/or Contributions are delivered to the Participant. The Company may, but is not obligated to, permit the Participant to change such designation of beneficiary. Any such designation and/or change must be on a form approved by the Company.

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(b) If a Participant dies, and in the absence of a valid beneficiary designation, the Company will deliver any shares of Common Stock and/or Contributions to the executor or administrator of the estate of the Participant. If no executor or administrator has been appointed (to the knowledge of the Company), the Company, in its sole discretion, may deliver such shares of Common Stock and/or Contributions to the Participant s spouse, dependents or relatives, or if no spouse, dependent or relative is known to the Company, then to such other person as the Company may designate.

11. Adjustments upon Changes in Common Stock; Corporate Transactions.

(a) In the event of a Capitalization Adjustment, the Board will appropriately and proportionately adjust: (i) the class(es) and maximum number of securities subject to the Plan pursuant to Section 3(a); (ii) the class(es) and maximum number of securities by which the share reserve is to increase automatically each year pursuant to Section 3(a); (iii) the class(es) and number of securities subject to, and the purchase price applicable to, outstanding Offerings and Purchase Rights; and (iv) the class(es) and number of securities that are the subject of the purchase limits under each ongoing Offering. The Board will make these adjustments, and its determination will be final, binding and conclusive.

(b) In the event of a Corporate Transaction, (i) any surviving or acquiring corporation (or its parent company) may assume or continue outstanding Purchase Rights or may substitute similar rights (including a right to acquire the same consideration paid to the stockholders in the Corporate Transaction) for outstanding Purchase Rights, or (ii) if any surviving or acquiring corporation (or its parent company) does not assume or continue outstanding Purchase Rights or does not substitute similar rights for outstanding Purchase Rights, then the Participants accumulated Contributions will be used to purchase shares of Common Stock within ten (10) business days prior to the Corporate Transaction under such Purchase Rights, and such Purchase Rights will terminate immediately after such purchase.

12. Amendment, Suspension or Termination of the Plan.

(a) The Board may amend the Plan at any time in any respect the Board deems necessary or advisable. However, except as provided in Section 11(a) relating to Capitalization Adjustments, stockholder approval will be required for any amendment of the Plan for which stockholder approval is required by applicable law or listing requirements, including any amendment that either (i) materially increases the number of shares of Common Stock available for issuance under the Plan, (ii) materially expands the class of individuals eligible to become Participants and receive Purchase Rights, (iii) materially increases the benefits accruing to Participants under the Plan or materially reduces the price at which shares of Common Stock may be purchased under the Plan, (iv) materially extends the term of the Plan, or (v) expands the types of awards available for issuance under the Plan, but in each of (i) through (v) above only to the extent stockholder approval is required by applicable law or listing requirements.

(b) The Board may suspend or terminate the Plan at any time. No Purchase Rights may be granted under the Plan while the Plan is suspended or after it is terminated.

(c) Any benefits, privileges, entitlements and obligations under any outstanding Purchase Rights granted before an amendment, suspension or termination of the Plan will not be materially impaired by any such amendment, suspension or termination except (i) with the consent of the person to whom such Purchase Rights were granted, (ii) as necessary to comply with any laws, listing requirements, or governmental regulations (including, without limitation, the provisions of Section 423 of the Code and the regulations and other interpretive guidance issued thereunder relating to Employee Stock Purchase Plans) including, without limitation, any such regulations or other guidance that may be issued or amended after the Adoption Date, or (iii) as necessary to obtain or maintain favorable tax, listing, or

regulatory treatment. To be clear, the Board may amend outstanding Purchase Rights without a Participant s consent if such amendment is necessary to ensure that the Purchase Right and/or the Plan complies with the requirements of Section 423 of the Code.

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Notwithstanding anything in the Plan or any Offering Document to the contrary, the Board will be entitled to: (i) establish the exchange ratio applicable to amounts withheld in a currency other than U.S. dollars; (ii) permit Contributions in excess of the amount designated by a Participant in order to adjust for mistakes in the Company s processing of properly completed Contribution elections; (iii) establish reasonable waiting and adjustment periods and/or accounting and crediting procedures to ensure that amounts applied toward the purchase of Common Stock for each Participant properly correspond with amounts withheld from the Participant s Contributions; (iv) amend any outstanding Purchase Rights or clarify any ambiguities regarding the terms of any Offering to enable the Purchase Rights to qualify under and/or comply with Section 423 of the Code; and (v) establish other limitations or procedures as the Board determines in its sole discretion advisable that are consistent with the Plan. The actions of the Board pursuant to this paragraph will not be considered to alter or impair any Purchase Rights granted under an Offering as they are part of the initial terms of each Offering and the Purchase Rights granted under each Offering.

13. Effective Date of Plan.

The Plan will become effective on the Effective Date. No Purchase Rights will be exercised unless and until the Plan has been approved by the stockholders of the Company, which approval must be within 12 months before or after the Adoption Date (or if required under Section 12(a), the date of any material amendment of the Plan).

14. Miscellaneous Provisions.

(a) Proceeds from the sale of shares of Common Stock pursuant to Purchase Rights will constitute general funds of the Company.

(b) A Participant will not be deemed to be the holder of, or to have any of the rights of a holder with respect to, shares of Common Stock subject to Purchase Rights unless and until the Participant s shares of Common Stock acquired upon exercise of Purchase Rights are recorded in the books of the Company (or its transfer agent).

(c) The Plan and Offering do not constitute an employment contract. Nothing in the Plan or in the Offering will in any way alter the at will nature of a Participant s employment or be deemed to create in any way whatsoever any obligation on the part of any Participant to continue in the employ of the Company or a Related Corporation, or on the part of the Company or a Related Corporation to continue the employment of a Participant.

(d) The provisions of the Plan will be governed by the laws of the State of Delaware without resort to that state s conflicts of laws rules.

15. Definitions.

As used in the Plan, the following definitions will apply to the capitalized terms indicated below:

(a) ***Adoption Date*** means November 30, 2016, which is the date the Plan was adopted by the Board.

(b) ***Board*** means the Board of Directors of the Company.

(c) ***Capitalization Adjustment*** means any change that is made in, or other events that occur with respect to, the Common Stock subject to the Plan or subject to any Purchase Right after the Adoption Date without the receipt of

consideration by the Company through merger, consolidation, reorganization, recapitalization, reincorporation, stock dividend, dividend in property other than cash, large nonrecurring cash dividend, stock split, reverse stock split, liquidating dividend, combination of shares, exchange of shares, change in corporate structure or other similar equity restructuring transaction, as that term is used in Statement of Financial

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Accounting Standards Board Accounting Standards Codification Topic 718 (or any successor thereto). Notwithstanding the foregoing, the conversion of any convertible securities of the Company will not be treated as a Capitalization Adjustment.

(d) ***Capital Stock*** means each and every class of common stock of the Company, regardless of the number of votes per share.

(e) ***Code*** means the Internal Revenue Code of 1986, as amended, including any applicable regulations and guidance thereunder.

(f) ***Committee*** means a committee of one (1) or more members of the Board to whom authority has been delegated by the Board in accordance with Section 2(c).

(g) ***Common Stock*** means the common stock of the Company.

(h) ***Company*** means Signal Genetics, Inc., a Delaware corporation.

(i) ***Contributions*** means the payroll deductions and other additional payments specifically provided for in the Offering that a Participant contributes to fund the exercise of a Purchase Right. A Participant may make additional payments into his or her account if specifically provided for in the Offering, and then only if the Participant has not already had the maximum permitted amount withheld during the Offering through payroll deductions.

(j) ***Corporate Transaction*** means the consummation, in a single transaction or in a series of related transactions, of any one or more of the following events:

(i) a sale or other disposition of all or substantially all, as determined by the Board in its sole discretion, of the consolidated assets of the Company and its Subsidiaries;

(ii) a sale or other disposition of at least fifty percent (50%) of the outstanding securities of the Company;

(iii) a merger, consolidation or similar transaction following which the Company is not the surviving corporation; or

(iv) a merger, consolidation or similar transaction following which the Company is the surviving corporation but the shares of Common Stock outstanding immediately preceding the merger, consolidation or similar transaction are converted or exchanged by virtue of the merger, consolidation or similar transaction into other property, whether in the form of securities, cash or otherwise.

(k) ***Director*** means a member of the Board.

(l) ***Effective Date*** means the effective date of this Plan document, which is the date of the closing of the transactions contemplated by the Agreement and Plan of Merger and Reorganization among the Company, Signal Merger Sub, Inc., and Miragen Therapeutics, Inc., dated as of October 31, 2016, provided that this Plan is approved by the Company s stockholders on or prior to such date.

(m) ***Eligible Employee*** means an Employee who meets the requirements set forth in the document(s) governing the Offering for eligibility to participate in the Offering, provided that such Employee also meets the requirements for eligibility to participate set forth in the Plan.

(n) ***Employee*** means any person, including an Officer or Director, who is employed for purposes of Section 423(b)(4) of the Code by the Company or a Related Corporation. However, service solely as a Director, or payment of a fee for such services, will not cause a Director to be considered an Employee for purposes of the Plan.

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(o) ***Employee Stock Purchase Plan*** means a plan that grants Purchase Rights intended to be options issued under an employee stock purchase plan, as that term is defined in Section 423(b) of the Code.

(p) ***Exchange Act*** means the Securities Exchange Act of 1934, as amended, and the rules and regulations promulgated thereunder.

(q) ***Fair Market Value*** means, as of any date, the value of the Common Stock determined as follows:

(i) If the Common Stock is listed on any established stock exchange or traded on any established market, the Fair Market Value of a share of Common Stock will be, unless otherwise determined by the Board, the closing sales price for such stock as quoted on such exchange or market (or the exchange or market with the greatest volume of trading in the Common Stock) on the date of determination, as reported in a source the Board deems reliable.

(ii) Unless otherwise provided by the Board, if there is no closing sales price for the Common Stock on the date of determination, the Fair Market Value of a share of Common Stock will be the closing sales price for such stock on the last preceding date for which such quotation exists.

(iii) In the absence of such markets for the Common Stock, the Fair Market Value of a share of Common Stock will be determined by the Board in good faith in compliance with applicable laws and in a manner that complies with Section 409A of the Code.

(r) ***Offering*** means the grant to Eligible Employees of Purchase Rights, with the exercise of those Purchase Rights automatically occurring at the end of one or more Purchase Periods. The terms and conditions of an Offering will generally be set forth in the ***Offering Document*** approved by the Board for that Offering.

(s) ***Offering Date*** means a date selected by the Board for an Offering to commence.

(t) ***Officer*** means a person who is an officer of the Company or a Related Corporation within the meaning of Section 16 of the Exchange Act.

(u) ***Participant*** means an Eligible Employee who holds an outstanding Purchase Right.

(v) ***Plan*** means this Signal Genetics, Inc. 2016 Employee Stock Purchase Plan.

(w) ***Purchase Date*** means one or more dates during an Offering selected by the Board on which Purchase Rights will be exercised and on which purchases of shares of Common Stock will be carried out in accordance with such Offering.

(x) ***Purchase Period*** means a period of time specified within an Offering, generally beginning on the Offering Date or on the first Trading Day following a Purchase Date and ending on a Purchase Date. An Offering may consist of one or more Purchase Periods.

(y) ***Purchase Right*** means an option to purchase shares of Common Stock granted pursuant to the Plan.

(z) ***Related Corporation*** means any parent corporation or subsidiary corporation of the Company whether now or subsequently established, as those terms are defined in Sections 424(e) and (f), respectively, of the Code.

(aa) ***Securities Act*** means the Securities Act of 1933, as amended.

(bb) ***Subsidiary*** means, with respect to the Company, (i) any corporation of which more than fifty percent (50%) of the outstanding capital stock having ordinary voting power to elect a majority of the board of

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directors of such corporation (irrespective of whether, at the time, stock of any other class or classes of such corporation will have or might have voting power by reason of the happening of any contingency) is at the time, directly or indirectly, Owned by the Company, and (ii) any partnership, limited liability company or other entity in which the Company has a direct or indirect interest (whether in the form of voting or participation in profits or capital contribution) of more than fifty percent (50%). For purposes of the foregoing clause (i), the Company will be deemed to Own or have Owned such securities if the Company, directly or indirectly, through any contract, arrangement, understanding, relationship or otherwise, has or shares voting power, which includes the power to vote or to direct the voting, with respect to such securities.

(cc) ***Trading Day*** means any day on which the exchange(s) or market(s) on which shares of Common Stock are listed (including, but not limited to, the NYSE, the Nasdaq Global Select Market, the Nasdaq Global Market, the Nasdaq Capital Market or any successors thereto) is open for trading.

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Annex D

Amendment to Certificate of Incorporation Name Change

CERTIFICATE OF AMENDMENT

OF

CERTIFICATE OF INCORPORATION

OF

SIGNAL GENETICS, INC.

SIGNAL GENETICS, INC., a corporation organized and existing under and by virtue of the General Corporation Law of the State of Delaware (the DGCL), does hereby certify:

FIRST: The name of the corporation is Signal Genetics, Inc. (the Corporation).

SECOND: The date of filing of its original Certificate of Incorporation with the Secretary of State of the State of Delaware was June 17, 2014 under the name Signal Genetics, Inc.

THIRD: The Board of Directors (the Board) of the Corporation, acting in accordance with the provisions of Sections 141 and 242 of the DGCL, adopted resolutions amending its Certificate of Incorporation as follows:

1. Article I of the Certificate of Incorporation, as presently in effect, of the Corporation is hereby amended and restated in its entirety as follows:

ARTICLE I: The name of this Corporation is Miragen Therapeutics, Inc. (the Corporation).

FOURTH: Thereafter, pursuant to a resolution by the Board, this Certificate of Amendment was submitted to the stockholders of the Corporation for their approval in accordance with the provisions of Section 211 and 242 of the DGCL. Accordingly, said proposed amendment has been adopted in accordance with Section 242 of the DGCL.

