

Edgar Filing: INFINITY PHARMACEUTICALS INC - Form 425

INFINITY PHARMACEUTICALS INC

Form 425

August 17, 2006

Filed by Discovery Partners International, Inc. Pursuant to Rule 425

Under the Securities Act of 1933

and Deemed Filed Pursuant to Rule 14a-12

Under the Securities Exchange Act of 1934

Subject Company: Infinity Pharmaceuticals, Inc.

Commission File No. 333-134438

Additional Information about the Merger and Where to Find It

In connection with the proposed merger transaction between Infinity Pharmaceuticals, Inc. (Infinity) and Discovery Partners International, Inc. (Discovery Partners), on August 7, 2006, Discovery Partners filed with the Securities and Exchange Commission (the SEC) an amended registration statement that contains a proxy statement/prospectus, which registration statement has been declared effective by the Securities and Exchange Commission. Investors and securityholders of Discovery Partners and Infinity are urged to read the proxy statement/prospectus (including any amendments or supplements to the proxy statement/prospectus) regarding the proposed transaction because it contains important information about Discovery Partners, Infinity and the proposed transaction. Discovery Partners stockholders can obtain a free copy of the proxy statement/prospectus, as well as other filings containing information about Discovery Partners and Infinity, without charge, at the SEC s Internet site (<http://www.sec.gov>). Copies of the proxy statement/prospectus can also be obtained, without charge, by directing a request to Discovery Partners International, Inc., 9640 Towne Centre Drive, San Diego, CA 92121, Attention: Investor Relations, Telephone: (858) 455-8600.

Participants in the Solicitation

Discovery Partners and its directors and executive officers and Infinity and its directors and executive officers may be deemed to be participants in the solicitation of proxies from the stockholders of Discovery Partners in connection with the proposed transaction. Information regarding the special interests of these directors and executive officers in the merger transaction is included in the proxy statement/prospectus referred to above. Additional information regarding the directors and executive officers of Discovery Partners is also included in Discovery Partners proxy statement for its 2006 Annual Meeting of Stockholders, which was filed with the SEC on April 6, 2006. This document is available free of charge at the SEC s web site (<http://www.sec.gov>) and from Discovery Partners Investor Relations at the address listed above.

On August 16, 2006, Infinity made the presentation set forth below to a limited group of investors.

Introduction to Infinity
August 16, 2006

Forward-Looking Statements

Various statements in this presentation concerning our future expectations, plans and prospects constitute forward-looking statements for the purposes of the safe harbor provisions under The

Private

Securities

Litigation

Reform

Act

of

1995.

Such

forward-looking

statements

include

statements regarding the proposed transaction with Discovery Partner International (DPI), DPI

and

the

combined

company's

net

cash

at

closing,

anticipated

cash

post-closing

and

projected period in which such cash will be available, the trading of the combined company's

shares on the

NASDAQ

National

Market,

the

potential

value

created

by

the

proposed

merger

for

DPI's

and Infinity's stockholders, the efficacy, safety, and intended utilization of

Infinity's product candidates, the results of discovery efforts and clinical trials, and plans regarding regulatory filings, future research and clinical trials and current and future collaborative activities. Actual results may differ materially from those indicated by such forward-looking statement as a result of various important factors, including risks related to: the ability of DPI and Infinity to complete the proposed transaction; the amount of DPI's net cash at closing; the availability of funds to continue research and development activities; the results of future clinical trials with respect to Infinity's product candidates and compounds and Infinity's ability to successfully develop and commercialize product candidates; the success of Infinity's collaborations and its ability to enter into additional collaborations;; the timing and success of regulatory filings;; the scope of Infinity's patents and the patents of others; competitive factors and other risks and

uncertainties
more
fully
described
in
DPI's
filings
with
the
Securities
and
Exchange
Commission,
including
its
Registration
Statement
on
Form
S-4,
as
filed
on
May
24,
2006
and
subsequently
amended.
The
proposed
transaction
is
subject
to
customary
closing
conditions,
including
approval
of
DPI's
and
Infinity's
stock
holders.

