Saharan Africa) in 2001. Furthermore, President Clinton has recently announced the Millennium Vaccine Initiative to promote the affordable development and deployment of vaccines against diseases, including AIDS, that are prevalent in the Third World.

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3 Parren, P.W. *et al.* (1997) Relevance of the antibody response against human immunodeficiency virus type 1 envelope to vaccine design. *Immunol. Lett.* 57, 105–112

Clare Sansom

News in brief

Japan could adopt US R&D model

Japanese pharmaceutical firms and investors have shown interest in the unique university-based R&D business model operated by Immtech International (Vernon Hills, IL, USA). The model involves the partnership of biotechnology companies with research scientists and universities and has been used for the cost-effective development of thousands of compounds in the US. The Japanese government is currently pledging billions of US dollars to stimulate the development of a life science and biotechnology industry in Japan.

The business model is cost-effective because it transfers the costs of research and development from biotechnology companies to universities. Biotechnology companies provide the service of licensing and marketing compounds produced, facilitating a rise in the number of new drugs being developed. While the new company grows on the basis of the ownership of the new compounds, the universities involved receive performance-related stock warrants and see their products rapidly reach the marketplace.

EC to increase scientists 'quality of life'?

Growth and job creation in new sectors such as biotechnology are driven essentially through the setting-up and development of new companies. As part of the European Commission's *Quality of Life* program, a series of business-planning workshops are to be held across Europe with the aim of helping scientists launch their own biotechnology companies.

The Biobiz® initiative has received an EC grant of EURO 100,000 as well as financial support from Arthur Andersen and Eurobiobiz (Saint Beauzire, France).

Intensive three-day training workshops will include instruction in basic management and finance skills. The course is designed for (potential) entrepreneurs in the biotechnology sector and applicants should have a clear start-up project as well as a basic understanding of what is involved in starting and running a business. The course is only available to researchers from EU Member or Associated States.

To register contact: Michel Lepers
EuroBiobiz
tel: +33 4 73 64 43 36
fax: +32 4 73 64 43 37
e-mail: michel_lepers@compuserve.com

For more information please contact:
Stéphane Hogan
Quality of Life program, Research DG,
tel: +32 3 396 2965
fax: +32 3 399 1860
e-mail: stephane.hogan@cec.eu.int

Virtuoso performance by Siemens

A new diagnostic tool for viewing the vascular system has been developed by Siemen Medical Systems (New York, NY, USA) in conjunction with Alejandro Berenstein of New York's Beth Israel Medical Center (New York, NY, USA), and Michel Mawad from The Methodist Hospital (Houston, TX, USA).

The tool, 3D Virtuoso, is a computer program that uses computed tomography (CT), magnetic resonance (MR) and digital subtraction angiography (DSA) data to construct two images, which are then viewed through a headset. The two images, one for each eye, are set six degrees apart and give such an impression of depth and perception to the wearer that even very small venous anomalies can be distinguished. The software can also be made to effectively 'place' the wearer inside the blood vessel itself.

Berenstein points out that, 'This new technology enables us to assess whether and how well problems such as aneurysms, stroke or vascular problems can be treated… We eliminate the risk of side effects associated with traditional endoscopy such as perforation, infection and haemorrhage.'

The software also has wider implications for use in research, where it could be used to assess the efficacy of test treatments.

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Modified antisense drugs safer in mice

Safer second-generation chemically modified oligonucleotides have been produced by Isis Pharmaceuticals (Carlsbad, CA, USA). These compounds contain sugar modification in the 2′-position (such as 5-methyl cytosine and 2′-methoxyethoxy substituents) and produce significantly less immune stimulation than the first-generation antisense drugs. As these drugs are more stable than the first-generation compounds, they might be more potent and possible orally active[1].