IN WITNESS WHEREOF, **SIGNAL GENETICS, INC.** has caused this Certificate of Amendment to be signed by its duly authorized officer this day of , 2017.

SIGNAL GENETICS, INC.

By: _____

_____

Name: _____

_____

Title: _____

_____

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Annex E

Amendment to Certificate of Incorporation Reverse Stock Split

CERTIFICATE OF AMENDMENT

OF

CERTIFICATE OF INCORPORATION

OF

SIGNAL GENETICS, INC.

SIGNAL GENETICS, INC., a corporation organized and existing under and by virtue of the General Corporation Law of the State of Delaware (the DGCL), does hereby certify:

FIRST: The name of the corporation is Signal Genetics, Inc. (the Corporation).

SECOND: The date of filing of its original Certificate of Incorporation with the Secretary of State of the State of Delaware was June 17, 2014 under the name Signal Genetics, Inc.

THIRD: The Board of Directors (the Board) of the Corporation, acting in accordance with the provisions of Sections 141 and 242 of the DGCL, adopted resolutions amending its Certificate of Incorporation as follows:

1. Article IV of the Certificate of Incorporation, as presently in effect, of the Corporation is hereby amended to amend and restate the final two paragraphs of Article IV in their entirety as follows:

D. Effective at 5:00 p.m. Eastern time, on the date of filing of this Certificate of Amendment to the Certificate of Incorporation with the Secretary of State of the State of Delaware (the Effective Time), the shares of the Corporation s Common Stock, par value $0.01 per share, issued and outstanding immediately prior to the Effective Time and the shares of Common Stock issued and held in the treasury of the Corporation immediately prior to the Effective Time shall be combined into a smaller number of shares such that each [one to 15, as determined by the Board] shares of issued and outstanding Common Stock immediately prior to the Effective Time are combined into one validly issued, fully paid and nonassessable share of Common Stock, par value $0.01 per share. Notwithstanding the immediately preceding sentence, no fractional shares shall be issued and, in lieu thereof, upon surrender after the Effective Time of a certificate which formerly represented shares of Common Stock that were issued and outstanding immediately prior to the Effective Time, any person who would otherwise be entitled to a fractional share of Common Stock as a result of the combination, following the Effective Time (after taking into account all fractional shares of Common Stock otherwise issuable to such holder), shall be entitled to receive a cash payment equal to the fraction to which such holder would otherwise be entitled multiplied by the fair value of the Common Stock on the date of the Effective Time, as determined by the Board of Directors.

Each stock certificate that, immediately prior to the Effective Time, represented shares of Common Stock that were issued and outstanding immediately prior to the Effective Time shall, from and after the Effective Time, automatically and without the necessity of presenting the same for exchange, represent that number of whole shares of Common Stock after the Effective Time into which the shares of Common Stock formerly represented by such certificate shall have been combined (as well as the right to receive cash in lieu of fractional shares of Common Stock after the

Effective Time), provided however, that each person of record holding a certificate that represented shares of Common Stock that were issued and outstanding immediately prior to the Effective Time shall receive, upon surrender of such certificate, a new certificate evidencing and representing the number of whole shares of Common stock after the Effective Time into which the shares of Common Stock formerly represented by such certificate shall have been combined.

FOURTH: Thereafter, pursuant to a resolution by the Board, this Certificate of Amendment was submitted to the stockholders of the Corporation for their approval in accordance with the provisions of Section 211 and 242 of the DGCL. Accordingly, said proposed amendment has been adopted in accordance with Section 242 of the DGCL.

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IN WITNESS WHEREOF, **SIGNAL GENETICS, INC.** has caused this Certificate of Amendment to be signed by its duly authorized officer this day of , 2017.

SIGNAL GENETICS, INC.

By: _____

Name: _____

Title: _____

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Annex F

Amendment to Certificate of Incorporation Authorized Shares

CERTIFICATE OF AMENDMENT

OF

CERTIFICATE OF INCORPORATION

OF

SIGNAL GENETICS, INC.

SIGNAL GENETICS, INC., a corporation organized and existing under and by virtue of the General Corporation Law of the State of Delaware (the DGCL), does hereby certify:

FIRST: The name of the corporation is Signal Genetics, Inc. (the Corporation).

SECOND: The date of filing of its original Certificate of Incorporation with the Secretary of State of the State of Delaware was June 17, 2014 under the name Signal Genetics, Inc.

THIRD: The Board of Directors (the Board) of the Corporation, acting in accordance with the provisions of Sections 141 and 242 of the DGCL, adopted resolutions amending its Certificate of Incorporation as follows:

1. Section A of Article IV of the Certificate of Incorporation, as presently in effect, of the Corporation is hereby amended and restated in its entirety as follows:

A. The total number of shares of all classes of stock which the Corporation shall have the authority to issue is 105,000,000 shares consisting of:

1. 100,000,000 shares of common stock, with a par value of $0.01 per share (the Common Stock); and

2. 5,000,000 shares of preferred stock, with a par value of $0.01 per share (the Preferred Stock).

FOURTH: Thereafter, pursuant to a resolution by the Board, this Certificate of Amendment was submitted to the stockholders of the Corporation for their approval in accordance with the provisions of Section 211 and 242 of the DGCL. Accordingly, said proposed amendment has been adopted in accordance with Section 242 of the DGCL.

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IN WITNESS WHEREOF, **SIGNAL GENETICS, INC.** has caused this Certificate of Amendment to be signed by its duly authorized officer this day of , 2017.

SIGNAL GENETICS, INC.

By: _____

Name: _____

Title: _____

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Annex G

FINAL VERSION

INTELLECTUAL PROPERTY PURCHASE AGREEMENT

THIS INTELLECTUAL PROPERTY PURCHASE AGREEMENT (this Agreement), effective as of November 29, 2016 (the Effective Date), is entered into by and between Signal Genetics, Inc., a Delaware corporation (Seller), and Quest Diagnostics Investments LLC, a Delaware limited liability company (Buyer).

WHEREAS, Seller has rights to that certain MyPRS assay (the Test) and certain Intellectual Property assets relating thereto (collectively, the MyPRS Assay), with Intellectual Property meaning intellectual property rights in any jurisdiction throughout the world, which includes, without limitation, (i) registered and applied for patents (including issuances, divisions, continuations, continuations-in-part, reissues, extensions, reexaminations, and renewals), trademarks, copyrights, and other intellectual property applied for and registered before a governmental authority; (ii) domain names, web addresses, web pages, websites, and related content; and (iii) all other intellectual property or proprietary rights including, without limitation, inventions, works of authorship, trademarks, trade dress, service marks, trade secrets, know-how, confidential information, formulas, designs, technology, research and development, methods, processes, compositions, mask works, moral rights, and all similar intellectual property rights of every type that may exist now or in the future in any jurisdiction, whether registered or not, including, without limitation, all goodwill associated with the foregoing and all rights to recover for past, present, and future infringement associated therewith, with descriptions of certain Intellectual Property assets held by Seller and relating to the MyPRS Assay set forth on Exhibit A; and

WHEREAS, Seller desires to sell, transfer, assign and convey to Buyer, and Buyer desires to purchase and receive all of Seller s rights, title and interests in and to the MyPRS Assay; and

WHEREAS, Seller agrees to sell, transfer, assign and set over to Buyer, and Buyer agrees to purchase, the Purchased Assets (as defined below) upon the terms and conditions set forth in this Agreement; and

WHEREAS, Seller has entered into that certain merger agreement dated October 31, 2016 by and among Seller, Signal Merger Sub, Inc., a wholly-owned subsidiary of Seller (Merger Sub) and Miragen Therapeutics, Inc. (miRagen) (the Merger Agreement), pursuant to which Merger Sub will merge with and into MiRagen with miRagen continuing as the surviving corporation and becoming a wholly-owned subsidiary of Seller (the Merger), immediately prior to the consummation of the transactions contemplated hereby.

NOW, THEREFORE, in consideration of the Seller s and Buyer s respective covenants and promises contained in this Agreement and other good and valuable consideration, the receipt and adequacy of which are hereby acknowledged, the parties hereto intending to be legally bound hereby expressly agree as follows:

1. Purchase and Sale of MyPRS Assay.

1.1 Sale and Purchase. Subject to the terms and conditions set forth herein, at the Closing (as defined in Section 1.4 below), Seller shall sell, transfer, convey, assign, set over and deliver to Buyer, and Buyer shall purchase, acquire and accept from Seller, free and clear of all Encumbrances (as defined below), all of Seller s rights, title and interests of every type and nature and wherever situated (whether personal, tangible, intangible, accrued, contingent or otherwise), in and to the following assets, properties and rights (collectively, the Purchased Assets):

(a) the MyPRS Assay, including all of Seller s rights, title and interests to Intellectual Property therein or related thereto;

(b) all of the Seller s rights, interests and obligations under any licenses, contracts and agreements, whether written or oral, granting, assigning, or transferring any rights in or to the MyPRS Assay listed on

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Annex 1.1(b) (Assigned Contracts), including all of Seller s rights, interests and obligations under that certain License Agreement effective as of April 1, 2010, made by and between the Board of Trustees of the University of Arkansas acting for and on behalf of the University of Arkansas for Medical Sciences (UAMS), a public institution of higher education, and Myeloma Health LLC, a Delaware limited liability company, as amended to date (the UAMS License Agreement);

(c) all income, royalties, damages, rights to sue, rights to enforce and any and all payments now or hereafter due or payable with respect to the MyPRS Assay, other than any accounts receivable of Seller as of the Closing or prior thereto;

(d) the benefit of any attorney client privilege or attorney work product privilege pertaining to the MyPRS Assay;

(e) the information technology, software and firmware, including algorithms, and data files (including, without limitation patient data, case study data, expression level data and risk outcomes), source code, object code, application programming interfaces, architecture, files, records, schematics, databases, and other related specifications, documentation and technology related to or required for the use of the MyPRS Assay, and media on which any of the foregoing is recorded, including without limitation all Technology Assets set forth on Annex 1.1(e) (the Technology Assets); provided, however, that the Technology Assets do not include any rights to the following (the Excluded Technology Assets): (i) Telerik DevCraft Complete (including, without limitation, the User Interface and Graphics library used in report generation), (ii) products from Microsoft related to coding and software (available from Microsoft on the open market) and (iii) the Affymetrix GeneChip system including without limitation related kits and software used therein (available from Affymetrix on the open market);

(f) all of the Seller s customer, supplier and contractor lists, pricing and cost information, customer files and records, sales data and customer and contractor relationships;

(g) all records pertaining to all of the foregoing Purchased Assets; and

(h) all of Seller s claims, causes of action, choses in action, rights of recovery and rights of set-off of any kind against third parties relating to all of the foregoing Purchased Assets, other than any accounts receivable of Seller as of the Closing or prior thereto.

Encumbrance means, except as expressly set forth in any Assigned Contract, any lien, pledge, mortgage, deed of trust, security interest, charge, claim, easement, encroachment, restriction, other similar encumbrance, or adverse claim of any kind or character.

1.2 Purchase Price. The purchase price to be paid by Buyer for the Purchased Assets shall be the amount (Purchase Price) equal to the sum of (a) $825,000.00 plus (b) $100,000 if Seller s lab continues to operate beyond December 31, 2016 (but no later than January 14, 2017) due to Buyer s request (as contemplated by Section 4.2) for continued Seller processing of specimens for Buyer s validation needs. At the Closing, the Purchase Price will be delivered by Buyer by wire transfer to Seller of immediately available funds to an account designated by Seller not less than three (3) business days prior to the Closing.

1.3 No Assumption of Liabilities. Buyer shall not assume or be obligated to pay any liabilities or obligations of Seller other than those liabilities of Seller arising after the Closing under the Assigned Contracts (other than liabilities arising after the Closing out of a breach by Seller of the Assigned Contracts that occurred prior to the Closing) (collectively, Assumed Liabilities). Seller shall be responsible for and shall pay when due all of its obligations and liabilities, including all obligations and liabilities arising out of, related to or in connection with any circumstances, causes of

action, breach, violation, default or failure to perform with respect to the Purchased Assets prior to the Closing (collectively, the "Retained Liabilities"). Nothing contained in this Agreement shall

be construed as an agreement by Buyer to assume any liability or to perform any obligation of Seller, whether known or unknown, fixed or contingent, asserted or unasserted, accrued or unaccrued, matured or unmatured, liquidated or unliquidated (including those arising out of any contract or tort, whether based on negligence, strict liability or otherwise) other than the Assumed Liabilities.

1.4 Closing Date and Deliveries. Subject to the terms and conditions of this Agreement, the consummation of the transactions contemplated by this Agreement (the Closing) shall take place at the offices of Buyer, 3 Giralda Farms, Madison, NJ 07940, by electronic mail or other electronic transmission, United States mail or overnight courier, simultaneously with the closing of the Merger assuming that all of the conditions to Closing set forth in Section 5 are either satisfied or waived by the party entitled to the benefit thereof (other than conditions which, by their nature, are to be satisfied on the Closing Date), or at such other time, date or place as Seller and Buyer may mutually agree upon in writing. The date on which the Closing is to occur is herein referred to as the Closing Date and the Closing shall for all business, tax and accounting purposes be deemed to have occurred immediately prior to the effective time of the Merger on the Closing Date. On the Closing Date:

(a) Buyer shall deliver to Seller the Purchase Price.

(b) Buyer shall deliver to Seller a bill of sale, assignment and assumption agreement in the form attached hereto as Exhibit B (the Bill of Sale/Assignment), executed by a duly appointed officer of Buyer.

(c) Buyer shall deliver to Seller an assignment of intellectual property in the form attached hereto as Exhibit C (the IP Assignment), executed by a duly appointed officer of Buyer.

(d) Buyer shall deliver to Seller the Buyer Closing Certificate and the certificate required by Section 5.3(e).