Any forward-looking statements speak only as of the date made. Infinity undertakes no obligation to publicly update any forward-looking statements, whether as a result of new information, future events or otherwise.

Mission

To develop targeted therapies for the treatment of cancer and related conditions discovered through the use of our innovative small molecule drug technologies

Lead product candidate: IPI-504, a novel Hsp90 inhibitor

Two ongoing Phase I cancer studies in GIST and multiple myeloma

Phase II expected 2007

Pipeline of preclinical cancer drug candidates

Internally discovered and developed, chemistry platform

4 Pharma/Biotech corporate alliances

Amgen, J & J and Novartis (2)

Proven biotech leadership team

Expected cash runway post-DPI merger

~ \$90+ million

Sufficient funds through 2007

Infinity Snapshot

Strategy

Drugs

Internally discovered, novel small molecules

Targets

Well-credentialed, but not well-trodden

Products

Opportunity for first-in class or fast follower best-in-class

Overview

Founded in late 2001 (~5 years old)

Team

Recognized biotechnology investor, business and R&D leaders

~115 employees (~55 PhD / MDs)

Alliance and Financing Strategy

Small molecule technology access alliances with Amgen, J&J and Novartis

Bcl-2 product alliance with Novartis

Public financing via Reverse Merger with Discovery Partners

IPI-504

lead proprietary oncology drug candidate (Hsp90)

Phase I in GIST and multiple myeloma commenced 2005

Phase II anticipated in 2007

Hedgehog pathway
preclinical oncology candidate

Our Team: ~115 full-time employees

Infinity headcount

Biology/Clinical/Regulatory

36

Chemistry

50

Management & other

12

(~55 MD or PhDs)

R&D Total

98

Total

115

G&A

17

Well-balanced

Moderate near-term growth

anticipated

Primarily in downstream
disciplines (i.e. clinical,
regulatory, CMC/ADME/tox)

Leadership

Mr. Steven Holtzman, CEO

Millennium, DNX

Dr. Julian Adams, President & CSO

Millennium, ProScript

Boehringer

Ingelheim, Merck

Ms. Adelene Perkins, CBO

Transform, Genetics Institute,

Bain, GE

Dr. Michael Foley, VP Chemistry

Harvard ICCB, Glaxo, BMS

Dr. David Grayzel, VP Clinical Development
& Medical Affairs

Dyax, Mass General Hospital

Dr. Vito Palombella, VP Discovery Biology

Syntonix, Millennium, ProScript

Dr. Jeffrey Tong, VP Corp & Prod Dev

McKinsey & Co, Harvard Center for
Genomics Research

Dr. Jim Wright, VP Pharm

Dev

Millennium, Alkermes, Boehringer

Ingelheim, Syntex, U. of Wisconsin

SAB
Oncology & Chemistry

Co-chair: Stuart Schreiber, PhD -
Co-Director Broad Institute, Prof. of Chemistry and
Chemical Biology Harvard University

Co-chair: Rick Klausner, MD
Column Group, former Head of the NCI

Arnie
Levine, PhD -
Institute for Advanced Study

Eric Lander, PhD -
Co-Director Broad Institute, Whitehead, MIT, Harvard

Todd Golub, MD -
DFCI, Broad Institute, Harvard, MIT

David Livingston, MD
Professor of Medicine, Harvard Medical School, DFCI

Ken Anderson, MD -
Robert Kraft Prof. of Medicine Harvard Medical School, DFCI

Matthew Shair, PhD
Professor of Chemistry, Harvard University

Vicki Sato, PhD
former President Vertex Pharmaceuticals

Phil Needleman, PhD -
former Head of R&D Searle, Pharmacia

Investors
Venture Capitalists

Prospect Venture Partners

Venrock Associates

Advent Venture Partners

HBM BioVentures

Vulcan Ventures

Novartis BioVentures

Wellcome
Trust

POSCO BioVentures

Tallwood

Alexandria Equities

Lotus BioScience
Pharmaceutical Companies

Amgen

Novartis

J&J

Overview

Founded in late 2001 (~5 years old)

