Finding the Right Time to Partner: Can You Maximize Value While Balancing Risk and Reward?

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Panelists

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Evaluating Potential Partnerships

- Exclusivity
  - Upfront and near-term milestones
  - Retain profit share option
  - Partner with resources, marketing expertise

- Innovation
  - Diverse partners
  - Complementary program to internal R&D
  - Ability to make rapid progress

- Shared vision
- Scientific alignment

SMALL INNOVATOR

POTENTIAL PARTNER
Funding Trends: Challenging Environment for Early Stage Funding

Life sciences funding by stage 2009-2011

Why did your company delay R&D 2011?

- Funding not available: 40.2%
- Regulation (FDA, EPA, SEC): 27.8%
- Change in corporate priorities or strategy: 25.8%
- Other: 7.2%
- Layoffs: 4.1%
- Closed facility: 0%

Source: PricewaterhouseCoopers, “Zigzagging upward,” February 2012
Source: California Biomedical Industry 2012 Report
Partnering Trends: Early Stage Dealmaking on the Rise

Expectations for Deal Activity

Source: Campbell Alliance’s 2011 Dealmakers’ Intentions Survey
Partnering Trends: Early Stage Dealmaking on the Rise

Collaborations by Stage, 2011

- Discovery: 35%
- Preclinical: 18%
- Phase 3: 17%
- Regulatory: 9%
- Phase 1: 7%
- Phase 2: 6%
- Marketed: 4%
- Formulation: 4%

Source: Drug Discovery & Development Magazine, November/December 2011
Partnering Trends: Clinical Stage Upfronts on the Decline

Alliance Upfronts

Source: Elsevier’s Strategic Transactions via
Partnering Trends: Recent Deal Activity

Licensing Deals with >$10M Upfront Payment

Number of Deals

Source: EBI Transaction Tracker
Accessed November 11, 2010 and October 30, 2011
Partnering Trends: The Rise of Contingent Value Rights

Source: Elsevier's Strategic Transactions
When to Partner Based on Data

**PARTNERING ACTIVITY**
- Early stage partnering on the rise – potential funding alternative
- Phase II dominates in alliances with large upfronts

**FINANCIALS**
- In general
- Upfronts
- Contingent Payments

But upfronts for pre-clinical deals holding steady and R&D investments on the rise
<table>
<thead>
<tr>
<th>Therapeutic Area</th>
<th>Total Number of Deals</th>
<th>Agg. Value of Deals Disclosed ($B)</th>
<th>Mean/Median Deal Size ($M)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cancer</td>
<td>161</td>
<td>10</td>
<td>264/131</td>
</tr>
<tr>
<td>Infectious Disease</td>
<td>90</td>
<td>3.2</td>
<td>191/97</td>
</tr>
<tr>
<td>Neurology</td>
<td>64</td>
<td>4.7</td>
<td>262/105</td>
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<tr>
<td>Autoimmune &amp; Inflammatory (note: mostly early stage compounds)</td>
<td>58</td>
<td>5.5</td>
<td>366/400</td>
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<tr>
<td>Endocrine &amp; Metabolic (note: mostly late stage compounds)</td>
<td>55</td>
<td>3.9</td>
<td>362/163</td>
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<tr>
<td>Diversified &amp; Broad Focus</td>
<td>35</td>
<td>1.8</td>
<td>360/300</td>
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<tr>
<td>Cardiovascular</td>
<td>22</td>
<td>0.5</td>
<td>95/20</td>
</tr>
<tr>
<td>Other/Unknown</td>
<td>105</td>
<td>3.8</td>
<td>182/63</td>
</tr>
<tr>
<td>Unknown</td>
<td>82</td>
<td>1.5</td>
<td>249/243</td>
</tr>
<tr>
<td>All Therapeutic Areas</td>
<td>672</td>
<td>34.9</td>
<td>260/133</td>
</tr>
</tbody>
</table>

Cancer accounted for 28.7% of the aggregate value of disclosed deals.

Autoimmune & Inflammatory had a median deal size 3X as big as the average over all therapeutic areas.