Repeated administration of phosphorothioate oligodeoxynucleotides to mice was shown to produce splenomegaly and cell infiltrates (both evidence of immune stimulation) in the liver and kidney. Immunohistochemical analysis indicated that cell infiltrates in the liver and kidney were primarily mononuclear cells associated with increased expression of the endothelial-leukocyte cellular adhesion molecule, intracellular adhesion molecule 1 (ICAM-1) and the cytokine, interleukin 6 (IL-6).

1 Henry, S. *et al.* (2000) Chemically modified oligonucleotides exhibit decreased immune stimulation in mice. *J. Pharmacol. Exp. Ther.* 292, 468–479

Intracellular bigger picture revealed

Researchers at Rosetta Inpharmatics (Kirkland, WA, USA) have used DNA microarray and bioinformatics strategies to develop a new way of analyzing intracellular signalling pathways. The technology confirms previous studies carried out on yeast, as well as revealing functional overlap of the filamentous growth and mating responses.

Genetic manipulations enabled the analysis of changes in gene expression underlying pheromone signaling, cell cycle control, and polarized morphogenesis. This process involved constructing a two-dimensional hierarchical clustered matrix, covering 383 of the most highly regulated genes, from 46 diverse experimental conditions[2]. All data was verified through independent biological experiments.

'This is a major advance in the field of genomics because, until now, it has been assumed that to study all proteins in the cell simultaneously, one has to use proteomic approaches such as mass spectroscopy. We've shown that much can be learned about protein activities simply by looking at the expression patterns of all genes in the organism,' said Stephen Friend, President and Chief Scientific Officer at Rosetta.

Leland H. Hartwell, Chairperson of Rosetta's Scientific Advisory Board said, 'This work illustrates the potential to identify the time-course of all transcriptional responses resulting from activation of a signalling pathway, thereby identifying many previously unknown candidate genes for the biological process under study'.

2 Roberts, J. *et al.* (2000) Signaling and circuitry of multiple MAPK pathways revealed by a matrix of global gene expression profiles. *Science* 287, 873–880

Relief promised for depressed generation

Third-generation antidepressants such as Wyeth's Efexor (venlafaxine), Akzo Nobel's Remeron (mirtazapine) and Pharmacia and Upjohn's Edronax (reboxetine) could soon overtake selective serotonin reuptake inhibitors (SSRIs) in antidepressant markets worldwide[3]. These new drugs are more effective, better tolerated and have faster onset times than the current family of market leaders SSRIs.

'The evidence indicates that the SSRIs might well suffer the same fate that they inflicted on the TCAs [tricyclic antidepressants] and MAOIs [monoamine oxidase inhibitors]. From the patients' perspective, however, this can only be good news', said Christine Hollidge, Datamonitor analyst.

The adverse side effects associated with TCAs and MAOIs has led SSRIs to dominate in the US, France, Germany, Italy, Spain and the UK. A similar dominance is expected in Japan when more of these drugs become available.

3 Datamonitor (1999) *Treatment Algorithms 1999: Segmenting the Depression Patient Population*

Indian herb for common colds

The herb *Andrographis paniculata* has been shown to significantly improve cold symptoms[4] in a four-day double-blind placebo-controlled trial of 158 adults, supporting previous observations.

Andrographis is a shrub found throughout India and in other Asian countries and is sometimes known as 'Indian echinacea'. Now popular in Scandinavia, it has been historically accredited with limiting the Indian flu epidemic of 1919.

Previous studies have suggested that *Andrographis* could also prevent colds when taken in small doses. However, in some studies, the drug has been shown to impair fertility in rats and mice and, therefore, more research is necessary before it can be recommended for young children, pregnant or nursing women, and those with severe liver or kidney diseases.

4 Caceres, D.D. *et al.* (1999) Use of visual analogue scale measurements (VAS) to assess the effectiveness of standardized *Andrographis paniculata* extract SHA-10 in reducing the symptoms of common cold. A randomized double blind-placebo study. *Phytomedicine* 6, 217–223

Ben Ramster