Team

Recognized biotechnology investor, business and R&D leaders

~115 employees (~55 PhD / MDs)

Alliance and Financing Strategy

Small molecule technology access alliances with Amgen, J&J and Novartis

Bcl-2 product alliance with Novartis

Public financing via Reverse Merger with Discovery Partners

IPI-504

lead proprietary oncology drug candidate (Hsp90)

Phase I in GIST and multiple myeloma commenced 2005

Phase II anticipated in 2007

Hedgehog pathway
preclinical oncology candidate

DOS Small Molecule Technology: Discovery and Alliance Engine

Innovative small molecule platform, diversity oriented synthesis (DOS), enables the creation of novel, natural product-like synthetic drug candidates

Potential
to
access
previously
undruggable
drug
targets

Unique asset for:

Internal drug discovery

Value-accretive technology access alliances

N
O
O
H
R²
R³
N
O
R³
H
H
H
O
O

N
R
4
O
R
R₂
R₁
N
O
NR
4
O
R₁
O
SR₂
R₃

Diversity Oriented Synthesis (DOS)

2004

2006: > \$65 million upfront/committed cash

Additional milestone and royalty potential

No license of proprietary Infinity product rights

Small Molecule Technology Access Alliances

Total payments >\$400M
Early product pipeline: Bcl-2 alliance with Novartis

Joint discovery of novel Bcl-2
targeted cancer drugs

Infinity participation in clinical
development (at NVS expense)
COLLABORATION

Infinity participation in US sales
effort (at NVS expense)
\$30M

Upfront &

committed funds
FINANCIALS

Royalties on WW sales

Discovery
Preclinical
Start Clinical
Trials
Hsp90
(IPI-504)
Bcl2/Bcl-xL
2005
2007/2008*
100% owned
100% owned
Novartis
Non-exclusive

Amgen

Novartis

J&J
Small molecule drug technologies

Alliance and financing strategy: value retention

Hedgehog

Pathway

(IPI-609)

2007*

*Planned

Reverse Merger
with
Discovery Partners International, Inc.
(NASDAQ: DPII)

DPI reverse merger opportunity

Discovery Partners International

Publicly traded company on NASDAQ (DPII)

Cash position 1/1/06: > \$83M

Board mandate (Q1, 2006):

Shut down existing business

Seek alternative, high-value biotech investment opportunity

DPI undertakes extensive evaluation of merger candidates

DPI selects Infinity as preferred partner

A financing event only

NO

programs, employees, partnerships,
or obligations of DPI transferred to Infinity

DPI invests

cash and divests operating units

7/7/06: Sale of all DPI operating assets to Galapagos

If DPI cash between \$70M and \$75M, ownership:

DPII stockholders = 31%

Infinity stockholders = 69%

If cash above \$75M or below \$70M, adjustment applied

Expected reverse stock split at closing to lower share number and
increase share price

The reverse merger: a creative financing and access to
public markets

Lead clinical product in two ongoing Phase I cancer studies

Phase II expected 2007

Pipeline of preclinical cancer drug candidates

Internally discovered and developed, chemistry platform

4 Pharma/Biotech corporate alliances

Amgen, J & J and Novartis (2)

Proven biotech leadership team

Estimated approximately \$90 million cash

Projected cash runway through 2007 and key value driving events
before any additional alliances or financing

Snapshot of Post-Merger Infinity (NASDAQ: INFI)

Status of Reverse Merger

Announce merger

File Initial S4

S-4 is Declared Effective

S-4 mailed to DPI and IPI Stockholders

Stockholder meeting/vote scheduled

Deal Closes, INFI publicly traded

April 12, 2006

July 11, 2006

August 7, 2006

August 9-10, 2006

September 12, 2006

Following successful vote

Overview

Founded in late 2001 (~5 years old)