Source: Deloitte Recap Webinar Series
Presented March 13, 2012
Case Study 1:
Dicerna Pharmaceuticals / City of Hope

Objectives

Dicerna
- Exclusivity
- Economics allow stacking with 2nd technology
- Development flexibility
- Risk sharing
- IP control

City of Hope
- Broad technology use
- Diligent commercialization
- Near- and long-term economic returns

Development Plan

- Exclusive license to Dicerna
- Tiered sub-licensing fees (as investment ↑, fees ↓)
- For a fee, Dicerna can delay diligence requirements
- Late stage development milestones

Technology

- RNAi interference technology
- Dicerna needed RNAi delivery technology
Case Study 1: Dicerna Pharmaceuticals / City of Hope

**Exclusive License**

**RNAi delivery technology**
- No sublicenses under existing 3rd-party licenses without Dicerna consent (carve-out for late stage products)

**RNAi interference technology**

**Financials**
- Upfront, mostly equity
- Annual license payment
- Tiered sub-licensing fee
- Late stage product milestones
- Royalties
- [Diligence delay fee]

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Case Study 1: Dicerna Pharmaceuticals / City of Hope

Lessons Learned

• Our solutions were good - deal is working for both parties
• Patience is a virtue
• Cash is worth the same to everyone, but equity isn’t

Potential Pitfalls

• Rude shock for non-exclusive license holder
Case Study 2: Infinity / Novartis

Objectives

• Non-dilutive funding
• 100% ownership in advanced programs
• Partner with shared vision for research
• Partner with development and clinical expertise

Development Plan

• Infinity and partner to collaborate on research
• Infinity to retain options to step back in during clinical trials and commercialization

Technology

• Bcl-2 proteins: key apoptosis regulator
• Single agents: B-cell malignancies dependent on Bcl-2 (e.g., follicular lymphoma, CLL, DLBCL)
• Combo therapy: Sensitize solid tumors to chemotherapeutics
Case Study 2: Infinity / Novartis

Extremely potent compounds that inhibited target of interest

Exclusive License

Collaborative Research
Chemistry
Biology
Structural biology

Financials -
- $15M upfront cash
- $5M equity
- $10M research funding
- Milestones, royalties
Total payments > $400M
- Novartis to invest in IPO if within 2 years

Infinity option to participate in clinical development

Proven track record in clinical trials

Research team with proven track record

Infinity option to co-commercialize in the U.S.

Capacity to commercialize
Case Study 2: Infinity / Novartis

**Lessons Learned**

- Start partnering discussions early
- Have clinical and commercial path well thought out
- Be opportunistic
- Involve lawyers early (and often)

**Potential Pitfalls**

- Challenge to manage multiple large pharma potential partners’ calendars
- Distraction and cost of taking multiple deals to signature-ready agreements
## Case Study 3: Epizyme Partnerships

### Objectives
- Build a leading biopharma company based on personalized therapeutics for patients with genetically defined cancers
- Realize potential of a large target class while retaining value
- Minimize equity while retaining independence and control

### Development Plan
- Develop platform technology in HMT targets
- Develop lead preclinical programs (MLL, non-Hodgkin’s lymphomas and solid tumors)
- Establish pipeline of compounds targeting HMT

### Technology
- Biology - Epigenetic enzymes called HMTs
- Biochemistry - Assays to evaluate enzyme function
- Chemistry - Small molecule HMT inhibitors
Case Study 3: Epizyme Partnerships

- **Multi-target**
- **$20M upfront**
- **Research funding**
- **$630M in total milestones**
- **Worldwide royalties into double digits**

**Platform Expansion**

January 2011

- **EZH2 only**
- **$6M upfront**
- **$208M in milestones**
- **Eisai funds 100% through POC**
- **Epizyme US co-promote and profit share**
- **Ex-US royalties**

**US Rights**

March 2011

- **Epizyme retains all US rights**
- **DOT1L ex-US**
- **3+1 year option for ex-US rights to other HMT programs**
- **Global co-development and funding**
- **$90M upfront**
- **>$160M milestones/program**
- **Ex-US royalties into double digits**

**Transformative**

April 2012

- **$189M capital raised to date**
  - **Venture capital - $54M**
  - **Partners - $135M**

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$189M capital raised to date
- **Venture capital - $54M**
- **Partners - $135M**
Case Study 3: Epizyme Partnerships

Lessons Learned

• Establish business strategy before partnership strategy
• Anticipate downstream consequences of superficially similar deal terms

Potential Pitfalls

• Interplay among multiple partners (rights and organizational requirements)
• Balance near-term cash vs. downstream value capture
Discussion

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