(e) Buyer shall deliver to Seller an assignment and assumption of the UAMS License Agreement in the form attached hereto as Exhibit D (the Assignment), executed by a duly appointed officer of Buyer.

(f) Buyer shall reimburse Seller for half of the amount paid by Seller to UT for the fourth quarter of 2016 and all amounts paid to UT for 2017 under that certain Sponsored Clinical Study Agreement, dated September 12, 2015, between the University of Texas M.D. Anderson Cancer Center (UT) and Seller.

(g) Seller shall deliver to Buyer the Bill of Sale/Assignment, executed by a duly appointed officer of Seller.

(h) Seller shall deliver to Buyer the IP Assignment, executed by a duly appointed officer of Seller.

(i) Seller shall deliver to Buyer the Assignment, executed by a duly appointed officer of Seller.

(j) Seller shall deliver to Buyer copies of all Required Approvals (as defined in Section 3.3).

(k) Seller shall deliver to Buyer the Seller Closing Certificate and certificate required by Sections 5.2(e) and (f).

(l) Seller shall deliver to Buyer a certificate of good standing of Seller issued by the State of Delaware and dated no earlier than ten days prior to the Closing Date.

(m) Seller shall deliver to Buyer a IRS Form W-9 Request for Taxpayer Identification Number and Certification , California Form 590 Withholding Exemption Certificate , and such other tax form, as reasonably requested by Buyer which is necessary or helpful, in its good faith judgment, to establish the tax residency of Seller and/or the

qualification of Seller from exemption from any otherwise applicable withholding tax, each such form validly completed and executed by Seller.

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1.5 Sublicense. Subject to the terms of that certain UAMS License Agreement, (i) Seller hereby grants Buyer a sublicense to all of Seller s rights under such UAMS License Agreement, (ii) Buyer hereby agrees to perform and be bound by the terms of such UAMS License Agreement as a sublicensee, and (iii) this sublicense shall terminate upon the earlier of the Closing or the termination of this Agreement.

2. Buyer s Representations and Warranties. Buyer represents and warrants to Seller that: (a) it is a limited liability company duly organized, validly existing and in good standing under the laws of the State of Delaware; (b) it has all necessary limited liability company power and authority to execute and deliver this Agreement, the Bill of Sale/Assignment, the IP Assignment, the Assignment and the other agreements contemplated hereby and thereby to which it is a party (collectively, the Buyer Transaction Documents), to carry out its obligations hereunder and thereunder and to consummate the transactions contemplated hereby and thereby; (c) no authorization or approval from any third party is required in connection with Buyer s execution, delivery or performance of this Agreement or the other Buyer Transaction Documents to which it is a party; and (d) this Agreement constitutes its legal, valid and binding obligation, enforceable against it in accordance with its terms, except as such enforceability may be limited by applicable bankruptcy, insolvency, reorganization, moratorium or similar laws affecting creditors rights generally and by general principles of equity (regardless of whether enforcement is sought in a proceeding at law or in equity). Buyer further represents and warrants to Seller that the execution, delivery and performance by it of this Agreement and the other Buyer Transaction Documents to which it is a party, and the consummation by it of the transactions contemplated hereby and thereby, does not and will not (i) violate any provision of its certificate of formation or limited liability company agreement, (ii) conflict with, result in a breach of or constitute a default under any agreement or other instrument to which it is a party or by which it is bound, or (iii) violate, result in a breach of or constitute a default under any judgment, order, injunction, decree, law, rule, regulation or other restriction of any court or governmental authority to which it is subject, except in each case, where the violation, conflict, breach or default, would not have a material adverse effect on Buyer s ability to consummate the transactions contemplated hereby.

3. Seller s Representations and Warranties. Seller represents and warrants to Buyer that:

3.1 Corporate Organization. Seller is a corporation duly organized, validly existing and in good standing under the laws of the State of Delaware with full power and authority to own and operate its properties and assets and carry on its business as currently conducted.

3.2 Authorization. Seller has all necessary corporate power and authority to enter into this Agreement, the Bill of Sale/Assignment, the IP Assignment, the Assignment and the other agreements contemplated hereby and thereby to which it is a party (collectively, the Seller Transaction Documents), to carry out its obligations hereunder and thereunder and to consummate the transactions contemplated hereby and thereby. Except for Stockholder Approval (as defined in Section 5.1(b) below), the execution and delivery of this Agreement and the other Seller Transaction Documents, the performance by Seller of its obligations hereunder and thereunder and the consummation of the transactions contemplated hereby and thereby have been duly authorized by all necessary corporate actions on the part of Seller. This Agreement has been duly executed and delivered by Seller, and constitutes a legal, valid and binding obligation of Seller, enforceable in accordance with its terms, except as such enforceability may be limited by applicable bankruptcy, insolvency, reorganization, moratorium or similar laws affecting creditors rights generally and by general principles of equity (regardless of whether enforcement is sought in a proceeding at law or in equity). When each other Seller Transaction Document has been duly executed and delivered by Seller, each such Seller Transaction Document will constitute a legal, valid and binding obligation of Seller enforceable against it in accordance with its terms, except as such enforceability may be limited by applicable bankruptcy, insolvency, reorganization, moratorium or similar laws affecting creditors rights generally and by general principles of equity (regardless of whether enforcement is sought in a proceeding at law or in equity).

3.3 No Conflicts; Consents. Except as set forth on Schedule 3.3, neither the execution and delivery of this Agreement and the other Seller Transaction Documents, nor the assignment of the Purchased Assets or

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consummation of the other transactions contemplated hereby and thereby will (a) violate, or be in conflict with, any provision of any organizational document of Seller or of any applicable law binding upon or applicable to Seller, or any of the Purchased Assets; (b) violate, conflict with, or give rise to any right of termination, cancellation, increase in obligations, imposition of fees or penalties under, any debt, note, bond, indenture, mortgage, lien, lease, license, instrument, contract, commitment or other agreement, or order, arbitration award, judgment or decree, to which Seller is a party or by which it is bound or to which the Purchased Assets is subject; (c) result in the creation or imposition of any Encumbrance or third party right upon any of the Purchased Assets; or (d) result in the loss of, or otherwise adversely affect or impair, any ownership rights of Seller or Buyer in any of the Purchased Assets. Except as set forth on Schedule 3.3, no consent, approval, order or authorization of, or registration, declaration or filing with, any governmental or regulatory authority or third party is required in connection with the execution or delivery of this Agreement and the other Seller Transaction Documents or the consummation of the transactions contemplated hereby and thereby, except for recordation of the IP Assignment and other suitable patent and trademark assignment documents in the U.S. Patent & Trademark Office (the USPTO) and any comparable foreign patent offices (such recordation together with the consent of any parties identified on Schedule 3.3, other than counterparties with respect to items identified on Annex 1.1(b) other than item 1 and item 2, the Required Approvals). Except as expressly set forth in the Assigned Contracts, neither this Agreement, the other Seller Transaction Documents nor the consummation of the transactions contemplated hereby and thereby, including the assignment to Buyer of any Assigned Contracts, will result in (i) Buyer granting to any third party any right to or with respect to any Intellectual Property in the MyPRS Assay; (ii) Buyer being bound by, or subject to, any non-compete or other restriction on the operation or scope of its business; or (iii) Buyer being obligated to pay any royalties or other amounts to any person in excess of those payable by Seller prior to the Closing Date.

3.4 Ownership of Purchased Assets. To the knowledge of Seller: (i) the Purchased Assets and Seller s rights in the Purchased Assets are valid, subsisting, and enforceable; (ii) except for the Excluded Technology Assets, the Purchased Assets include all of the Intellectual Property necessary for the use or exploitation of the MyPRS Assay consistent with the scope of Seller s use or exploitation of the MyPRS Assay to date; and (iii) except with respect to the Assigned Contacts or as set forth on Schedule 3.4, Seller has good, exclusive and marketable title to the Purchased Assets and is the sole and exclusive owner of the Purchased Assets, free and clear of all Encumbrances. Except as set forth in the Assigned Contracts or on Schedule 3.4, Seller is not obligated or under any liability whatsoever to make any payments by way of royalties, fees or otherwise to any owner or licensee of, or other claimant with respect to the use of the Test or in connection with the licensing of the Test to or by third parties. To the knowledge of Seller, the Purchased Assets do not infringe, misappropriate, dilute, violate, impair, interfere or conflict with (Infringe), and has not Infringed, in any manner with any common law, statutory or other right of any third party, including any patent, trade secret, trademark, service mark, copyright, domain name or other intellectual property or proprietary right of any other person. To the knowledge of Seller, no third party has or is Infringing in any manner the Purchased Assets. Seller has not put a third party on notice of infringement of the Purchased Assets.

3.5 Proceedings; Compliance with Laws. There is no opposition, cancellation, action, arbitration, audit, hearing, investigation, litigation, suit, claim, or proceeding (collectively, Proceedings) pending, asserted or threatened by or, to the knowledge of Seller, against the Seller, and Seller has not received any communication related to any such Proceedings (including a cease and desist letter or invitation to take a license), related to the Purchased Assets, including any Proceedings concerning the ownership, validity, registrability, enforceability, infringement, misappropriation, violation or use of, or licensed right to use any Purchased Assets. To the knowledge of Seller, no valid basis exists for any such Proceeding. Seller s use or exploitation of the Purchased Assets to date complies, and at all times has complied, with all applicable laws, rules and regulations in all material respects.

3.6 Existing and Rights to Purchased Assets. Except as set forth in the Assigned Contracts or on Schedule 3.6, no past, current or future rights or licenses, including, without limitation, any implied licenses granted or retained by Seller,

have been expressly or implicitly granted or retained by Seller or, to the knowledge

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of Seller, any other party under or in connection with the Purchased Assets, including without limitation through any implied or express rights or licenses granted or retained by Seller, any prior owners, the inventors or any other third parties. Except as set forth on Schedule 3.3, the consummation of the transactions contemplated by this Agreement will not result in the loss of, or otherwise adversely affect, any ownership rights of the Buyer in any Purchased Assets. To the knowledge of Seller and except as set forth in the Assigned Contracts, Buyer and its successors and assigns will not be subject to any covenant not to sue for infringement or similar restrictions or immunities with regard to, or exhaustion of rights under, the Purchased Assets, or any representations or commitments on its enforcement, control or enjoyment of the Purchased Assets after the transactions contemplated in this Agreement, or as a result of any prior transaction made by Seller related to the Purchased Assets.

3.7 Maintenance. To the knowledge of Seller, sufficient actions have been taken to protect, preserve and maintain the Purchased Assets and to perfect the chain of title (where applicable) recorded with the applicable governmental authority. To the knowledge of Seller, all annuity and maintenance fees that are necessary in order to keep the Purchased Assets in force have been paid, and no payment of annuities or fees, or fillings, are required to be made by Seller within the forty-five (45) day period after the Closing Date (except filing of the IP Assignment with the USPTO or comparable foreign patent and trademark offices). To the knowledge of Seller, no inequitable conduct has been committed in the application for registration, prosecution, or maintenance of the Purchased Assets, and no material information was withheld from any entity requiring disclosure of such information during prosecution of the Purchased Assets.

3.8 Confidentiality of Purchased Assets. Seller has taken sufficient actions to maintain and protect the confidentiality, secrecy and value of the confidential information and trade secrets related to the Purchased Assets and neither have been used by or disclosed to any person by Seller or Seller s representative except pursuant to valid non-disclosure agreements with commercially reasonable protections of such confidential information and trade secrets made available to such persons. To the knowledge of Seller, there has not been any breach by any third party of any of the confidentiality obligations contained in such non-disclosure agreements.

3.9 Employees/Contractors. The Seller has not granted to any person or authorized any person to retain any rights in any Seller owned Purchased Assets. All persons who have contributed to the Purchased Assets which are owned or purported to be owned by Seller (i) have executed a valid and enforceable agreement assigning all of such person s rights in and to such Seller owned Purchased Assets to the Seller; and (ii) have executed and are legally bound by valid and enforceable nondisclosure agreement applicable to the Seller s confidential information and trade secrets to which the Seller is the beneficiary either directly or indirectly.

3.10 Contracts.

(a) Except for the Assigned Contracts and as set forth on Schedule 3.10(a), Seller is not a party to any contract (i) relating to the borrowing of money by Seller that required or resulted in the mortgaging, pledging or otherwise placing an Encumbrance on the MyPRS Assay; (ii) licensing the MyPRS Assay or providing in whole or in part for the use of or limiting the use of the MyPRS Assay; or (iii) providing for the purchase or other acquisition or the sale or other disposition of any of the Purchased Assets or for the grant to any third party, entity or person of any preferential rights to purchase any of the Purchased Assets.

(b) Each Assigned Contract is legal, valid and binding, in full force and effect, and enforceable against Seller and, to the knowledge of Seller, the other parties thereto, in accordance with its terms, subject to laws of general application relating to the rights of creditors generally and the availability of equitable remedies, and neither Seller nor, to the knowledge of Seller, any other party thereto is in breach or default thereunder (with or without notice or lapse of time, or both). Neither Seller nor any other party to any Assigned Contract has exercised any termination rights with respect

thereto. No event has occurred or circumstance exists, including the transaction contemplated under this Agreement, that (with or without notice or lapse of time, or both) would result in a material breach of, or give Seller or any other person the right to declare a material default or exercise

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any material remedy under, or accelerate the maturity or performance of or payment under, or cancel, terminate or modify, any Assigned Contract. Seller has made available to Buyer executed originals or true, complete and correct copies of all Assigned Contracts, together with all amendments or modifications thereto.

