

## BIO-Europe Spring 2012: Drug discovery deals

*Where does big pharma take the new drug discovery from? Like every year, the industry will meet for BIO-Europe Spring on March 19<sup>th</sup> to 21<sup>st</sup> in Amsterdam, where foundations are laid for the deals of the future. Since knowledge of historical deal information is a crucial prerequisite for deal negotiation, we have analyzed the financial deal structures of more than 230 research alliances over the last 10 years listed in the Biotechgate Licensing Deals database.*

*By Karin Bakker, February 2012\**

As mentioned in the October 2011 newsletter related to BIO-Europe on early stage oncology deals, drug discovery alliances on proprietary bi-specific antibody technologies seem to have become attractive for pharma companies. Since 2009 Micromet has established oncology drug discovery alliances on its BiTE antibody technology with Sanofi, Boehringer Ingelheim and Amgen, with potential US royalties up to the low thirties. Last month Micromet's latest drug discovery collaboration partner Amgen announced to acquire Micromet in an all-cash transaction valued at USD 1.16bn. Yet another example of a big pharma company acquiring its drug discovery collaboration partner.

Drug discovery deals almost always enclose multiple targets. A good example is the clinical stage biotech company Galapagos. 12 targets were identified in the Biotechgate Licensing Deals Database for both Galapagos's research alliances on rheumatoid arthritis with Johnson & Johnson and osteoporosis with Eli Lilly. While surprisingly regulatory milestones for the two indications varied by only USD 15m (USD 88m versus USD 73m), one-time sales milestones for rheumatoid arthritis were USD 200m higher per program than the one-time sales milestones for osteoporosis.

Companies like Galapagos, Ablynx, Archemix, Molecular Partners, Medivir and Cellzome all tend to establish more than one strategic research alliance with their partners. These additional alliances are either established on different compound classes, disease areas/indications or different technologies. With regard to the latter, Cellzome established a drug discovery collaboration based on its Kinobeads™ and Episphere™ technologies with GlaxoSmithKline for inflammatory disorders in 2008 resp. 2010. With a comparable deal structure containing upfront, milestones, double digit royalty and equity payments, Cellzome could obtain GBP 826m in milestones for 7 kinase-targeted programs and EUR 475m in milestones upon the successful development of small molecules against 4 epigenetic targets.

While potential deal values can vary for a specific licensor when drug discovery deals are established with more than one different licensee, the opposite can also be true. In 2008 Merck & Co established two infectious diseases drug discovery deals with two Indian companies, Ranbaxy Laboratories (now Daiichi Sankyo) and Orchid Chemicals and Pharmaceuticals. With both companies responsible for multiple-target drug discovery and development through phase IIa clinical trials, milestone payments for Orchid were USD 100m in total, while Ranbaxy obtained milestone payments of USD 100m per target.

Comparable deal sizes were identified for drug discovery deals focused on the same indication. Since 2007 Boehringer Ingelheim has established at least 3 research alliances for Alzheimer's Disease. The potential deal sizes for its collaboration on Ablynx' nanobodies and Vitae Pharmaceuticals'

betasecretase inhibitors were valued between USD 240m-265m. Potential deal sizes did not differ much from Merck & Co's 2010 drug discovery deal on O-linked N-acetylglucosaminidase modifiers, which was valued at USD 289m.

Although the disease areas and potential indications differed, the deal financials for two RNA-antagonist drug discovery alliances established by Santaris Pharma and Regulus Therapeutics with GlaxoSmithKline in 2008 were comparable. While the Santaris' research alliance used its Locked Nucleic Acid technology for viral infections, Regulus' microRNA discovery alliance focused on autoimmune disorders like rheumatoid arthritis. Both companies were responsible for drug discovery and development through phase IIa clinical trials, obtained an upfront payment of USD 12m-15m, milestones of around USD 140m-144m per program and USD 5m in equity payments.

Surprisingly total milestone payments of the nucleoside analogue drug discovery deals for hepatitis C between Biota Holdings and Boehringer Ingelheim and between Metabasis Therapeutics and Roche varied almost 90%. In 2006 Biota obtained USD 102m in total milestones, while total milestones for Metabasis in 2008 were USD 193m.

If you would like to find out more about the mentioned deals and/or additional deals between Pharma and biotech, the Biotechgate Licensing Deals database provides you with all deals that have financial information.

*The Biotechgate Licensing Deals database contains more than 1380 therapeutic deals over a 16 year period from small company licensors to leading licensees. The database only contains deals on therapeutics with at least one financial component. Each deal entry is categorized and searchable by licensor, licensee, indication, compound details, compound name, development stage (research – filed for regulatory approval), licensed territory, potential deal size, upfront, total milestone payments, regulatory milestone payments, sales milestones payments, royalties on sales, research funding, equity and by year of deal establishment. More information is available at [www.biotechgate.com/deals](http://www.biotechgate.com/deals)*

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