Team

Recognized biotechnology investor, business and R&D leaders

~115 employees (~55 PhD / MDs)

Alliance and Financing Strategy

Small molecule technology access alliances with Amgen, J&J and Novartis

Bcl-2 product alliance with Novartis

Public financing via Reverse Merger with Discovery Partners

IPI-504

lead proprietary oncology drug candidate (Hsp90)

Phase I in GIST and multiple myeloma commenced 2005

Phase II anticipated in 2007

Hedgehog pathway

preclinical oncology candidate

Novel Hsp90 inhibitor

Currently in 2 Phase I clinical trials:

GIST

Multiple myeloma

Ready for Phase II in 2007

Both IV (water-soluble) and oral
formulations

Infinity's lead clinical product: IPI-504 (Hsp90 inhibitor)

Cl

-

IPI-504

OH

N

H

N
OH
O
OH
Me
O
O
O
O
NH
2
H
H
+

Heat Shock Protein 90 (Hsp90) is an emerging cancer target

Hsp90 in cancer cells differs from

Hsp90 in normal cells*

Function of Hsp90 in cancer cells

General chaperone function

essential for protein homeostasis

Specific chaperone function

stabilization of oncogenic
proteins in key cell signaling
pathways

Preferential targeting to cancer

*Reference: Kamal
et al, Nature,
2003, 425,.407-410

Dependence
on Hsp90
Apoptosis
Tyrosine kinase
inhibitor
(e.g
Gleevec, Tarceva)
Oncogene
Cancer cell
survival &
proliferation
Resistance
mutations
Hsp90
inhibitor
Targeting specific oncogenic Hsp90 client proteins
Hsp90
inhibitor

Velcade
Gleevec / dasatinib
Investigational
Gleevec / Sutent
Herceptin
Tarceva
/ Erbitux
Sorafenib
/ Sutent
Sorafenib
Investigational
Targeted therapy
The emerging world of targeted cancer therapies
Indication
Myeloma
CML
AML
GIST

Breast (HER2+)
NSCLC
Renal cell
Melanoma
Prostate (PTEN -/-)
NF-
B
Bcr-Abl
Flt3
c-Kit
HER2
EGFR
VEGFR / HIF-1a
b-Raf
p-Akt
Molecular Target

The emerging world of targeted cancer therapies

NF-

B

Bcr-Abl

Flt3

c-Kit

HER2

EGFR

VEGFR / HIF-1a

b-Raf

p-Akt

Molecular Target

All are clients of Hsp90

Inhibiting Hsp90 affects the
stability of these targets

History of Geldanamycin analogs

17-AAG is a semi-synthetic natural product, derived from Geldanamycin

17-AAG activity:

Potent & selective inhibitor of Hsp90

Well-tolerated in humans (>400 patients tested in multiple Phase I trials)

Removed chemical reactivity of geldanamycin

Problems:

Highly insoluble

Sub-optimal DMSO-and
Cremophor
based formulations

Off-patent

O

N

H

H

N

O

Me

O

OH

Me

Me

O

Me

O

O

O

N

H

Me

Me

17-AAG

Novel chemical entity

Patient-friendly formulations

IV in two Phase I trials

Oral under development

Broad therapeutic potential

Strong intellectual property position

Phase II planned for 2007

CI

-

Infinity's lead clinical product: IPI-504 (HSP90 inhibitor)