(c) The UAMS License Agreement is in full force and effect in accordance with its terms, and Seller is in compliance with all terms of the UAMS License Agreement. Any failure on the part the Seller to meet its obligations under the UAMS License Agreement, including but not limited to its obligations with respect to the development or commercialization of tests, products and or services, has not and does not constitute a material breach of or material default under the UAMS License Agreement. The Seller has not received any notice or claim (or threat of claims) related to the Seller s breach of or default under the UAMS License Agreement or any failure to meet its obligations under the UAMS License Agreement, and no facts or circumstances exist that would constitute a reasonable basis for such claim.

3.11 Technology Assets. The Technology Assets operate and perform in all material respects (i) in accordance with their documentation and functional specifications; and (ii) as necessary for the performance, use and exploitation of the MyPRS Assay. To the knowledge of Seller, the Technology Assets that are under the control of the Seller have not materially malfunctioned or failed within the past 12 months (or, if developed within that period, since completion of development) and do not contain any viruses, worms, Trojan horses, bugs, faults, or other devices, errors or contaminants that (i) significantly disrupt or adversely affect the functionality of any Technology Assets or other software or systems, or (ii) enable or assist any person to access without authorization any Technology Assets. Except as set forth on Schedule 3.11, no open source code, public source code, freeware or shareware is included in, integrated or bundled with, or otherwise necessary for the use of any Technology Assets. Seller has established and maintained safeguards within the past 12 months against the material destruction, loss or alteration of any data included within the Technology Assets. All such data has been collected and used in accordance with applicable law in all material respects and Seller s privacy policies and contractual commitments and the transaction contemplated hereunder will not require the consent of or notice to any third party with respect to the transfer of such data to or use of the data by Buyer.

3.12 Taxes. All taxes due and payable by Seller with respect to the Purchased Assets have been paid, and Seller shall not be liable for any additional taxes in respect of any taxable period ending on or before the Closing Date, and payments by Buyer hereunder to Seller shall not be subject to withholding taxes imposed by the United States of America or any state or local political subdivision thereof.

3.13 Value of the Purchased Assets. Seller has carefully reviewed and considered the value of the Purchased Assets and has discussed the sale of the Purchased Assets with (i) its financial advisors and (ii) other potential purchasers. Based on such review, consideration and discussions, Seller acknowledges and agrees that the total consideration being paid by the Buyer for the Purchased Assets represents a reasonably equivalent value for the Purchased Assets. Seller is not relying on the Buyer or any of its affiliates or any of the Buyer s or its respective affiliates valuations or appraisals in assessing the value of the Purchased Assets.

3.14 Insolvency. Seller is not now insolvent, and will not be rendered insolvent by any of the transactions contemplated hereby. In addition, immediately after giving effect to the consummation of the transactions contemplated hereby, (a) Seller will be able to pay its debts as they become due, (b) Seller will not have unreasonably small capital with which to conduct its present or proposed business, (c) Seller will have assets (calculated at fair market value) that exceed its liabilities, (d) taking into account all pending and threatened litigation, final judgments against Seller in actions for money damages are not reasonably anticipated to be rendered at a time when, or in amounts such that, Seller will be unable to satisfy any such judgments promptly in accordance with their terms (taking into account the maximum probable amount of such judgments in any such actions and the earliest reasonable time at

which such judgments might be rendered) as well as all other obligations of Seller and (e) the cash available to Seller, after taking into account all other anticipated uses of the cash, will be sufficient to pay all such debts and judgments promptly in accordance with their terms.

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3.15 No Brokers. Except as set forth on Schedule 3.15, Seller has not made any agreement with any person or entity which would entitle such person or entity to any fee, commission or reimbursement of expenses from Seller or Buyer or any of their affiliates in connection with the execution and delivery of this Agreement, the other Seller Transaction Documents or the other Buyer Transaction Documents, or the consummation of the transactions contemplated hereby or thereby.

4. Pre-Closing Covenants.

4.1 Notification. From the Effective Date until the Closing, Buyer or Seller, as the case may be (any such party, the Disclosing Party), shall promptly notify the other party in writing if the Disclosing Party becomes aware of (i) any fact or condition that causes or constitutes a breach of any of the representations and warranties of the Disclosing Party made as of the date of this Agreement, or (ii) the occurrence after the date of this Agreement of any fact or condition that would or be reasonably likely to cause or constitute a breach of any such representation or warranty had that representation or warranty been made as of the time of the occurrence of, or the Disclosing Party s discovery of, such fact or condition. If any such fact or condition requires any change to the schedules prepared by a Disclosing Party, such Disclosing Party shall promptly deliver to the other party a supplement to such schedules specifying such change. In addition, between the date of this Agreement and the Closing, Buyer or Seller, as the case may be, shall promptly notify the other party of the occurrence of any breach of any covenant by such party in this Section 4 or of the occurrence of any event that may make the satisfaction of any conditions in Section 5 impossible or unlikely. No disclosure pursuant to this Section 4.1 will prevent or cure any breach of any representation or warranty or covenant set forth herein or affect any remedies available to the non-Disclosing Party.

4.2 Conduct of Business; Request for Continued Lab Operations. From the Effective Date until the Closing, except as otherwise provided in this Agreement or consented to in writing by Buyer, Seller shall (i) preserve intact the Purchased Assets and (ii) not take any action (except in the ordinary course of business, consistent with past practice or in compliance with applicable law) that would, or could reasonably be expected to, result in any representation or warranty of Seller set forth herein to become untrue. Notwithstanding the foregoing or the other provisions of this Agreement, Buyer acknowledges that (i) prior to the Closing Seller will be winding down Seller s business represented by the use and exploitation of the Test, (ii) Seller s lab will not continue to operate beyond December 31, 2016 unless Buyer submits a written request to Seller no later than December 9, 2016 for continued Seller processing of specimens for Buyer s validation needs, (iii) in no event will Seller s lab continue to operate beyond January 14, 2017, and (iv) promptly following the Effective Date Seller will be terminating that certain Sponsored Research Agreement, dated August 10, 2015, by and between H. Lee Moffitt Cancer Center and Research Institute and the Seller.

4.3 No Solicitation. From the Effective Date until Closing or such time as this Agreement is terminated pursuant to Section 8, Seller shall not, and Seller shall cause its directors, employees and other representatives, not to, directly or indirectly, solicit, initiate, encourage, accept or entertain any inquiries, offers or proposals from, discuss or negotiate with, provide any non-public information to, or consider the merits of any inquiries, offers or proposals from, any person or entity (other than Buyer) relating to any asset sale or similar transaction involving the Purchased Assets (excluding the sale of inventory or Seller s use or exploitation of the Test in the ordinary course of business). Seller shall notify Buyer of any such inquiry or proposal that it may receive and the terms thereof within 24 hours of receipt or awareness.

4.4 Meeting of Stockholders. Following the Effective Date, Seller will take all action necessary in accordance with applicable law and its organizational documents to convene a meeting of its stockholders as promptly as practicable to consider and vote upon the approval of Seller s sale of the Purchased Assets to Buyer. Seller will provide Buyer a reasonable opportunity to review and comment on any filings with the Securities and Exchange Commission to the extent relating to this Agreement, the other Seller Transaction Documents or the transactions contemplated hereby and

thereby. Seller will not make any statement in respect of Buyer in any such

filing which is untrue or misleading. Seller shall include all information reasonably requested by Buyer to be included therein. Neither the board of directors of Seller nor any committee thereof shall withdraw or modify, or propose to withdraw or modify, in a manner adverse to Buyer, the approval or recommendation by the board of directors of Seller or any such committee of this Agreement, the other Seller Transaction Documents or the transactions contemplated hereby and thereby.

4.5 Closing Conditions. From the Effective Date until the Closing, each party hereto shall use its commercially reasonable efforts to take such actions as are necessary to expeditiously satisfy the closing conditions set forth in Section 5 hereof to the extent that such party s action or inaction can control or influence the satisfaction of such conditions. Seller shall use reasonable efforts to obtain all Required Approvals.

4.6 Bulk Sales Laws. The parties hereby waive compliance with the provisions of any bulk sales, bulk transfer or similar laws of any jurisdiction that may otherwise be applicable with respect to the sale of any or all of the Purchased Assets to Buyer.

4.7 Access and Investigation. Without limiting the last sentence of Section 4.2, between the Effective Date and the Closing, and upon reasonable advance notice received from Buyer, Seller shall (a) afford Buyer and its agents and representatives (collectively, the Buyer Group), reasonable access, during regular business hours, to Seller s properties, personnel, facilities, contracts, books and records, and other documents and data, such rights of access to be exercised in a manner that does not unreasonably interfere with the operations of Seller, (b) furnish to the Buyer Group copies of all such contracts, books and records, and other existing documents and data that the Buyer Group may reasonably request, (c) furnish the Buyer Group with such additional financial, operating, and other relevant data and information as the Buyer Group may reasonably request, and (d) otherwise cooperate and assist, to the extent reasonably requested by Buyer Group, with Buyer Group s investigation of the Purchased Assets. In addition, between the Effective Date and the Closing Date, Buyer will be provided access to Seller s employees with expertise relative to the Test, and Seller will exercise reasonable efforts to provide Buyer with access to suppliers, customers and other persons having business relations with Seller with respect to the Test, at such times and in the manner mutually agreed to by Buyer and Seller (it being understood that Seller will permit Buyer to have reasonable access to such persons to the extent within the control of Seller).

4.8 Delivery of Purchased Assets; Transition Support. Between the Effective Date and the Closing Date Seller shall use its commercially reasonable efforts to provide transition support reasonably requested by Buyer to relocate the Purchased Assets to Buyer s laboratory at 33608 Ortega Highway, San Juan Capistrano, California. Unless requested in writing otherwise, Seller shall deliver the Technology Assets to Quest Diagnostics Nichols Institute at its laboratory located at 33608 Ortega Highway, San Juan Capistrano, California solely through electronic means via download via the internet. On the Effective Date Seller shall release Sudipto Sur, PhD from the provisions of any restrictive covenants and/or other agreements so as to enable Buyer to engage him as a consultant and permit him to disclose and use Seller s confidential information included in the Purchased Assets in such capacity.

4.9 USPTO. Prior to the Closing Date Seller shall record documentary evidence of its conversion to a corporation with the USPTO to reflect Seller s proper name and ownership for any registered Intellectual Property.

4.10 Notice to UAMS. Within three (3) days following the Effective Date Seller shall provide written notice to UAMS, in accordance with the terms of the UAMS License Agreement, of its agreement to assign the UAMS License Agreement to Buyer on the Closing Date.

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5. Closing Conditions.

5.1 Conditions to Obligations of Both Parties. The obligations of Buyer and Seller to consummate the transactions contemplated by this Agreement shall be subject to the fulfillment, at or prior to the Closing, of each of the following conditions (any of which may be waived in writing, in whole or in part by the party entitled to enforce such condition):

(a) No governmental authority shall have enacted, issued, promulgated, enforced or entered any order which is in effect and has the effect of making the transactions contemplated by this Agreement illegal, otherwise restraining, prohibiting or delaying consummation of such transactions or causing any of the transactions contemplated hereunder to be rescinded following completion thereof, and no proceedings or investigations by or before, or otherwise involving, any governmental authority shall be threatened or pending against Seller or Buyer which seek to enjoin or prevent the consummation of the transactions contemplated under this Agreement or which seek material damages in connection with the transactions contemplated hereby.

(b) Seller s sale of the Purchased Assets to Buyer shall have been approved by the requisite vote of the stockholders of Seller (Stockholder Approval) in accordance with its organizational documents and the Delaware General Corporation Law (the DGCL).

(c) Seller shall have obtained the approval of the Merger Agreement and the Merger by the requisite vote of the stockholders of Seller in accordance with its organizational documents and the DGCL.

(d) The closing of the Merger shall occur simultaneously with the Closing.

5.2 Conditions to Obligations of Buyer. The obligations of Buyer to consummate the transactions contemplated by this Agreement shall be subject to the fulfillment or Buyer s written waiver, at or prior to the Closing, of each of the following conditions:

(a) (i) (A) The representations and warranties of Seller contained in this Agreement that does not contain an express materiality qualification (other than the representations and warranties set forth in Section 5.2(a)(ii)) must have been true and correct in all material respects as of the date of this Agreement, and shall be true and correct in all material respects as of the Closing as if made on the Closing Date, and (B) each of the representations and warranties of Seller contained in this Agreement that contains an express materiality qualification (other than the representations and warranties set forth in Section 5.2(a)(ii)) must have been true and correct in all respects as of the date of this Agreement, and must be true and correct in all respects as of the Closing as if made on the Closing Date.

(ii) The representations and warranties of Seller contained in Section 3.1 (Corporate Organization), Section 3.2 (Authorization), Section 3.14 (Insolvency) and Section 3.15 (No Brokers) must be true and correct in all respects as of the Closing Date with the same effect as if made on and as of the Closing Date.

(b) Seller shall have duly performed and complied in all material respects with all agreements, covenants and conditions required by this Agreement and each of the other Seller Transaction Documents to be performed or complied with by it prior to or on the Closing Date.

(c) Seller shall have delivered to Buyer duly executed counterparts to the Seller Transaction Documents (other than this Agreement) and such other documents and deliveries set forth in Section 1.4 to be delivered by Seller (including all Required Approvals).

(d) Buyer shall have received a certificate, dated the Closing Date and signed by a duly authorized officer of Seller, that each of the conditions set forth in Section 5.2(a) and Section 5.2(b) have been satisfied (the Seller Closing Certificate).

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(e) Buyer shall have received a certificate of the Secretary (or equivalent officer) of Seller certifying that attached thereto are true and complete copies of all resolutions adopted by the stockholders and board of directors of Seller authorizing the execution, delivery and performance of this Agreement and the other Seller Transaction Documents and the consummation of the transactions contemplated hereby and thereby, and that all such resolutions are in full force and effect and are all the resolutions adopted in connection with the transactions contemplated hereby and thereby.

(f) Buyer shall have received a certificate of the Secretary (or equivalent officer) of Seller certifying the names and signatures of the officers of Seller authorized to sign this Agreement, the Seller Transaction Documents and the other documents to be delivered hereunder and thereunder.

