On Helix
02 July 2014

Harren Jhoti
President & CEO
Astex Pharmaceuticals

- **Global developer of small molecule drugs for unmet medical needs**
  - Expertise in oncology discovery & development
- **World-class fragment-based drug discovery platform**
  - Eight products discovered and advanced into the clinic in eight years
- **Two novel medicines in late-stage clinical development**
  - SGI-110 – novel hypomethylating agent (HMA)
  - AT13387 – second generation HSP90 inhibitor
- **Strong partnerships with Pharma and Academia**
  - AstraZeneca, Janssen, GSK, Novartis and ICR, CRUK, NICR, NCI
  - Four partnered pipeline products in clinical development
- **Operations in the UK and US:**
  - UK: Cambridge - Research and Preclinical Development
  - US: Dublin, CA - Clinical Development and Regulatory
- **Otsuka acquisition of Astex for $886m in Oct 2013**
  - A wholly-owned subsidiary of Otsuka Pharmaceutical
# Pharma & Biotech M&A Deals - 2013

<table>
<thead>
<tr>
<th>Target Company</th>
<th>Private/Public</th>
<th>VC/PE/Buyer</th>
<th>Buyer</th>
<th>Upfront Deal Value ($m)</th>
<th>Overall Deal Value (incl) ($m)</th>
<th>Stage of Product</th>
<th>Est. VC Investment ($m)</th>
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<tbody>
<tr>
<td>Onyx (US)</td>
<td>Public</td>
<td>7% Arrogen (US)</td>
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<td>Bausch &amp; Lomb (US)</td>
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<td>Cytochroma (Canada)</td>
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<td>Phase 3</td>
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</tbody>
</table>

* Premium in case of public takeovers

1. Discount to current stock price with further contingent payments
2. Asset sale

• **The role of partnering and collaboration in building (and funding) Astex’s business**
  
  – Leading Fragment-Based Drug Discovery Platform allowed for a hybrid business model: *(i)* internal pipeline and *(ii)* external collaborations
  
  – Early partnerships helped in validating the technology platform
  
  – Revenues offset our cash burn - providing funding for internal R&D activities
    • Not fee-for-service; Significant upfront cash and technology access fees
    • Future success-based milestones and royalties on product sales
  
  – Accessing novel areas of biology and KOLs through collaboration with leading research institutions e.g., ICR & NICR
  
  – Also established partnerships to access supportive, non-dilutive funding from not-for-profit organisations such as CRUK, NCI, MMRF for clinical development
Monetizing Discovery

Validating deals

Transformative deals

Otsuka Acquisition for $886m

• $33MM Upfront and equity

SuperGen Merger

• $37MM Upfront, equity and initial research funding

• $25MM Upfront and equity


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# Partnership Pipeline

<table>
<thead>
<tr>
<th>Compound Name / Mechanism</th>
<th>Discovery</th>
<th>Phase 1</th>
<th>Phase 2</th>
<th>Phase 3</th>
<th>Partner</th>
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<tbody>
<tr>
<td>LEE011 – CDK4/6 inhibitor (Oncology)</td>
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<td>NOVARTIS</td>
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<tr>
<td>AZD5363 – Akt inhibitor (Oncology)</td>
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<td>ICR</td>
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<tr>
<td>AZD3293 – BACE inhibitor (Alzheimer’s)</td>
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<td>AstraZeneca</td>
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<tr>
<td>JNJ42756493 - FGFr inhibitor (Oncology)</td>
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<td></td>
<td></td>
<td></td>
<td>Newcastle University</td>
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<tr>
<td>Multiple Targets (Multiple therapeutic areas)</td>
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<td></td>
<td></td>
<td></td>
<td>Multiple discovery milestones achieved</td>
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</table>

4 partner-funded clinical compounds under active development from Astex collaborations
Novartis Collaboration

• **Initial meeting at LHR Terminal 3 (2 hour stopover, Aug 2004)**
  – Presented on Astex’s CDKi programme and assets
  – NVS initially interested in a license to AT9311 - an oral CDK inhibitor in preclinical development
  – At the same time Astex was about to take its first clinical compound, AT7519, another CDK inhibitor into a FTIM study
  – With possibility of an IPO, Astex didn’t want to delay the development timelines for AT7519 - so were willing to grant NVS an ‘option’ to AT7519 rather than a license
  – *De novo* drug discovery collaboration - selective CDK4/6 inhibitor also in the mix

• **Collaboration and License Agreement**
  – Drug discovery, development & commercialisation collaboration – CDK inhibitors for cancer announced 6th December 2005
  – Alliance contained three projects/assets; AT7519 option, AT9311 license & CDK4 discovery collaboration
Astex Announces New Licensing and Drug Discovery Alliance to Develop Novel Cell Cycle Cancer Drugs

• Astex grants worldwide license to Novartis for Astex’s novel cell-cycle inhibitor, AT9311, with an option to license a second Astex cell cycle inhibitor, AT7519, currently in Phase 1.

• Astex to receive upfront payment and deferred equity payments of $25 million with a potential of up to $520m in fees and equity payments, option payments and milestones.

• Astex to receive royalties on global product sales, and retains option to co-commercialise compounds in the USA.

Cambridge, UK, 6th December 2005. Astex Therapeutics today announced a major new strategic alliance with Novartis focused on the research, development and commercialization of novel cell cycle control drugs for the treatment of cancers and other human diseases.

- Top line deal value $520m
- Upfront and deferred equity $25m
- R&D Funding, milestones, royalties
- US co-promote
Novartis Collaboration - Current Status

- **CDK4/6 inhibitor LEE011**
  - Generated from joint-discovery project
  - One of the most high profile compounds in Novartis’ late stage development pipeline
  - Phase 3 MONALEESA-2 study (advanced breast cancer) commenced Dec 2013

- **AT7519**
  - Continuing in multiple Phase 2 clinical trials
  - Novartis have not yet triggered option

- **AT9311 (Oral CDK inhibitor)**
  - Development of the original compound of interest was discontinued!

- **Received to date: ~$22m FTE + $10m upfront + $15m equity = ~$47m**
- Potential future milestones
- Tiered Royalties
<table>
<thead>
<tr>
<th>Program / Mechanism / Indication</th>
<th>Phase 1</th>
<th>Phase 2</th>
<th>Phase 3</th>
<th>Marketed</th>
<th>Ownership</th>
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<tr>
<td>SGI110 – DNMT inhibitor (MDS, AML, Ovarian, Liver and CRC)</td>
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<td>AT13387 – HSP90 inhibitor (Lung and Melanoma)</td>
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<tr>
<td>AT7519 – CDK inhibitor (MM)</td>
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<td>AT13148 – ROCK inhibitor (solid tumours)</td>
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<td>ASTX727 – Oral HMA (MDS)</td>
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</table>

* Developed in collaboration with

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Locations

• **Research based in Cambridge, UK**
  - Structural Biology & Biophysics
  - Computational Chemistry & Informatics
  - Medicinal Chemistry (+CMC)
  - Biology & DMPK
  - Translational Research and Development
  - Admin, Finance, IP & Commercial

• **Clinical Development based in Dublin, California, USA**
  - Clinical Operations and Clinical Development
  - Regulatory affairs & Quality Assurance
  - Manufacturing/ CMC
  - Accounting & Human Resources
  - Legal Affairs

• [www.astx.com](http://www.astx.com)

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