IPI-504

OH

N

H
N
OH
O
OH
Me
O
O
O
O
NH
2
H
H
+

IPI-504

IPI-504 competitive landscape for IV formulation

POTENCY

DELIVERY

CHEMICAL

PROPERTIES

MTD

COMPOUND

COMPANY

17-DMAG

KOS-1022

~25-50 nM

IV 60 120

min
Chemically
reactive
alkylating
agent
<24 mg/m²
Kosan
17-AAG
KOS-953
~25-50 nM
IV 60-120 min
in Cremophor
Special tubing
Steroid
pretreatment
Emulsion
changes
distribution
and PK
Dose escalation
ongoing;
>
340 mg/m²
Kosan
Emulsion
changes
distribution
and PK
17-AAG
CNF-1010
~25-50 nM
IV 60 min
in lipid
emulsion
175 mg/m²
Biogen/
Conforma
Emulsion
changes
distribution
and PK
17-AAG
~25-50 nM
IV 60 min in
DMSO/Egg
220 mg/m²
Kosan
IPI-504
~25-50 nM
IV 30 min

Diffusion
controlled
distribution
Dose escalation
ongoing at
400 mg/m²
Infinity

IPI-504 competitive landscape for PO formulations

IPI-504 (same
molecule as IV)

17-DMAG

CNF-2024

Small Molecule

Small Molecule

Small Molecule

Compound

Company

Phase of Development

Infinity

Kosan

Biogen

Idec

Serenex

Novartis /
Vernalis
Synta
Pre-clinical
Phase I
Phase I
Preclinical
Preclinical
Preclinical
Novel small
molecules not
derived from
geldanamycin

Intellectual property protection for IPI-504

Composition of matter

Formulations (IV and PO)

Methods of making

Methods of using

Infinity has broad patent applications pending for IPI-504

IPI-504 Preclinical Data

*
*
*
*
*

Highly
responsive to
Hsp90 inhibition
T315I
T790M
T670I
Preclinical evidence of potential as salvage therapy
BCR-ABL
EGFR
KIT
Hsp90 Client
Disease
Drug
CML
NSCLC
GIST
Gleevec,
Dasatinib
Tarceva,
Iressa
Gleevec,

Sutant
Kinase
Inhibitor
Resistance
Mutation

CML / Bcr-Abl
Wild-type protein
Bcr
Abl
Non-cancer related
Protein status
Entity
Function
Hsp90-
dependent
Gain-of-function
mutant
Bcr-Abl
fusion
Constitutively
activated signaling
Drug-resistant
mutant
Bcr-Abl
(T315I)

TKI-resistant
kinase

Gleevec-refractory primary CML cells sensitive to IPI-504

0

10

20

30

40

50

60

70

Pt 1

Pt 2 (T315I)

Pt 3

Control

0.5 uM IPI-504

2.0 uM IPI-504

Collaboration:

Kapil Bhalla, Moffitt Cancer Center

Placebo
Gleevec
IPI-504
0.0%
20.0%
40.0%
60.0%
80.0%
100.0%
15
17
19
21
23
25
27
29

31

33

Days

Oral IPI-504: survival benefit in Gleevec-resistant T315I

CML transplantation model

Collaboration: Shauguang

Li, Jackson Labs

Gleevec

2x daily, 100 mg/kg

IPI-504 oral MWF, 100 mg/kg ($p=0.001$)

Placebo
Gleevec
IPI-504
0.0%
20.0%
40.0%
60.0%
80.0%
100.0%
15
17
19
21
23
25
27
29

31

33

Days

Oral IPI-504: survival benefit in Gleevec-resistant T315I

CML transplantation model

Collaboration: Shauguang

Li, Jackson Labs

Gleevec

2x daily, 100 mg/kg

IPI-504 oral MWF, 100 mg/kg ($p=0.001$)

Placebo
Gleevec
IPI-504
0.0%
20.0%
40.0%
60.0%
80.0%
100.0%
15
17
19
21
23
25
27
29

31

33

Days

Oral IPI-504: survival benefit in Gleevec-resistant T315I

CML transplantation model

Collaboration: Shauguang

Li, Jackson Labs

Gleevec

2x daily, 100 mg/kg

IPI-504 oral MWF, 100 mg/kg ($p=0.001$)