(g) Neither the consummation nor the performance of the transactions contemplated hereby will, directly or indirectly (with or without notice or lapse of time), contravene, or conflict with, or result in a violation of, or cause Buyer to suffer any adverse consequence under, (i) any applicable law or order or (ii) any law or order that has been published, introduced, or otherwise proposed by or before any governmental authority.

(h) Seller shall not (i) be in receivership or dissolution, (ii) have made any assignment for the benefit of creditors, (iii) have admitted in writing its inability to pay its debts as they mature, (iv) have been adjudicated a bankrupt, or (v) have filed a petition in voluntary bankruptcy, a petition or answer seeking reorganization, or an arrangement with creditors under the federal bankruptcy law or any other similar law or statute of the United States or any state, nor shall any such petition have been filed against Seller.

5.3 Conditions to Obligations of Seller. The obligation of Seller to consummate the transactions contemplated by this Agreement shall be subject to the fulfillment or Seller s written waiver, at or prior to the Closing, of each of the following conditions:

(a) (i) Each of the representations and warranties of Buyer contained in this Agreement that does not contain an express materiality qualification must have been true and correct in all material respects as of the date of this Agreement, and must be accurate in all material respects as of the Closing as if made on the Closing Date, and (ii) each of the representations and warranties of Buyer contained in this Agreement that contains an express materiality qualification must have been true and correct in all respects as of the date of this Agreement, and must be accurate in all respects as of the Closing as if made on the Closing Date.

(b) Buyer shall have duly performed and complied in all material respects with all agreements, covenants and conditions required by this Agreement and each of the other Buyer Transaction Documents to be performed or complied with by it prior to or on the Closing Date.

(c) Buyer shall have delivered to Seller duly executed counterparts to the Buyer Transaction Documents (other than this Agreement) and such other documents and deliveries set forth in Section 1.4 to be delivered by Buyer.

(d) Seller shall have received a certificate, dated the Closing Date and signed by a duly authorized officer of Buyer, that each of the conditions set forth in Section 5.3(a) and Section 5.3(b) have been satisfied (the Buyer Closing Certificate).

(e) Seller shall have received a certificate of the Secretary (or equivalent officer) of Buyer certifying the names and signatures of the officers of Buyer authorized to sign this Agreement, the Buyer Transaction Documents and the other documents to be delivered hereunder and thereunder.

(f) Neither the consummation nor the performance of the transactions contemplated hereby will, directly or indirectly (with or without notice or lapse of time), contravene, or conflict with, or result in a violation of, or cause Seller to suffer any adverse consequence under, (i) any applicable law or order or (ii) any law or order that has been published, introduced, or otherwise proposed by or before any governmental authority.

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6. Additional Covenants.

6.1 Confidentiality. Buyer acknowledges and agrees that the Non-Disclosure Agreement between Buyer and Seller, dated August 6, 2016 (the NDA) remains in full force and effect and, in addition, covenants and agrees to keep confidential, in accordance with the provisions of the NDA, information provided to Buyer pursuant to this Agreement. If this Agreement is, for any reason, terminated prior to the Closing, the NDA and the provisions of this Section 6.1 shall nonetheless continue in full force and effect. Notwithstanding anything contained herein to the contrary, effective as of the Closing, all Confidential Information of Seller included in the Purchased Assets will be deemed to be Confidential Information of Buyer and will be subject to the protections set forth herein and in the NDA for the benefit of Buyer. Seller agrees, for itself and its representatives and affiliates (and all such parties respective successors, assigns and representatives) that they shall not use, publish or disclose, and shall not authorize or permit any representative or affiliate to use, publish or disclose, the MyPRS Assay or any trade secrets or confidential information related thereto.

6.2 Public Announcements. Unless otherwise required by applicable law or rules of a stock exchange or stock listing entity (based upon the reasonable advice of counsel), or as shall be necessary for Seller to solicit Stockholder Approval, no party to this Agreement shall make any public announcements in respect of this Agreement or the transactions contemplated hereby or otherwise communicate with any news media without the prior written consent of the other party (which consent shall not be unreasonably withheld, conditioned or delayed), and the parties shall cooperate as to the timing and contents of any such announcement.

6.3 Files. Prior to the Closing Date, Buyer shall specify to Seller those attorneys and patent agents Buyer desires to have handle the Purchased Assets. As soon after receipt of notice from Buyer of the names of such attorneys and patent agents as is reasonably practical, Seller shall direct the attorneys and patent agents currently responsible for the handling of the Purchased Assets to cooperate in good faith with those attorneys and patent agents. Prior to the Closing Date, Seller shall, and shall cause its patent counsel to deliver to Buyer (or to Buyer s counsel as may be directed by Buyer) copies of all patents and patent applications, and correspondence with the USPTO and foreign patent offices in Seller s or Seller s counsel s possession related to the MyPRS Assay and the following documents (electronic or otherwise) in Seller s custody or control relating to the MyPRS Assay, to the extent available and existing : (a) all original letters patent for the MyPRS Assay, (b) all original assignments for the MyPRS Assay, (c) all original documents, files and materials evidencing dates of invention and reduction to practice of inventions set forth in the MyPRS Assay, (d) all original files reflecting the prosecution history for all issued, pending and abandoned Purchased Assets, (e) all original files regarding the issued Purchased Assets, and (f) all original files regarding any action, suit, investigation, communication, claim or proceeding (in each case, whether before an administrative, arbitral or judicial body), whether or not outstanding, adjudicated to final resolution or settled, concerning the Purchased Assets. Seller further agrees that upon the Closing Date all rights and privileges (including with respect to any attorney client privileges, attorney work product or any other professional privileges or rights) held by Seller, that arise from or relate to the Purchased Assets transferred under this Agreement, shall be transferred from Seller to Buyer. If this Agreement is terminated prior to the Closing, Buyer shall return any such materials that have been delivered by Seller or its patent counsel.

6.4 Allocation of Purchase Price. The Purchase Price will be allocated for tax purposes in the manner proposed by Buyer as soon as practicable prior to the Closing, and reasonably agreed to by Seller. After the Closing, the parties shall make consistent use of such Purchase Price allocation for all tax purposes and in any tax returns filed with the Internal Revenue Service, or with any state or local taxing agency, in respect thereof, including IRS Form 8594.

6.5 Expenses. Except as otherwise provided in this Agreement, Seller is responsible for any fees and expenses (including legal and broker fees and expenses) incurred by Seller and Buyer is responsible for any fees and expenses

(including legal and broker fees and expense) incurred by Buyer in connection with the negotiation and execution of this Agreement and the consummation of transactions contemplated hereby.

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7. Indemnification.

7.1 Seller Indemnity. Subject to the provisions of Section 7.5, Seller agrees to defend, indemnify and hold Buyer, its affiliates and their respective officers, directors, stockholders, managers, members, partners, employees, assigns and successors (individually a Buyer Indemnified Party and collectively, the Buyer Indemnified Parties) harmless from, against and in respect of any and all losses, liabilities, damages, claims or expenses (including, without limitation, attorneys fees) suffered or incurred, directly or indirectly by the Buyer Indemnified Parties by reason of, or resulting from (a) the breach of any representation or warranty contained in Section 3 of this Agreement, (b) the breach of or failure to perform any covenant made by it in this Agreement or any other Seller Transaction Document, (c) any Retained Liability, (d) any claim challenging the Merger, any claim challenging the consideration payable hereunder or any claim pertaining to Seller s involvement or role in this Agreement or the transactions contemplated hereby, or (e) any taxes of Seller, except for taxes which are the responsibility of Buyer under Section 9.3.

7.2 Indemnification Process. Whenever any claim arises for indemnification under this Agreement or an event which may result in a claim for such indemnification has occurred for which the Buyer Indemnified Parties are entitled to indemnification hereunder, the Buyer Indemnified Party will promptly notify Seller of the claim and, when known, the facts constituting the basis for such claim. Seller shall have the obligation to dispute and defend all such third party claims and thereafter so defend and pay any adverse final judgment or award or settlement amount in regard thereto. Such defense shall be controlled by Seller, and the cost of such defense shall be borne by Seller, provided that the Buyer Indemnified Parties shall have the right to participate in such defense at their own expense, unless the Buyer Indemnified Parties require their own attorney due to a conflict of interests, in which case, the expense thereof will be borne by Seller. The Buyer Indemnified Parties shall cooperate in all reasonable respects in the investigation, trial and defense of any such claim at the cost of Seller. If Seller fails to take action within thirty (30) days of notice, then the Buyer Indemnified Parties shall have the right to pay, compromise or defend any third party claim, such costs to be borne by Seller. The Buyer Indemnified Parties shall also have the right and upon delivery of ten (10) days advance written notice to such effect to Seller, exercisable in good faith, to take such action as may be reasonably necessary to avoid a default prior to the assumption of the defense of the third party claim by Seller, and any expenses incurred by the Buyer Indemnified Parties so acting shall be paid by Seller. Seller will not settle or compromise any third party claim pursuant to this Section 7.2 without the prior written consent of the Buyer Indemnified Parties (which consent shall not be unreasonably withheld, conditioned or delayed provided that such settlement is without injunctive or other non-monetary relief affecting the Buyer Indemnified Parties or leading to liability or the creation of a financial or other obligation on the part of the Buyer Indemnified Parties and provides, in customary form, for the unconditional release of each Buyer Indemnified Party from all liabilities and obligations in connection with such claim).

7.3 Buyer Indemnity. Buyer agrees to defend, indemnify and hold harmless Seller, its affiliates and their respective officers, directors, stockholders, managers, members, partners, employees, assigns and successors (individually, a Seller Indemnified Party and collectively, the Seller Indemnified Parties) from, against and in respect of any and all losses, liabilities, damages, claims or expenses (including, without limitation, attorneys fees) suffered or incurred, directly or indirectly by the Seller Indemnified Parties by reason of, or resulting from (a) the breach of any representation or warranty contained in Section 2 of this Agreement, (b) any Assumed Liability, (c) the breach of or failure to perform any covenant made by it in this Agreement or any other Buyer Transaction Document or (d) taxes which are the responsibility of Buyer under Section 9.3.

7.4 Indemnification Process. Whenever any claim arises for indemnification under this Agreement or an event which may result in a claim for such indemnification has occurred for which the Seller Indemnified Parties are entitled to indemnification hereunder, the Seller Indemnified Party will promptly notify Buyer of the claim and, when known, the facts constituting the basis for such claim. Buyer shall have the obligation to dispute and defend all such third party claims and thereafter so defend and pay any adverse final judgment or award or settlement amount in regard thereto.

Such defense shall be controlled by Buyer, and the cost of such defense shall

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be borne by Buyer, provided that the Seller Indemnified Parties shall have the right to participate in such defense at their own expense, unless the Seller Indemnified Parties require their own attorney due to a conflict of interests, in which case, the expense thereof will be borne by Buyer. The Seller Indemnified Parties shall cooperate in all reasonable respects in the investigation, trial and defense of any such claim at the cost of Buyer. If Buyer fails to take action within thirty (30) days of notice, then the Seller Indemnified Parties shall have the right to pay, compromise or defend any third party claim, such costs to be borne by Buyer. The Seller Indemnified Parties shall also have the right and upon delivery of ten (10) days advance written notice to such effect to Buyer, exercisable in good faith, to take such action as may be reasonably necessary to avoid a default prior to the assumption of the defense of the third party claim by Buyer, and any expenses incurred by the Seller Indemnified Parties so acting shall be paid by Buyer. Buyer shall not settle or compromise any third party claim pursuant to this Section 7.4 without the prior written consent of the Seller Indemnified Parties (which consent shall not be unreasonably withheld, conditioned or delayed provided that such settlement is without injunctive or other non-monetary relief affecting the Seller Indemnified Parties or leading to liability or the creation of a financial or other obligation on the part of the Seller Indemnified Parties and provides, in customary form, for the unconditional release of each Seller Indemnified Party from all liabilities and obligations in connection with such claim)

7.5 Survival; Limitations. Subject to the limitations and other provisions of this Agreement, the representations and warranties contained herein shall survive the Closing and shall remain in full force and effect until the date that is 12 months from the Closing Date, provided that the representations and warranties of Seller set forth in Section 3.1 (Corporate Organization), Section 3.2 (Authorization), Section 3.4 (Ownership of Purchased Assets), Section 3.11 (Taxes), Section 3.14 (Insolvency) and Section 3.15 (No Brokers) (the foregoing collectively the Fundamental Representations) shall survive the Closing and shall remain in full force and effect until the date that is 18 months from the Closing Date, and nothing contained herein shall limit or restrict any Buyer Indemnified Party s or Seller Indemnified Party s right to maintain or recover any amounts in connection with any action or claim based upon fraud. All covenants or other agreements contained in this Agreement to be performed or complied with prior to the Closing shall terminate upon the Closing. All other covenants or other agreements contained in this Agreement shall survive the Closing without limitation. Notwithstanding the foregoing or any provision herein to the contrary, (a) any claims asserted by proper notice hereunder by a Buyer Indemnified Party or Seller Indemnified Party prior to the expiration date of the applicable survival period shall not thereafter be barred by the expiration of such survival period and such claims shall survive until finally resolved, (b) Seller shall not be required to indemnify or hold harmless any Buyer Indemnified Party against, or reimburse any Buyer Indemnified Party for, any losses, liabilities, damages, claims or expenses under Section 7.1(a) for any breaches of the representations or warranties contained in Section 3 other than Fundamental Representations until the aggregate amount exceeds $41,250, after which Seller shall be obligated for the full amount of the losses, liabilities, damages, claims or expenses, (c) the cumulative indemnification obligations of Seller under Section 7.1(a) shall in no event exceed, in aggregate, $825,000, and (d) the cumulative indemnification obligations of Seller under Section 7.1(a) for any breaches of the representations or warranties contained in Section 3 other than Fundamental Representations shall in no event exceed, in aggregate, $206,250.

