

BIOPHARMA NEWS DIGEST

Antibody Companies Become Hot Targets

Genentech purchased Tanox for \$900M



Tanox was co-founded by Dr. Nancy T. Chang (Chairman of the Board, former President & CEO) & Tse Wen Chang in 1986. It is a biopharmaceutical company with demonstrated expertise in monoclonal antibody technology. Tanox specializes in the discovery and development of biotherapeutics. Utilizing monoclonal antibody technology, Tanox develop innovative therapies for the treatment of immune-mediated diseases, inflammation, infectious disease and cancer. Its first-approved drug, Xolair® (omalizumab), is the first anti-IgE antibody to be brought to market.

Genentech shares with Novartis A.G. in the development and commercialization of Tanox's asthma-fighting drug Xolair. The acquisition is to streamline a three-way partnership and Genentech will no longer have to make royalty payments to Tanox for U.S. sales. In addition, Genentech will receive Xolair royalty payments from Novartis, which owns sales rights outside the country. Xolair had about \$100 million in U.S. sales quarterly, and Genentech pays 8% to 12% to Tanox.

Genentech hopes to complete the acquisition by the first quarter in 2007. Although this is a small acquisition for a company with an \$88 billion market capitalization, it is a dramatic departure from Genentech's previous growth strategy. Genentech has chosen to make its own drug discoveries in the past.



Dr. Chang received her doctorate in biological chemistry from Harvard University and has since received numerous academic, national and international awards for her business acumen and contributions to the biopharmaceutical industry. Dr. Chang formerly served on the board of the Biotechnology Industry Organization, the world's largest organization representing the biotechnology industry. She also has held leadership positions with various biotechnology, business and technology organizations. Nancy is a frequent speakers for biotech conference. In 2005, Nancy was invited to give a keynote speech to SAPA-West 7th Annual Conference.

Merck & Co. Purchased Abmaxis for \$80M

Abmaxis was founded in 2000 by a group of scientists from mainland China. Abmaxis has developed a breakthrough antibody engineering technology platform, Abmaxis in-silico Immunization (AISIM™). AISIM™ has caught the attention of the pharmaceutical industry with its innovative antibody engineering technology platform which uses "structure-Centric" approach (instead of conventional



Abmaxis' co-founders & leadership team are mostly China-educated scientists. Shown in the photo are (from right to left) Dr. Peter Luo, CTO (B.S from Beijing Univ., M.S. from IHEP, Science Academy of China), Dr. Shengjiang Liu, former-president & board director (M.S. from Nanjing Agricultural University, China), Dr. Ping Zhong, VP of Biology (M.D. from Jinan University of Guangzhou, China) and Dr. Shengfeng Li (not shown in photo), CSO (D.V.M. from Central China Agricultural University, China).



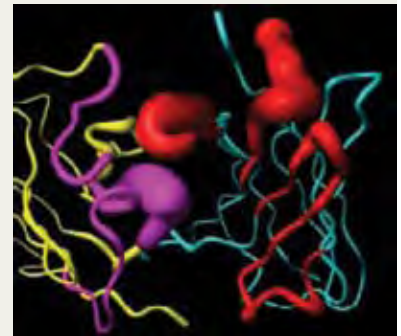
Dr. Shirley Liu Clayton was the CEO who led the successful acquisition by Merck.

“Sequence-Centric” technologies) and computational design create the best antibody structure to target a disease mechanism.

The potential of this technology was proved to Merck when Abmaxis began to work on one of its monoclonal antibodies in 2004. the results showed the re-engineered antibody has improved its ability to bind to the target 70-fold while retaining the accuracy of its targeting.

“The overwhelming success of that collaboration was a key factor in Merck’s decision to pursue an acquisition with Abmaxis,” said Merv Turner, Merck’s head of worldwide licensing and external research. And a visit in March to Abmaxis’ headquarters by a Merck team headed by Dr. Kim led to the decision that “this is the kind of superb science we want to bring into Merck.

“Ours has been an excellent collaboration of scientific talent, and we are delighted at this most recent turn in Abmaxis’ relationship with Merck,” said Shirley Clayton, chief executive of Abmaxis. “We are confident that Merck can maximize the value of our novel technology platform to expand its presence in the biologics field.”



Major Drug Makers Establish R&D Centers in China

For years, Multi-national pharmaceutical companies have rushed to gain a foothold in China. All the major drug makers have established marketing and manufacturing presence in the country. With a population of more than 1.3 billion, it’s one of the world’s largest and fastest-growing markets for prescription drugs. China’s domestic pharmaceutical market has grown more than 20% a year for the last three years. By 2010, China’s annual drug sales are expected to nearly double, to \$25 billion. At the same time, China’s emergence as a source of inexpensive yet topflight scientific talent has not being fully appreciated until now.