NSCLC / EGFR
Wild-type protein
EGFR
Ligand-dependent
RTK
Protein status
Entity
Function
Hsp90-
dependent
Gain-of-function
mutant
EGFR
(
exon19 or
L858R)
Ligand-
hypersensitive RTK
Drug-resistant
mutant

EGFR
(
exon19 or
L858R + T790M)
TKI-resistant,
ligand
hypersensitive RTK

0
500
1000
1500
2000
2500
3000
3500
4000
12
15
19
22
26
27
32

Days Post-Implant
IPI-504 Vehicle, IP
Gefitinib Vehicle, PO
100mpk Gefitinib, PO
100mpk IPI-504, IP

100mpk
IPI-504
2X
weekly
IP;
100mpk
Gefitinib
daily
PO
for
3
weeks

21%
difference
in
tumor
volumes
between
vehicle
and
Gefitinib
treated
groups
($p=0.54$)

69% difference in tumor volumes between vehicle and IPI-504 treated groups ($p=0.009$)

69%
Non small cell lung cancer xenograft with T790M EGFR
Tarceva/Iressa-resistance mutation

GIST / Kit
Wild-type protein
Kit
Ligand-dependent
RTK
Protein status
Entity
Function
Hsp90-
dependent
Gain-of-function
mutant
c-Kit
Ligand-independent
RTK
Drug-resistant
mutant
c-Kit (T670I)
TKI-resistant,
ligand-independent

RTK

GIST: Gleevec-resistant cells more sensitive to IPI-504

GIST 882*

Gleevec-Sensitive

(primary: exon

13, K642E)

10

100

1000

10

20

30

40

50

10000

60

70

Compounds concentrations (nM)

10

100

1000

10

20

30

40

50

10000

10000

60

70

Compounds concentrations (nM)

IPI-504 : EC50 = 121 +/-

21 nM

IM : EC50 = 147 +/-

42 nM

Gleevec-

Resistant

(primary: exon

11, V560D +

Gleevec resistance: exon

17, D820A)

10

100

1000

5

15

25

35

45

55

65

75

85

Compounds concentrations (nM)

IPI-504

Imatinib

GIST 48*

IPI-504 : EC50 = 54 +/-

7 nM

IM : 25% inhibition @ 10uM

Collaboration:

Fletcher, Demetri, DFCI

IPI-504 Clinical Development Strategy

- *
- *
- *
- *

Development and registration of IPI-504 in hematologic malignancies and solid tumors

Preclinical support for broad role of Hsp90

Early human proof-of-concept with rapid path to registration

Strong scientific rationale

Trials targeted to homogenous patient population (disease-focused)

Surrogate marker

Rapid patient accrual

Single-agent activity in refractory setting (potential for expedited approval)

In parallel, initiate broader development for larger indications (additional diseases, combination therapy, front-line therapy)
IPI-504 Clinical Development Strategy

Principal Investigator:

Dr. George Demetri, DFCI

Objectives:

Safety, PK, dose-ranging

Establish Phase II dose

Surrogate marker of response:

PET scans

Solid Tumor

Gastrointestinal Stromal Tumors

(Gleevec-resistant)

Schedule / status:

Days 1, 4, 8, 11 of 21 day

Continuing dose escalation

Current ongoing phase I clinical trials

Principal Investigator:

Dr. Paul Richardson, DFCI

Dr. Sundar Jagannath, SVCCC

Dr. David Siegel, HUMED

Objectives:

Safety, PK, dose-ranging

Establish Phase II dose

Surrogate marker of response:

M protein levels

Hematologic

Multiple Myeloma

(relapsed, refractory)

Schedule / status:

Days 1, 4, 8, 11 of 21 day

Continuing dose escalation

Phase I dose escalation for IPI-504 (GIST)

1 cycle = 21 days

4 doses (days 1, 4, 8, 11 followed by 10 days off)