7.6 Exclusive Remedy. Buyer and Seller acknowledge and agree that the indemnification provisions of this Section 7 shall be the sole and exclusive post-Closing remedy of the Buyer Indemnified Parties and Seller Indemnified Parties for any losses, liabilities, damages, claims or expenses that any of the Buyer Indemnified Parties or Seller Indemnified Parties may suffer or incur, or become subject to, as a result of, or in connection with, the sale of the Purchased Assets or the other transactions contemplated by this Agreement, including any breach of any representation or warranty of Seller or Buyer in this Agreement or any failure by Seller or Buyer to perform or comply with any covenant or agreement that, by its terms, was to have been performed, or complied with, under this Agreement; provided, that nothing in this Section 7.6 shall limit (a) any right to recovery in respect of a claim of fraud or (b) any Buyer Indemnified Party s or Seller Indemnified Party s rights hereunder or otherwise to injunctive or other equitable relief to enforce its rights under this Agreement or otherwise in connection with the transactions contemplated hereby.

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8. Termination.

8.1 Termination Rights. This Agreement may be terminated at any time prior to the Closing:

(a) by the mutual written consent of Seller and Buyer;

(b) by Buyer by written notice to Seller if:

(i) there has been a material breach, inaccuracy in or failure to perform any representation, warranty, covenant or agreement made by Seller pursuant to this Agreement that has not been waived in writing by Buyer; or

(ii) the satisfaction of any of the conditions set forth in Section 5.1 or Section 5.2 shall become impossible, unless such failure shall be due to the failure of Buyer to perform or comply with any of the covenants, agreements or conditions hereof to be performed or complied with by it prior to the Closing, and Buyer has not waived such condition in writing.

(c) by Seller by written notice to Buyer if:

(i) there has been a material breach, inaccuracy in or failure to perform any representation, warranty, covenant or agreement made by Buyer pursuant to this Agreement that has not been waived in writing by Seller; or

(ii) the satisfaction of any of the conditions set forth in Section 5.1 or Section 5.3 shall become impossible, unless such failure shall be due to the failure of Seller to perform or comply with any of the covenants, agreements or conditions hereof to be performed or complied with by it prior to the Closing and Seller has not waived such condition in writing.

(d) by Buyer or Seller in the event that:

(i) there shall be any law that makes consummation of the transactions contemplated by this Agreement illegal or otherwise prohibited;

(ii) any governmental authority of competent jurisdiction shall have issued an order permanently restraining or enjoining the consummation of the transactions contemplated by this Agreement, and such order shall have become final and non-appealable;

(iii) the Closing has not occurred on or before April 30, 2017 or such later date as Buyer and Seller may agree upon in writing, unless the terminating party is in material breach of this Agreement;

(iv) the Merger Agreement has been terminated; or

(v) any proceedings or investigations by or before, or otherwise involving, any governmental authority shall be threatened or pending against Seller or Buyer which seek to enjoin or prevent the Merger or the consummation of the transactions contemplated under this Agreement or which seek material damages in connection with the Merger or the transactions contemplated hereby.

8.2 Effect of Termination. Each party s right of termination under Section 8.1 is in addition to any other rights it may have under this Agreement or otherwise, and the exercise of such right of termination will not be an election of remedies. In the event of the termination of this Agreement in accordance with this Section 8, this Agreement shall

forthwith become void and there shall be no liability on the part of any party hereto except:

(a) Section 6.1, Section 6.2, Section 6.5, Section 8 and Section 9 hereof shall survive the termination; and

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(b) that termination of this Agreement will not preclude a party from bringing an indemnification claim against any other party to this Agreement for a breach arising prior to such termination pursuant to the terms and conditions set forth herein and nothing herein shall relieve any party hereto from liability for any intentional breach of any provision hereof.

9. Miscellaneous

9.1 Consents to Assignment. Notwithstanding any other provision of this Agreement to the contrary, this Agreement shall not constitute an agreement to assign any contract, lease, permit or other claim or right, or any benefit arising thereunder or resulting therefrom (each, an Assignable Right), if an attempted assignment thereof, without the consent of a third party, would constitute a breach or default thereof or thereunder or increase the obligations or adversely affect the rights of Seller or Buyer thereunder. Except with respect to items identified on Annex 1.1(b) other than item 1 and item 2: (i) if such consent is not obtained prior to the Closing, Seller and Buyer shall use their respective commercially reasonable efforts, and cooperate with each other, to obtain such consent as quickly as practicable thereafter; and (ii) prior to the obtaining of any such consent, Seller and Buyer shall cooperate with each other in any reasonable and lawful arrangements designed to provide to Buyer the benefits of use of the Assignable Right for its term, and to the extent that Buyer receives such benefits, it will assume the obligations of Seller thereunder to the extent that Buyer would have been responsible therefor if such consent had been obtained. Once a consent is obtained, Seller shall promptly assign such Assignable Right to Buyer, and Buyer shall assume the obligations thereunder. Except with respect to items identified on Annex 1.1(b) other than item 1 and item 2, nothing contained in this Section 9.1 or elsewhere in this Agreement shall be deemed to constitute an agreement to exclude from the Purchased Assets the economic benefits under any Assigned Contract as to which a consent may be necessary.

9.2 Further Assurances. Except with respect to items identified on Annex 1.1(b) other than item 1 and item 2, at any time and from time to time after the Closing Date, at the request of any other party hereto and without further consideration, each party hereto will use reasonable efforts to execute and deliver such other instruments of sale, transfer, conveyance, assignment, and delivery and confirmation and take such action as the requesting party may reasonably deem necessary or desirable, at the requesting party s expense, in order to more effectively carry out the purposes of this Agreement and to transfer, convey and assign to Buyer and to place Buyer in possession and control of, and to confirm Buyer s title to, the Purchased Assets and to assist Buyer in exercising all rights and enjoying all benefits with respect thereto. In case at any time after the Closing Date any further action is necessary to carry out the purposes of this Agreement, the proper officers and directors of each party hereto shall take all such necessary action reasonably requested to be taken by such party.

9.3 Filings and Taxes. Each party shall be responsible for making all filings and paying all federal, state and local sales, documentary and other transfer taxes, if any, due as a result of the purchase, sale or transfer of the Purchased Assets in accordance herewith, as imposed by law on such party. Seller shall not collect any sales and use taxes from Buyer on the portion of the Purchase Price, if any, allocable to the Technology Assets based on the delivery of the Technology Assets to Quest Diagnostics Nichols Institute, an affiliate of Buyer, at its laboratory located at 33608 Ortega Highway, San Juan Capistrano, CA 92675 by electronic means via download from the Internet, but, in the event any sales and use taxes do apply to the portion of the Purchase Price, if any, allocable to the Technology Assets, Buyer shall be solely responsible for such sales and use taxes and shall pay such sales and use taxes (if any) when due.

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9.4 Notices. All notices, requests, consents, or other communications provided for in or to be given under this Agreement shall be in writing, may be delivered in person, by facsimile transmission (fax) (to the extent a facsimile number is provided), by overnight air courier or by mail, and shall be deemed to have been duly given and to have become effective (i) upon receipt if delivered in person or by fax, (ii) one day after having been delivered to an overnight air courier, or (iii) three days after having been deposited in the mails as certified or registered matter, all fees prepaid, directed to the parties or their assignees at the addresses noted below (or to such other address as either party may designate by notice in accordance with the provisions of this Section):

If to Seller:

Signal Genetics, Inc.

5740 Fleet Street

Carlsbad, CA 92008

Attn: Samuel D. Riccitelli

Fax: 760-537-4101

with a copy to (which shall not constitute notice):

Pillsbury Winthrop Shaw Pittman LLP

12255 El Camino Real

San Diego, CA 92130-4088

Attn: Mike Hird

Fax: 858-509-4010

If to Buyer:

c/o Quest Diagnostics Investments LLC

3 Giralda Farms

Madison, NJ 07940

Attn: SVP, Strategy, M&A and Ventures

Fax: (973) 520-2136

With copies (which shall not constitute notice) to:

c/o Quest Diagnostics Investments LLC

3 Giralda Farms

Madison, NJ 07940

Attn: General Counsel

Fax: (973) 520-2026

and

Bass, Berry & Sims PLC

150 Third Avenue South

Suite 2800

Nashville, TN 37201

Attn: J. Allen Overby

Fax: (615) 742-2711

9.5 Disclaimer of UN Convention on the Sale of Goods. PURSUANT TO ARTICLE 6 OF THE UNITED NATIONS CONVENTION ON CONTRACTS FOR THE INTERNATIONAL SALE OF GOODS (UN CONVENTION), SELLER AND BUYER AGREE THAT THE UN CONVENTION SHALL NOT APPLY TO THIS AGREEMENT.

9.6 Severability. If any provision of this Agreement is deemed void or unenforceable by any court of competent jurisdiction, that provision shall be stricken from this Agreement without affecting the remaining provisions.

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9.7 Independent Contractors. The provisions of this Agreement are not intended to create any relationship between the parties other than that of independent contractors. Neither party shall act or represent itself directly or by implication as an agent of the other party, or assume or create any obligation on behalf of or in the name of the other party.

9.8 No Third-Party Beneficiaries. Except as set forth herein, this Agreement is for the sole benefit of the parties hereto and their respective successors and permitted assigns and nothing herein, express or implied, is intended to or shall confer upon any other person any legal or equitable right, benefit or remedy of any nature whatsoever under or by reason of this Agreement.

9.9 Governing Law. The Agreement will be construed, interpreted, and applied in accordance with the laws of the State of Delaware (excluding its body of law concerning conflicts of laws).

9.10 Assignability; Parties in Interest. Neither party shall assign any rights or delegate any obligations hereunder without the consent of the other party, and any attempt to do so shall be void; provided, that Buyer and Seller shall have the right to assign its rights and delegate its obligations hereunder to (i) any third party or entity controlling, under the control of, or under common control with it, or (ii) in connection with the sale of all or substantially all of the assets of or any business combination transaction involving such party; provided that no such assignment or delegation will relieve Buyer or Seller from any of its obligations hereunder. All the terms and provisions of this Agreement shall be binding upon, shall inure to the benefit of and shall be enforceable by the respective successors and permitted assigns of the parties hereto.

9.11 Remedies. Each of the parties hereby acknowledges that any breach by it of its obligations under this Agreement would cause substantial and irreparable damage to the other party, and that money damages and the indemnity protections provided herein would be inadequate remedies therefor, and accordingly, acknowledges and agrees that the other party shall be entitled to seek an injunction or specific performance to prevent or remedy the breach of such obligations (in addition to the other rights and remedies provided for herein).

9.12 Entire Agreement; Amendments. This Agreement constitutes the sole and entire agreement and understanding of the parties with respect to the entire subject matter hereof. The Agreement is made and entered into in good faith and supersedes any and all prior representations, statements or written agreements relating thereto. Any amendment or modification of the terms and conditions set forth herein must be agreed to in a writing signed by the parties hereto.

9.13 Counterparts. This Agreement may be executed in any number of counterparts, each of which shall be deemed an original but all of which together shall constitute one and the same instrument. Delivery of a counterpart hereof via facsimile or electronic mail transmission shall be as effective as delivery of a manually executed counterpart hereof.

9.14 Headings. The headings in this Agreement are for convenience only and do not alter or affect any provision of this Agreement.

9.15 Waivers. The rights and remedies of the parties to this Agreement are cumulative. No failure or delay by any party in exercising any right, power or privilege under this Agreement shall operate as a waiver of or shall preclude that party s right to exercise that right, power or privilege.

9.16 **EACH PARTY ACKNOWLEDGES AND AGREES THAT ANY CONTROVERSY WHICH MAY ARISE UNDER THIS AGREEMENT OR THE OTHER TRANSACTION DOCUMENTS IS LIKELY TO INVOLVE COMPLICATED AND DIFFICULT ISSUES AND, THEREFORE, EACH SUCH PARTY IRREVOCABLY AND UNCONDITIONALLY WAIVES ANY RIGHT IT MAY HAVE TO A TRIAL BY JURY IN RESPECT OF ANY LEGAL ACTION ARISING OUT OF OR RELATING TO THIS**

AGREEMENT, THE OTHER TRANSACTION DOCUMENTS OR THE TRANSACTIONS

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CONTEMPLATED HEREBY OR THEREBY. EACH PARTY TO THIS AGREEMENT CERTIFIES AND ACKNOWLEDGES THAT (A) NO REPRESENTATIVE OF ANY OTHER PARTY HAS REPRESENTED, EXPRESSLY OR OTHERWISE, THAT SUCH OTHER PARTY WOULD NOT SEEK TO ENFORCE THE FOREGOING WAIVER IN THE EVENT OF A LEGAL ACTION, (B) SUCH PARTY HAS CONSIDERED THE IMPLICATIONS OF THIS WAIVER, (C) SUCH PARTY MAKES THIS WAIVER VOLUNTARILY, AND (D) SUCH PARTY HAS BEEN INDUCED TO ENTER INTO THIS AGREEMENT BY, AMONG OTHER THINGS, THE MUTUAL WAIVERS AND CERTIFICATIONS IN THIS SECTION 9.16.

[Signature Page(s) Follow this Page]

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IN WITNESS WHEREOF, the parties, by their duly authorized representatives, have caused this Agreement to be executed as of the Effective Date.

SELLER:

Signal Genetics, Inc.