Novartis plans for a \$100 million research center in Shanghai

On Nov. 6, Novartis unveiled plans to build a \$100 million research and development center in Shanghai. The new facility will focus initially on the infectious causes of cancer endemic in China and Asia. It will also work to combine Western technology and drug-discovery approaches with those of traditional Chinese medicine.

”The Chinese government has made a concerted effort to promote life sciences,” says Daniel Vasella, chairman and CEO of Novartis. “And the caliber of the science is extremely good and improving all the time.”

Novartis also hopes to capitalize on the increasing number of Chinese returning home from abroad. The new center’s head of research was born in Shanghai but has spent time at MIT, Harvard, and, most recently, at Novartis’ global research headquarters in Cambridge.

A provisional R&D facility in Shanghai’s Zhangjiang Hi-Tech Park is set to open in May, 2007, and by July, 2007, Novartis plans to have completed a permanent 38,000-square-meter facility for an estimated 400 scientists, mainly of Chinese background. Leading the Novartis China will be Dr. En Li who was originally graduated from Beijing University.



AstraZeneca invest \$100 million in R&D in China

In May 2006, Britain’s AstraZeneca announced its intention to invest \$100 million in R&D in China over the next three years, focusing on the benefit and value of innovative medicines for Chinese patients.

The prime focus of this program will be the establishment of the AstraZeneca Innovation Centre China. The company has initiated a comprehensive search for an appropriate location for the Innovation Centre, which will be operational by the end of 2009. The Centre will focus on translational science by developing knowledge about Chinese patients, biomarkers and genetics. The initial therapeutic area for the Innovation Centre will be cancer, which is a major cause of death in China.



“With China’s rapid economic growth and increasing demand for better healthcare, China has become one of the most important emerging markets for AstraZeneca and will be important to our future success.” said David Brennan, CEO of AstraZeneca PLC.

Roche builds New R&D centre in Zhangjiang Hi-Tech Park

Roche expanded its global R&D activities by establishing a centre in Shanghai, China’s biotech hub in early 2004. Roche is the first global healthcare company to establish an R&D centre at Zhangjiang Hi-Tech Park in Shanghai, China. The centre will be wholly owned and operated by Roche and will support the Roche Group’s worldwide R&D activities and its strategic business development efforts in the Chinese market. The



Shanghai site will be an important addition to the Group's R&D facilities in the United States, Japan and Europe.

'For Roche the establishment of the Roche Zhangjiang R&D centre means we are entering a new field in China — in addition to our production facilities in Shanghai and our nationwide marketing and sales organization. For China this investment is a big step towards making Shanghai a centre for pharmaceutical research and biotechnology through transfer of international expertise, competence and knowledge. This is another example of Roche's excellent cooperation with the City of Shanghai', said Antonio Chow, General Manager of Roche Pharmaceuticals Shanghai Ltd., at a project announcement ceremony in Shanghai.

The research at Roche China is led by Dr. Li Chen. Dr. Li is a member of BOD of Sino-American Pharmaceutical Association (SAPA) and Scientific Committee of the Chemogenomic Lab at Peking University. He recently gave a keynote speech at Business Symposium organized by SAPA-West.

Pfizer consider establishing its own R&D center



Pfizer entered the China market in the 1980's, with a long-term vision for development. Pfizer now has three business segments in China: pharmaceutical, capsule and animal health products. Pfizer China focused on the therapeutic areas of cardiovascular disease, endocrinology, neuroscience, arthritis and other flammatory diseases, infectious disease, urology, ophthalmology and oncology.

Pfizer opened many branch offices in most major cities throughout China. In 1997, Pfizer established its China management center in Beijing; in 2004, established the Pfizer Investment Co.,Ltd. and the Pfizer China Regional Headquarters in Shanghai to integrate and oversee all of Pfizer's China operations. In the coming five years, Pfizer plans to introduce 15 innovative products in the China market, three times the number of products launched in the past five years. Pfizer set up a regional headquarters in Shanghai, and consider establishing its own R&D center in China.

BioPharma News Digest is collected and commented by Dr. Zhu Zhen Pirot, Associate Director of Cell Biology Assay Technology at Receptor BioLogix. Her recent focus is drug development and preclinical studies for cancer therapeutics and gene therapy. Previously she has led the Bioanalytical team at both Receptor BioLogix and Avigen. She completed her post- doctoral research and later worked as a research scientist in cancer signaling and drug discovery at Chiron (now Novartis). Zhu received her Ph.D. in Human Oncology from Turin University, Italy. She is also a medical doctor by training from China.