Phase I schedule

25%

500

6

33%

400

5

33%

300

4

50%

225
3
66%
150
2
100%
90
1
Escalation over
previous dose
Dose (mg/m²)
Group

Near-term sequence of additional clinical indications
(2006/2007)

Resistance

Mutation

Disease

PI

T. Lynch

T. Kipp, CLL
consortium

Matsui, Smith /

Bhalla

NSCLC

CLL

CML

Tarceva-R

(T790M)

Zap-70

T315I

Focused trials would determine IPI-504 activity in patients with known resistance to targeted therapy

If positive, trials provide opportunity to rapidly advance to market

Additional indications to follow

Site

MGH

UCSD

JHU, Moffitt

Overview

Founded in late 2001 (~5 years old)

Team

Recognized biotechnology investor, business and R&D leaders

~115 employees (~55 PhD / MDs)

Alliance and Financing Strategy

Small molecule technology access alliances with Amgen, J&J and Novartis

Bcl-2 product alliance with Novartis

Public financing via Reverse Merger with Discovery Partners

IPI-504

lead proprietary oncology drug candidate (Hsp90)

Phase I in GIST and multiple myeloma commenced 2005

Phase II anticipated in 2007

Hedgehog pathway

preclinical oncology candidate

Potential for first-in-class systemic hedgehog inhibitor

Proprietary NCE s

Systemic (sub-cu and oral) products

Lead molecule (IPI-609) in advanced preclinical development

First in man expected in 2007

Broad anti-cancer potential

Strong data supporting pancreatic, metastatic prostate, SCLC, others

Single agent activity

Potential for synergy with standards of care
Infinity s Hedgehog program

History of cyclophosphamide
chemical discovery
1950 s

Lambs born in Idaho with cyclopic
features (defect in development of
left-right asymmetry)

USDA determines that pregnant
ewes grazed on the plant *Veratrum*
californicum

Cyclophosphamide
identified as the
teratogenic substance in *V.*
californicum

Purified cyclopamine given to
animals recapitulates cyclopic
features and other birth defects
V. californicum
cyclopamine

History of hedgehog
genetics
40 years later (1980 s to today)

Genes are discovered that control
embryonic development and pattern
formation

One such gene is called hedgehog

Hedgehog mutations in the Drosophila
fruit fly result in cyclopia

Hedgehog function in humans related
to development of the pancreas, gut,

and other elements of GI tract

Cyclopamine chemistry meets hedgehog genetics

Chemistry

The chemical cyclopamine
results in cyclopic animals

Genetics

Mutation of hedgehog pathway
results in cyclopic animals

Might the chemical cyclopamine interact
with genes in the hedgehog pathway?

YES

Cyclopamine is a smoothed antagonist

*Chen et al., 2002 **G&D**

16:2743

Cyclopamine

Normal

Cancer

Cancers have hijacked components of the hedgehog pathway

#

ON = active repressor of Smo

* Mutation in Patched

1

Hahn *et al.*, 1996, **Cell**

85: 841

2

Bale & Yu, 2001, **Human Molec. Genetic.** 10: 757 (review)

3

Berman *et al.*, 2002 **Science**

297: 1559

4

Berman *et al.*, 2003 **Nature**

425: 846

5

Kayed *et al.*, 2004 **Int. J. Cancer**

110: 668

6

Thayer *et al.*, 2003 **Nature**

425: 851

7

Karhadkar *et al.*, 2004 **Nature**, 431: 707

8

Fan *et al.*, 2004 **Endocrinology**

145: 3961

9

Watkins *et al.*, 2003, **Nature**

422: 313

10

Sicklick 2005 **ASCO**; Mohini, 2005 **AACR**

11

Kubo *et al.*, 2004 **Cancer Res.** 64

:6071

State

Normal

Basal cell carcinoma*

1,2

Medulloblastoma*³

Pancreatic cancer

4,5,6

Prostate cancer

7,8

Small cell lung cancer

9

Hepatocellular cancer

10

Breast Cancer

11

Smoothened

OFF

ON

ON

ON

ON

ON

ON

ON

Patched

#

ON

Mutant -

OFF

Mutant -

OFF

OFF

OFF

OFF

OFF

OFF

Hedgehog

OFF

OFF

OFF

Turned ON

Turned ON

Turned ON

Turned ON

Turned ON

Frequency

95%

30-40%

100%

100%

50%

n/a

100%

Cyclopamine validates Hedgehog as a cancer target

Cyclopamine is a plant natural product produced by *Veratrum californicum*

Cyclopamine activity:

Potent inhibitor of Smoothed

Highly active in pancreatic, prostate, small cell lung cancer animal models

Drawbacks:

Insoluble

Caustic formulations

Off-patent

HO

O

HN

H

H

H

H

H

Infinity's lead Hedgehog pathway inhibitors

Novel candidates based on cyclopamine

On mechanism

Superior to cyclopamine:

More chemically stable

More potent

More soluble

Most advanced candidate (IPI-609) in late-preclinical development

First in man 2007

i.v., s.c., or oral formulations

Better oral bioavailability

Better tumor PK

IPI-609 competitive landscape

CUR-61414

Curis

and Genentech Hedgehog antagonist

Highly insoluble: not suitable for systemic administration

Topical formulation failed in Phase 1 Basal Cell Carcinoma trial; failure attributed to formulation, not pathway

Curis

and Genentech

have expressed continued interest in the Hedgehog pathway for systemic agents

Intellectual property protection for IPI-609

Novel scaffold for IPI-609 and analogs with patent applications pending

We believe there are no patents preventing us from marketing IPI-609 or its analogs

0
200
400
600
800
1000
1200
1400
1600
31
36
41
46
51
56
61

Days

Vehicle

IPI-609 10 mpk/day

IPI-609 efficacious in PC-3 prostate xenograft

IPI-609 slows tumor growth rates

0
200
400
600
800
1000
1200
30
35
40
45
50
55
60

Day

Linear Fit

Bivariate Fit of P 10 By Day

200
400
600
800
1000
1200
30
35
40
45
50
55
60
Day
Linear Fit
Bivariate Fit of VP 6 By Day
Median vehicle-treated
animals
Median IPI-609 treated
animals

Clinical development strategy of hedgehog pathway inhibitors

Strong scientific rationale supports targeting of cancers dependent on the Hedgehog pathway

Pancreatic

Small cell lung

Metastatic prostate

Metastatic breast

Ovarian

Others (medulloblastoma, glioma, basal cell carcinoma, etc.)

Identify a rapid path to registration

Potential for sole agent activity or

Combination with a single Standard of Care

Key Principal Investigator relationships established

Pancreatic cancer

Manuel Hidalgo, MD Johns Hopkins

(PCRT

Dan Van Hoff, MD)

Small cell lung cancer

Charles Rudin, MD Johns Hopkins

Prostate cancer

Phil Kantoff, MD DFCI

Howard Scher, MD MSKCC

Chris Logothetis, MD MD

Anderson

Prostate Consortium

Breast

Max Wicha, MD U of Michigan

Heme malignancies

Doug Smith, MD Johns Hopkins
Bill Matsui, MD Johns Hopkins
Kapil Bhalla, MD Moffitt Cancer Ctr

Infinity Pharmaceuticals
Summary

*
*
*
*
*
*

Product Pipeline

IPI-504: Complete Phase I trials

Publish First Clinical Data

IPI-504: Expect to initiate Phase II in 2007

Hedgehog Pathway: Expect to initiate
Phase I in 2007

Successful alliance execution (Novartis, J&J, Amgen)

At least one new corporate alliance

Financing event

Year-end
cash

runway:

12-24

months

2006/Early 2007 Goals, Achievements and Anticipated News Flow

NVS -

Bcl

Pending

DPII merger

AMGN

extension

Expected
at EORTC
11/7/06