By: /s/ Samuel D. Riccitelli
Name: Samuel D. Riccitelli
Title: President and Chief Executive Officer

BUYER:

Quest Diagnostics Investments LLC

By: /s/ Christopher C. Fikry
Name: Christopher C. Fikry
Title: GM, Cancer Diagnostics

[Signature Page to Purchase Agreement]

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Annexes:

Annex 1.1(b)	Transferred Contracts
Annex 1.1(e)	Technology Assets

Schedules:

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Schedule 3.4
Schedule 3.6
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Exhibits

Exhibit A	Intellectual Property
Exhibit B	Bill of Sale, Assignment and Assumption Agreement
Exhibit C	Assignment of Intellectual Property Agreement
Exhibit D	Assignment of License Agreement

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Annex H

Amendment to Certificate of Incorporation Stockholder Written Consent

CERTIFICATE OF AMENDMENT

OF

CERTIFICATE OF INCORPORATION

OF

SIGNAL GENETICS, INC.

SIGNAL GENETICS, INC., a corporation organized and existing under and by virtue of the General Corporation Law of the State of Delaware (the DGCL), does hereby certify:

FIRST: The name of the corporation is Signal Genetics, Inc. (the Corporation).

SECOND: The date of filing of its original Certificate of Incorporation with the Secretary of State of the State of Delaware was June 17, 2014 under the name Signal Genetics, Inc.

THIRD: The Board of Directors (the Board) of the Corporation, acting in accordance with the provisions of Sections 141 and 242 of the DGCL, adopted resolutions amending its Certificate of Incorporation as follows:

1. Article X of the Certificate of Incorporation, as presently in effect, of the Corporation is hereby amended and restated in its entirety as follows:

ARTICLE X: A. Meetings of the stockholders of the Corporation may be held within or without the State of Delaware, as the Bylaws of the Corporation may provide. The books of the Corporation may be kept (subject to any provision contained in the DGCL) outside of the State of Delaware at such place or places as may be designated from time to time by the board of directors of the Corporation or in the Bylaws of the Corporation.

B. No action shall be taken by the stockholders of the Company except at an annual or special meeting of stockholders called in accordance with the Bylaws of the Corporation and no action shall be taken by the stockholders by written consent or electronic transmission.

FOURTH: Thereafter, pursuant to a resolution by the Board, this Certificate of Amendment was submitted to the stockholders of the Corporation for their approval in accordance with the provisions of Section 211 and 242 of the DGCL. Accordingly, said proposed amendment has been adopted in accordance with Section 242 of the DGCL.

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IN WITNESS WHEREOF, **SIGNAL GENETICS, INC.** has caused this Certificate of Amendment to be signed by its duly authorized officer this day of , 2017.

SIGNAL GENETICS, INC.

By: _____

Name: _____

Title: _____

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Annex I

Opinion of Financial Advisor

Cantor Fitzgerald & CO.

110 East 59th Street

New York, New York 10022

Tel 212.0000.2000

www.cantorfitzgerald.com

October 31, 2016

Board of Directors

Signal Genetics, Inc.

5740 Fleet Street

Carlsbad, CA 92008

Members of the Board:

We understand that Signal Genetics, Inc. (Sydney), Sydney Merger Sub, Inc., a wholly-owned subsidiary of Sydney (Merger Sub), and miRagen Therapeutics, Inc. (miRagen) intend to enter into an Agreement and Plan of Merger and Reorganization (the Merger Agreement), pursuant to which, among other things, Merger Sub will be merged with and into miRagen with miRagen continuing as the surviving corporation and becoming a wholly-owned subsidiary of Sydney (the Merger).

Pursuant to the Merger Agreement, and as more fully set forth in the Merger Agreement, each share of common stock, par value $0.001 per share (miRagen Common Stock), of miRagen outstanding immediately prior to the effective time of the Merger, excluding shares held in treasury or held by miRagen, any subsidiary of miRagen, Sydney, Merger Sub and any shares as to which dissenter s rights have been perfected, will be converted into the right to receive a number of shares of common stock, par value $0.001 per share (Sydney Common Stock), of Sydney equal to the quotient of (a) the product of (i) the number of shares of Sydney Common Stock to be outstanding immediately following the consummation Merger *multiplied* by (ii) 0.94 (which number will be increased by 0.00000002 for each one dollar that the Net Cash (as defined in the Merger Agreement) of Sydney as determined pursuant to the terms of the Merger Agreement is less than ($100,000) (the miRagen Allocation Percentage)) divided by (b) the total number of shares of miRagen Common Stock outstanding immediately prior to the consummation of the Merger on a fully-diluted and as-converted basis, excluding the shares of miRagen Common Stock issued in the MT Pre-Closing Financing (the Exchange Ratio). We understand that in connection with the Merger (i) certain current holders of miRagen Common Stock will prior to consummation of the Merger purchase an additional 9,045,126 shares of miRagen Common Stock for aggregate consideration of $40,703,067.00 (the MT Pre-Closing Financing) pursuant to a Subscription Agreement to be entered into among miRagen and certain holders of miRagen Common Stock (the Subscription Agreement) and

(ii) as a condition to the consummation of the Merger, Sydney will sell its MyPRS® (Myeloma Prognostic Risk Signature) assay business (the Lab Business Sale) which Sydney management has informed us will result in cash consideration in an amount equal to $825,000 payable to Sydney. We further understand that the holders of shares of Sydney Common Stock immediately prior to the consummation Merger will hold approximately 4.4% (which includes the conversion of a convertible note into Sydney Common Stock) of the outstanding shares of Sydney Common Stock immediately following completion of the Merger (after giving effect to the MT Pre-Closing Financing). The terms and conditions of the Merger are set forth in more detail in the Merger Agreement.

You have asked us to render our opinion as to whether the Exchange Ratio is fair, from a financial point of view, to Sydney.

In the course of performing our reviews and analyses for rendering this opinion, we have:

reviewed a draft of the Merger Agreement, dated October 30, 2016 (the Draft Merger Agreement);

reviewed a draft of the Subscription Agreement, dated October 30, 2016 (the Draft Subscription Agreement);

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reviewed certain publicly available business and financial information relating to Sydney and miRagen;

reviewed certain operating and financial information relating to Sydney s and miRagen s respective businesses and Sydney s prospects, as provided to us by Sydney s and miRagen s management, including projections for Sydney for the five years ended December 31, 2020, and monthly cash projections for October, November, and December 2016, as prepared and provided to us by Sydney s management;

had conference calls with certain members of Sydney s senior management and the Board of Directors of Sydney to discuss Sydney s and miRagen s respective businesses, operations, historical and projected financial results and future prospects;

had conference calls with certain members of miRagen s senior management to discuss miRagen s business and operations;

reviewed certain publicly available information with respect to other companies in the biopharmaceutical industry that we deemed to be relevant;

reviewed the financial terms, to the extent publicly available, of selected recent business combinations and initial public offerings involving companies in the biopharmaceutical industry that we deemed to be relevant; and

conducted such other studies, analyses, inquiries and investigations as we deemed appropriate.

In rendering this opinion, we have relied upon and assumed, without independent verification, the accuracy and completeness of the financial and other information provided to or discussed with us by Sydney and miRagen or obtained by us from public sources, including, without limitation, the projections referred to above. With respect to the projections, we have relied on representations that they have been reasonably prepared on bases reflecting the best currently available estimates and judgments of the senior management of Sydney, as to the expected future performance of and liquidation value of Sydney. We have not assumed any responsibility for the independent verification of any such information, including, without limitation, the projections; we express no view or opinion as to such projections and the assumptions upon which they are based; and we have further relied upon the assurances of the senior management of Sydney that they are unaware of any facts that would make the information and projections incomplete or misleading. We have relied upon, without independent verifications, the assessment of Sydney management and miRagen management as to the viability of, and risks associated with, the current and future

products and services of miRagen (including without limitation, the development, testing and marketing of such products and services, the receipt of all necessary governmental and other regulatory approvals for the development, testing and marketing thereof, and the life and enforceability of all relevant patents and other intellectual and other property rights associated with such products and services). We have assumed that the executed Merger Agreement and Subscription Agreement will not differ in any material respect from the Draft Merger Agreement and the Draft Subscription Agreement, respectively, and that the Merger and the MT Pre-Closing Financing will be consummated in accordance with the terms of the Merger Agreement and the Subscription Agreement, respectively, without waiver, modification or amendment and in compliance with all applicable laws, documents and other requirements. We have also assumed that in the course of obtaining the necessary regulatory or third-party approvals, consents and releases for the Merger, no delay, limitation, restriction or condition will be imposed that would have an adverse effect on Sydney or miRagen or the contemplated benefits of the Merger. We have also assumed that the representations and warranties contained in the Merger Agreement made by the parties thereto are true and correct in all respects material to our analysis. We have assumed, at the direction of Sydney management, that the miRagen Allocation Percentage is no greater than 0.94

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In arriving at our opinion, we have not performed or obtained any independent evaluation or appraisal of the assets or liabilities (contingent or otherwise) of Sydney and miRagen, nor did we conduct a physical inspection of any of the properties or facilities of Sydney or miRagen, nor have we been furnished with any such evaluations, appraisals or inspections, nor do we assume any responsibility to obtain any such evaluations, appraisals or inspections. During the course of our engagement, we were directed by the Board of Directors of Sydney to solicit indications of interest from various third parties regarding a transaction with Sydney, and we have considered the results of such solicitation in rendering our opinion. We are not legal, regulatory, tax or accounting experts and have relied on the assessments made by Sydney and its advisors with respect to such issues. Our opinion does not address any legal, tax, regulatory or accounting matters.

We do not express any opinion as to the price or range of prices at which the shares of Sydney Common Stock may trade subsequent to the announcement or consummation of the Merger or at any time.

We have acted as a financial advisor to Sydney in connection with the Merger and will receive a customary fee for such services pursuant to an engagement letter with Sydney, a substantial portion of which is contingent on successful consummation of the Merger. A portion of our compensation is payable upon delivery of this letter and may be credited against the fee payable upon consummation of the Merger. In addition, Sydney has agreed to reimburse us for certain expenses and to indemnify us against certain liabilities arising out of our engagement.

CF&CO has previously been engaged during the two years preceding the date of this opinion by Sydney to provide certain investment banking and other services on matters unrelated to the Merger, for which we have received customary fees. CF&CO may seek to provide Sydney and its affiliates with certain investment banking and other services unrelated to the Transaction in the future.

Consistent with applicable legal and regulatory requirements, CF&CO has adopted certain policies and procedures to establish and maintain the independence of CF&CO s research departments and personnel. As a result, CF&CO s research analysts may hold views, make statements or investment recommendations and/or publish research reports with respect to Sydney, the Merger and other participants in the Merger that differ from the views of CF&CO s investment banking personnel.

In the ordinary course of business, CF&CO and its affiliates may actively trade (for their own accounts and for the accounts of their customers) certain equity and debt securities, bank debt and/or other financial instruments issued by Sydney and affiliates, as well as derivatives thereof, and, accordingly, may at any time hold long or short positions in such securities, bank debt, financial instruments and derivatives.

It is understood that this letter is intended solely for the benefit and use of the Board of Directors of Sydney (in its capacity as such) in connection with its consideration of the Merger. This letter and our opinion are not to be used for any other purpose, or be reproduced, disseminated, quoted from or referred to at any time, in whole or in part, without

our prior written consent; provided, however, that this letter may be included in its entirety in any proxy statement that may be distributed to the holders of Sydney Common Stock in connection with the Merger. This letter and our opinion does not constitute a recommendation to the Board of Directors of Sydney in connection with the Merger, nor does this letter and our opinion constitute a recommendation to any holders of Sydney Common Stock or miRagen Common Stock as to how to vote or act in connection with the Merger. Our opinion addresses only the fairness of the Exchange Ratio from a financial point of view to Sydney. Our opinion does not address Sydney s underlying business decision to pursue the Merger, the relative merits of the Merger as compared to any alternative business or financial strategies that might exist for Sydney or the effects of any other transaction in which Sydney might engage. In addition, this opinion does not constitute a solvency opinion

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or a fair value opinion, and we have not evaluated the solvency or fair value of Sydney under any federal or state laws relating to bankruptcy, insolvency or similar matters. Furthermore, we do not express any view or opinion as to the fairness, financial or otherwise, of the amount or nature of any compensation payable to or to be received by any of Sydney s officers, directors or employees, or any class of such persons, in connection with the Merger relative to the Exchange Ratio. We express no view as to any other aspect or implication of the Merger or any other agreement, arrangement or understanding entered into in connection with the Merger or otherwise, and we express no opinion as to the terms of the MT Pre-Closing Financing or the Lab Business Sale.

Our opinion has been authorized for issuance by the Fairness Opinion and Valuation Committee of CF&CO. Our opinion is subject to the assumptions, limitations, qualifications and other conditions contained herein and is necessarily based on economic, market and other conditions, and the information made available to us, as of the date hereof. We assume no responsibility for updating or revising our opinion based on circumstances or events of which we become aware after the date hereof.

Based on and subject to the foregoing, including the various assumptions, qualifications and limitations set forth herein, it is our opinion that, as of the date hereof, the Exchange Ratio is fair, from a financial point of view, to Sydney.

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Board of Directors

Signal Genetics, Inc.

October 31, 2016

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Very truly yours,

CANTOR FITZGERALD & CO.

By: /s/ Sage Kelly
Sage Kelly

Senior Managing Director, Head of

Investment Banking

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Annex J

Section 262 of the Delaware General Corporation Law

§262 Appraisal rights.

(a) Any stockholder of a corporation of this State who holds shares of stock on the date of the making of a demand pursuant to subsection (d) of this section with respect to such shares, who continuously holds such shares through the effective date of the merger or consolidation, who has otherwise complied with subsection (d) of this section and who has neither voted in favor of the merger or consolidation nor consented thereto in writing pursuant to § 228 of this title shall be entitled to an appraisal by the Court of Chancery of the fair value of the stockholder s shares of stock under the circumstances described in subsections (b) and (c) of this section. As used in this section, the word stockholder means a holder of record of stock in a corporation; the words stock and share mean and include what is ordinarily meant by those words; and the words depository receipt mean a receipt or other instrument issued by a depository representing an interest in 1 or more shares, or fractions thereof, solely of stock of a corporation, which stock is deposited with the depository.

