



BioPartnering North America 2010  
**GlaxoSmithKline's Center of Excellence for External Drug  
Discovery (CEEDD)**

---

William J. Kridel Jr., Founder and Managing Director  
Ferghana Partners Group

January 25, 2010

**ferghana**

## GSK's Center of Excellence for External Drug Discovery (CEEDD)

---

The CEEDD considers itself a pioneer in the quest to find new medicines, going to great lengths to actively seek out and collaborate with world-class biotechnology companies

- Formed in 2005, the CEEDD was the first team in GSK R&D to be truly externally focused (with no internal programs to manage), working across all therapeutic areas, as it was tasked to form multi-program, risk/reward-sharing alliances
- The CEEDD (Center of Excellence for External Drug Discovery) was formed as further validation of GSK's strategy to create small, independent and accountable R&D teams
- In essence, the CEEDD is virtualizing a portion of the GSK pipeline; namely, from target to clinical proof of concept, by forming multiple risk-sharing/reward-sharing alliances
- GSK has 10 such alliances and seeks to create others, starting at any point in the development path - from target identification to clinical proof of concept





## Overview of OncoMed Pharmaceuticals, Inc.



### Business Overview

- Focused on developing monoclonal antibodies that target the biologic pathways critical to tumor initiating cells (cancer stem cells)
- Cancer stem cells differ from normal stem cells because they have accumulated oncogenic mutations that result in the loss of normal limitations on growth. These differences can be exploited to develop therapies that selectively target tumor initiating cells and not normal stem cells
- OncoMed has a portfolio of active antibodies that target biologic pathways critical for survival of tumor initiating cells

### Pipeline Overview

Product	Preclinical	Phase I	Phase II
<b>OMP21M18</b> Solid Tumors			

- OMP-21M18 is a monoclonal antibody that blocks Delta-like ligand 4 (DLL4) signaling to reduce tumor growth by reducing cancer stem cell frequency and by disrupting angiogenesis

### Deal with GlaxoSmithKline

- **December 2007:** Announced alliance to discover and develop novel antibody therapeutics to target cancer stem cells
- Alliance provides GSK with an option to license four product candidates directed at multiple cancer stem cell targets from OncoMed’s library
  - Undisclosed upfront payment comprised of cash as well as an equity investment
  - Eligible to earn milestone payments up to \$1.4B
  - Double-digit royalties on all product sales.
  - GSK has an option to invest in a future IPO by OncoMed
- Alliance includes OncoMed’s lead antibody product candidate, OMP-21M18, a monoclonal antibody in Phase I studies for solid tumors
- OncoMed will develop products through clinical proof of concept across multiple indications; GSK will have an exclusive option to license and continue development
- OncoMed retains the option to participate in development and commercialization of OMP-21M18 on pre-agreed terms

Source: Company Sources, Medtrack



## CEEDD Alliances Summary

The CEEDD has 10 existing alliances [out of 18 started] and will do others, starting at any point in the development path - from preclinical target identification to clinical proof of concept

Initiation Date	Company	Market Cap <sup>(1)</sup>	Product / Technology	Therapeutic Field	Upfront	Deal Size
<i>Figures in US\$, M</i>						
8/24/06	<b>ChemoCentryx</b>	<b>Private</b>	Traficet-EN and 3 other drugs targeting chemokine and chemoattractant receptors	Inflammatory disorders	64	1,564
6/23/09	<b>Chroma Therapeutics</b>	<b>Private</b>	4 Macrophage-targeted compounds technology	Inflammatory disorders, including RA	NA	> 1,000
6/2/09	<b>Concert Pharmaceutical</b>	<b>Private</b>	3 Deuterium-containing medicines including CTP-518 in Phase I for HIV	HIV, renal disease and undisclosed	35	>1,000
3/30/06	<b>Ligand</b>	<b>217</b>	Small molecule therapeutics focused on gene transcription	Undisclosed	15	83 <sup>(2)</sup>
12/19/03	<b>NeuroSearch</b>	<b>437</b>	Research programs within ion channels	CNS including depression, anxiety and schizophrenia	58	140 <sup>(2)</sup>
12/10/07	<b>OncoMed</b>	<b>Private</b>	4 products targeting cancer stem cells (including lead Phase I asset)	Cancer	NA	1,400
10/13/09	<b>Prosensa</b>	<b>Private</b>	4 RNA modulating therapeutics	Duchenne muscular dystrophy	25	680
10/22/03	<b>Ranbaxy</b>	<b>4,624</b>	Ranbaxy drug discovery	Asthma, metabolic, anti-fungal and urology	NA	> 100 <sup>(2)</sup>
7/27/07	<b>Targacept</b>	<b>571</b>	NNR Therapeutics including Lead Phase II asset for pain	CNS (pain, smoking cessation, obesity, addiction, and Parkinson's)	35	1,500
3/31/04	<b>Theravance</b>	<b>861</b>	Multivalent drugs	Antibiotic, respiratory, urinary incontinence and gastrointestinal	129	NA

(1) Market cap as of January 19, 2009 close

(2) Payment per optioned program

Source: Company Sources, Medtrack