News in brief

Biotechnology stocks start millennium strongly

The International Biotechnology Trust (IBT; London, UK) reported a buoyant start to 2000 both for itself and for the biotechnology industry as a whole. The Biocentury US Biotech Index and the London Biotech Stock Index rose 67% and 63%, respectively in Q4 of 1999. These increases are thought to reflect the movement of investors away from Internet companies, because of the attraction of recent favourable news (such as the imminent completion of the Human Genome Project and recent successes in genetics research) and the diversity of biotechnology stocks. Jeremy Curnock Cook (Director of IBT) concluded that, 'Year 2000 has started at an incredible pace for biotechnology companies, with stock prices rising day by day. Positive sentiment and ever increasing clinical and commercial activity should provide for a very dynamic year in the industry.'

The market now appeals to new and old, short- and long-term investors who are mainly interested in either near-term commercial success (mainly from companies that either sell products or services to the pharmaceutical industry) or in companies that look to have excellent future potential (such as genomics and antibody companies). However, this share strength brings with it a certain volatility and risk, especially for the casual investor.

Company activity

Market confidence and maturation was displayed throughout 1999 by significant merger and acquisition activity. Within the IBT, Pharmacia & Upjohn started the year by acquiring SUGEN in a deal valuing the company at £455 million. This activity spread to Cytel who decided to join its majority-owned subsidiary Epimmune, creating the company Epimmune. November brought the merger of CeNeS with Core Group to create CeNeS Pharmaceuticals plc. The year concluded with the acquisition of Cerebrus Pharmaceuticals by Vanguard Medica.

Improved access to Human Genome Project data

Gene sequence data or physical copies of the genes collected by Incyte Genomics (Palo Alto, CA, USA) for the Human Genome Project, together with additional information about the genes, should be more accessible to academics and biotechnology and pharmaceutical company researchers through the use of an e-commerce genomics program (Life-Seq GENE-BY-GENE) launched by the company. Submission of a sequence query to their website (http://www.incyte. com) will return a view of the gene, and other gene sequence data or the clone can then be purchased. This program was designed to try to reduce the time for gene discovery and to give access to all the expressed sequence tags (ESTs), full-length sequence data and reagents required to identify new disease-associated genes, novel drug targets, and potential diagnostic and therapeutic proteins.

Parkinson's disease market predicted to double in ten years

The introduction of novel levodopa analogues and new formulations of dopamine agonists is set to double the Parkinson's disease drug therapy market by 2008, according to a recent report by Decision Resources (Waltham, MA, USA). The study, entitled *Parkinson's Disease*, evaluated the potential commercial impact of current research in this field (including cell therapy and gene therapy) for the period of 1998–2008.

The largest market impact is expected from the arrival of novel delivery systems for levodopa and the investigation into whether dopamine agonists monoamine oxidase-B (MAO-B) inhibitors and *N*-methyl-D-aspartate (NMDA)-receptor antagonists possess neuroprotective qualities. When the study began in 1998, the Parkinson's disease drug therapy market of the seven major pharmaceutical markets (including the US, UK and Japan) exceeded $850 million. When the study concludes, sales of dopamine agonists, which comprise 30% of the market, are predicted to be $570 million.

Sequence of more *Chlamydia* genomes identified

The DNA sequencing of the *Chlamydia trachomatis* mouse pneumonitis (MoPn) strain Nigg and the *Chlamydia pneumoniae* AR39 genomes has now been completed by The Institute for Genomic Research (TIGR; Rockville, MD, USA), in collaboration with The University of British Columbia Centre for Disease Control (Vancouver, British Columbia, Canada) and the University of Manitoba (Winnipeg, Canada). This work was funded by the National Institute for Allergy and Infectious Disease (NIAID) and the National Institutes for Health (NIH)[1].

C. trachomatis is a major cause of several sexually transmitted diseases, an important cofactor in the transmission of HIV and is also thought to trigger trachoma, leading to blindness in many developing countries. Although the strain sequenced here was one that specifically infects mice, the researchers found few differences in the genes between this genome and the human version, which was recently

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sequenced by researchers at Stanford University (CA, USA)[2].

C. pneumoniae is a common trigger for many respiratory diseases such as bronchitis, pharyngitis and pneumonitis, and might contribute to promoting vascular infection and to atherosclerotic vascular disease and Alzheimer's disease. There was a 99.9% homology of the genes between the genomes of this strain sequenced by the TIGR researchers and by the Stanford researchers, suggesting that one successful bacterium has infected a large proportion of the human population. However, the differences that were observed could explain variations in the severity of the disease. Researchers at TIGR also identified a virus that infects the bacteria, which means that by killing the bacteria, the virus could then cause an inflammatory response through the release of cell surface proteins and other factors from the dead bacterium.

1 Read, T.D. *et al.* (2000) Genome sequences of *Chlamydia trachomatis* MoPn and *Chlamydia pneumoniae* AR39. *Nucleic Acid Res.* 28, 1397–1406

2 Kalman, S. *et al.* (1999) Comparative genomes of *Chlamydia pneumoniae* and *C. trachomatis*. *Nat. Genet.* 21, 385–389

Acute leukaemia market set to rocket

New chemotherapeutic agents will drive rapid expansion in the acute leukaemia market over the next ten years, according to a recently published Decision Resources study (Waltham, MA, USA). Sales of these drugs currently enjoy steady growth in the seven major pharmaceutical markets (including the US, UK and Japan). However, this is expected to increase by an average of 16% per year when several new treatments reach the market. These include multidrug resistance modulators (such as PSC833; Valdospar), therapeutic monoclonal antibodies (such as Wyeth-Ayerst's CMA676) and an increasing use of colony-stimulating factors (CSFs). It is hoped that several new drugs for treating acute leukaemias could also be used for other cancers possessing similar aetiology.

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Patent proceeding…

The **European Patent Office Opposition Division** has revoked the broad claims in the European humanization patent EP 0 451216 regarding the humanized monoclonal antibodies produced by **Protein Design Labs** (PDL; Fremont, CA, USA) and has upheld claims that protect Zenapax, which was created by PDL and is licensed to Hoffman-La-Roche (Basel, Switzerland). The Opposition Division said that the decision was based on formal matters of European patent law and did not decide whether the claims were inventive in light of the prior art nor decide other issues of patentability.

PDL have stated that they will appeal against the decision to the Technical Board of Appeals at the European Patent Office, who will reconsider all the issues, the whole process being likely to take several years. Laurence J. Korn, CEO and Chairperson of PDL said, 'We intend to move forward with our business strategy of patent licensing, humanization of antibodies for corporate partners, and the clinical and commercial development of our proprietary pipeline of eight announced product candidates in clinical trials.'