(b) Appraisal rights shall be available for the shares of any class or series of stock of a constituent corporation in a merger or consolidation to be effected pursuant to § 251 (other than a merger effected pursuant to § 251(g) of this title and, subject to paragraph (b)(3) of this section, § 251(h) of this title), § 252, § 254, § 255, § 256, § 257, § 258, § 263 or § 264 of this title:

(1) Provided, however, that, except as expressly provided in § 363(b) of this title, no appraisal rights under this section shall be available for the shares of any class or series of stock, which stock, or depository receipts in respect thereof, at the record date fixed to determine the stockholders entitled to receive notice of the meeting of stockholders to act upon the agreement of merger or consolidation, were either: (i) listed on a national securities exchange or (ii) held of record by more than 2,000 holders; and further provided that no appraisal rights shall be available for any shares of stock of the constituent corporation surviving a merger if the merger did not require for its approval the vote of the stockholders of the surviving corporation as provided in § 251(f) of this title.

(2) Notwithstanding paragraph (b)(1) of this section, appraisal rights under this section shall be available for the shares of any class or series of stock of a constituent corporation if the holders thereof are required by the terms of an agreement of merger or consolidation pursuant to §§ 251, 252, 254, 255, 256, 257, 258, 263 and 264 of this title to accept for such stock anything except:

a. Shares of stock of the corporation surviving or resulting from such merger or consolidation, or depository receipts in respect thereof;

b. Shares of stock of any other corporation, or depository receipts in respect thereof, which shares of stock (or depository receipts in respect thereof) or depository receipts at the effective date of the merger or consolidation will be either listed on a national securities exchange or held of record by more than 2,000 holders;

c. Cash in lieu of fractional shares or fractional depository receipts described in the foregoing paragraphs (b)(2)a. and b. of this section; or

d. Any combination of the shares of stock, depository receipts and cash in lieu of fractional shares or fractional depository receipts described in the foregoing paragraphs (b)(2)a., b. and c. of this section.

(3) In the event all of the stock of a subsidiary Delaware corporation party to a merger effected under § 251(h), § 253 or § 267 of this title is not owned by the parent immediately prior to the merger, appraisal rights shall be available for the shares of the subsidiary Delaware corporation.

(4) In the event of an amendment to a corporation s certificate of incorporation contemplated by § 363(a) of this title, appraisal rights shall be available as contemplated by § 363(b) of this title, and the procedures of this

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section, including those set forth in subsections (d) and (e) of this section, shall apply as nearly as practicable, with the word amendment substituted for the words merger or consolidation, and the word corporation substituted for the words constituent corporation and/or surviving or resulting corporation.

(c) Any corporation may provide in its certificate of incorporation that appraisal rights under this section shall be available for the shares of any class or series of its stock as a result of an amendment to its certificate of incorporation, any merger or consolidation in which the corporation is a constituent corporation or the sale of all or substantially all of the assets of the corporation. If the certificate of incorporation contains such a provision, the provisions of this section, including those set forth in subsections (d), (e), and (g) of this section, shall apply as nearly as is practicable.

(d) Appraisal rights shall be perfected as follows:

(1) If a proposed merger or consolidation for which appraisal rights are provided under this section is to be submitted for approval at a meeting of stockholders, the corporation, not less than 20 days prior to the meeting, shall notify each of its stockholders who was such on the record date for notice of such meeting (or such members who received notice in accordance with § 255(c) of this title) with respect to shares for which appraisal rights are available pursuant to subsection (b) or (c) of this section that appraisal rights are available for any or all of the shares of the constituent corporations, and shall include in such notice a copy of this section and, if 1 of the constituent corporations is a nonstock corporation, a copy of § 114 of this title. Each stockholder electing to demand the appraisal of such stockholder s shares shall deliver to the corporation, before the taking of the vote on the merger or consolidation, a written demand for appraisal of such stockholder s shares. Such demand will be sufficient if it reasonably informs the corporation of the identity of the stockholder and that the stockholder intends thereby to demand the appraisal of such stockholder s shares. A proxy or vote against the merger or consolidation shall not constitute such a demand. A stockholder electing to take such action must do so by a separate written demand as herein provided. Within 10 days after the effective date of such merger or consolidation, the surviving or resulting corporation shall notify each stockholder of each constituent corporation who has complied with this subsection and has not voted in favor of or consented to the merger or consolidation of the date that the merger or consolidation has become effective; or

(2) If the merger or consolidation was approved pursuant to § 228, § 251(h), § 253, or § 267 of this title, then either a constituent corporation before the effective date of the merger or consolidation or the surviving or resulting corporation within 10 days thereafter shall notify each of the holders of any class or series of stock of such constituent corporation who are entitled to appraisal rights of the approval of the merger or consolidation and that appraisal rights are available for any or all shares of such class or series of stock of such constituent corporation, and shall include in such notice a copy of this section and, if 1 of the constituent corporations is a nonstock corporation, a copy of § 114 of this title. Such notice may, and, if given on or after the effective date of the merger or consolidation, shall, also notify such stockholders of the effective date of the merger or consolidation. Any stockholder entitled to appraisal rights may, within 20 days after the date of mailing of such notice or, in the case of a merger approved pursuant to § 251(h) of this title, within the later of the consummation of the offer contemplated by § 251(h) of this title and 20 days after the date of mailing of such notice, demand in writing from the surviving or resulting corporation the appraisal of such holder s shares. Such demand will be sufficient if it reasonably informs the corporation of the identity of the stockholder and that the stockholder intends thereby to demand the appraisal of such holder s shares. If such notice did not notify stockholders of the effective date of the merger or consolidation, either (i) each such constituent corporation shall send a second notice before the effective date of the merger or consolidation notifying each of the holders of any class or series of stock of such constituent corporation that are entitled to appraisal rights of the effective date of the merger or consolidation or (ii) the surviving or resulting corporation shall send such a second notice to all such holders on or within 10 days after such effective date; provided, however, that if such second notice is sent more than 20 days following the sending of the first notice or, in the case of a merger approved pursuant to § 251(h) of this title, later than the later of the consummation of the offer contemplated by § 251(h) of this title and 20 days following the

sending of the first notice, such second notice need only be sent to each stockholder who is entitled

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to appraisal rights and who has demanded appraisal of such holder s shares in accordance with this subsection. An affidavit of the secretary or assistant secretary or of the transfer agent of the corporation that is required to give either notice that such notice has been given shall, in the absence of fraud, be prima facie evidence of the facts stated therein. For purposes of determining the stockholders entitled to receive either notice, each constituent corporation may fix, in advance, a record date that shall be not more than 10 days prior to the date the notice is given, provided, that if the notice is given on or after the effective date of the merger or consolidation, the record date shall be such effective date. If no record date is fixed and the notice is given prior to the effective date, the record date shall be the close of business on the day next preceding the day on which the notice is given.

(e) Within 120 days after the effective date of the merger or consolidation, the surviving or resulting corporation or any stockholder who has complied with subsections (a) and (d) of this section hereof and who is otherwise entitled to appraisal rights, may commence an appraisal proceeding by filing a petition in the Court of Chancery demanding a determination of the value of the stock of all such stockholders. Notwithstanding the foregoing, at any time within 60 days after the effective date of the merger or consolidation, any stockholder who has not commenced an appraisal proceeding or joined that proceeding as a named party shall have the right to withdraw such stockholder s demand for appraisal and to accept the terms offered upon the merger or consolidation. Within 120 days after the effective date of the merger or consolidation, any stockholder who has complied with the requirements of subsections (a) and (d) of this section hereof, upon written request, shall be entitled to receive from the corporation surviving the merger or resulting from the consolidation a statement setting forth the aggregate number of shares not voted in favor of the merger or consolidation and with respect to which demands for appraisal have been received and the aggregate number of holders of such shares. Such written statement shall be mailed to the stockholder within 10 days after such stockholder s written request for such a statement is received by the surviving or resulting corporation or within 10 days after expiration of the period for delivery of demands for appraisal under subsection (d) of this section hereof, whichever is later. Notwithstanding subsection (a) of this section, a person who is the beneficial owner of shares of such stock held either in a voting trust or by a nominee on behalf of such person may, in such person s own name, file a petition or request from the corporation the statement described in this subsection.

(f) Upon the filing of any such petition by a stockholder, service of a copy thereof shall be made upon the surviving or resulting corporation, which shall within 20 days after such service file in the office of the Register in Chancery in which the petition was filed a duly verified list containing the names and addresses of all stockholders who have demanded payment for their shares and with whom agreements as to the value of their shares have not been reached by the surviving or resulting corporation. If the petition shall be filed by the surviving or resulting corporation, the petition shall be accompanied by such a duly verified list. The Register in Chancery, if so ordered by the Court, shall give notice of the time and place fixed for the hearing of such petition by registered or certified mail to the surviving or resulting corporation and to the stockholders shown on the list at the addresses therein stated. Such notice shall also be given by 1 or more publications at least 1 week before the day of the hearing, in a newspaper of general circulation published in the City of Wilmington, Delaware or such publication as the Court deems advisable. The forms of the notices by mail and by publication shall be approved by the Court, and the costs thereof shall be borne by the surviving or resulting corporation.

(g) At the hearing on such petition, the Court shall determine the stockholders who have complied with this section and who have become entitled to appraisal rights. The Court may require the stockholders who have demanded an appraisal for their shares and who hold stock represented by certificates to submit their certificates of stock to the Register in Chancery for notation thereon of the pendency of the appraisal proceedings; and if any stockholder fails to comply with such direction, the Court may dismiss the proceedings as to such stockholder. If immediately before the merger or consolidation the shares of the class or series of stock of the constituent corporation as to which appraisal rights are available were listed on a national securities exchange, the Court shall dismiss the proceedings as to all holders of such shares who are otherwise entitled to appraisal rights unless (1) the total number of shares entitled to

appraisal exceeds 1% of the outstanding shares of the class or series eligible for appraisal, (2) the value of the consideration provided in the merger or consolidation for such total number of shares exceeds $1 million, or (3) the merger was approved pursuant to § 253 or § 267 of this title.

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(h) After the Court determines the stockholders entitled to an appraisal, the appraisal proceeding shall be conducted in accordance with the rules of the Court of Chancery, including any rules specifically governing appraisal proceedings. Through such proceeding the Court shall determine the fair value of the shares exclusive of any element of value arising from the accomplishment or expectation of the merger or consolidation, together with interest, if any, to be paid upon the amount determined to be the fair value. In determining such fair value, the Court shall take into account all relevant factors. Unless the Court in its discretion determines otherwise for good cause shown, and except as provided in this subsection, interest from the effective date of the merger through the date of payment of the judgment shall be compounded quarterly and shall accrue at 5% over the Federal Reserve discount rate (including any surcharge) as established from time to time during the period between the effective date of the merger and the date of payment of the judgment. At any time before the entry of judgment in the proceedings, the surviving corporation may pay to each stockholder entitled to appraisal an amount in cash, in which case interest shall accrue thereafter as provided herein only upon the sum of (1) the difference, if any, between the amount so paid and the fair value of the shares as determined by the Court, and (2) interest theretofore accrued, unless paid at that time. Upon application by the surviving or resulting corporation or by any stockholder entitled to participate in the appraisal proceeding, the Court may, in its discretion, proceed to trial upon the appraisal prior to the final determination of the stockholders entitled to an appraisal. Any stockholder whose name appears on the list filed by the surviving or resulting corporation pursuant to subsection (f) of this section and who has submitted such stockholder s certificates of stock to the Register in Chancery, if such is required, may participate fully in all proceedings until it is finally determined that such stockholder is not entitled to appraisal rights under this section.

(i) The Court shall direct the payment of the fair value of the shares, together with interest, if any, by the surviving or resulting corporation to the stockholders entitled thereto. Payment shall be so made to each such stockholder, in the case of holders of uncertificated stock forthwith, and the case of holders of shares represented by certificates upon the surrender to the corporation of the certificates representing such stock. The Court s decree may be enforced as other decrees in the Court of Chancery may be enforced, whether such surviving or resulting corporation be a corporation of this State or of any state.

(j) The costs of the proceeding may be determined by the Court and taxed upon the parties as the Court deems equitable in the circumstances. Upon application of a stockholder, the Court may order all or a portion of the expenses incurred by any stockholder in connection with the appraisal proceeding, including, without limitation, reasonable attorney s fees and the fees and expenses of experts, to be charged pro rata against the value of all the shares entitled to an appraisal.

(k) From and after the effective date of the merger or consolidation, no stockholder who has demanded appraisal rights as provided in subsection (d) of this section shall be entitled to vote such stock for any purpose or to receive payment of dividends or other distributions on the stock (except dividends or other distributions payable to stockholders of record at a date which is prior to the effective date of the merger or consolidation); provided, however, that if no petition for an appraisal shall be filed within the time provided in subsection (e) of this section, or if such stockholder shall deliver to the surviving or resulting corporation a written withdrawal of such stockholder s demand for an appraisal and an acceptance of the merger or consolidation, either within 60 days after the effective date of the merger or consolidation as provided in subsection (e) of this section or thereafter with the written approval of the corporation, then the right of such stockholder to an appraisal shall cease. Notwithstanding the foregoing, no appraisal proceeding in the Court of Chancery shall be dismissed as to any stockholder without the approval of the Court, and such approval may be conditioned upon such terms as the Court deems just; provided, however that this provision shall not affect the right of any stockholder who has not commenced an appraisal proceeding or joined that proceeding as a named party to withdraw such stockholder s demand for appraisal and to accept the terms offered upon the merger or consolidation within 60 days after the effective date of the merger or consolidation, as set forth in subsection (e) of this section.

(l) The shares of the surviving or resulting corporation to which the shares of such objecting stockholders would have been converted had they assented to the merger or consolidation shall have the status of authorized and unissued shares of the surviving or resulting corporation.