

News in brief

Frankfurt park courts bio-entrepreneurs with world class facilities

Young biotechnology firms and entrepreneurs looking for their first premises are being offered extensive facilities by Infraser Höesch (Frankfurt, Germany) on the Frankfurt-Höchst Industrial Park (Frankfurt-am-Main, Germany). The park, currently home to almost 40 companies, including Aventis Pharma, Pfizer and Novartis, is hoping to attract further investment by offering favourable rents, easy access to capital, patent lawyers, tax advisors and consulting companies. Infraser Höesch, which was demerged from the former Höesch AG, also offer considerable purchasing power to the small company because of the site's unified organization.

One principal tenant is Aventis Pharma, who have invested US\$150 million in the site to build the world's largest insulin plant. Hanns-Eberhard Erle from Aventis Pharma described the site as having 'worldclass conditions for biotechnology'.

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Clinical trial results for viral respiratory infection and viral meningitis

The results of three Phase III clinical studies on pleconaril for viral respiratory infection (VRI) in adults and viral meningitis in adults and children have been announced by Viropharma (Exton, PA, USA). The company has reported that the studies were successful with improved time-to-resolution of the diseases compared with placebo-treated patients in both indications. Most side

effects were reported at a similar rate in both treated and control patients, except for a raised frequency of mild nausea in the treated group.

Pleconaril is an orally acting small molecule with broad anti-picornavirus activity and is thought to inhibit the function of the picornavirus capsid, disrupting several stages of the viral life cycle. One of the studies showed that in VRI, the time-to-resolution of the illness was significantly reduced in patients receiving the drug who were not taking concomitant cold medications ($p = 0.03$), as assessed by the absence of a runny nose and reduction of other symptoms. Objective symptoms such as mucus production and sleep disturbance were also significantly reduced, as were the middle ear pressure and levels of viral shedding. If subsequent studies due to be conducted in the next few months produce similar results, the company plans to submit a new drug application for regulatory approval.

In viral meningitis, significant effects of the drug were only seen in adult patients with the most severe disease, where the endpoint of the study was resolution of the headache. In children, most showed resolution of the headache symptoms following lumbar puncture and, hence, the effects of the drug were not significant.

Ongoing studies are also examining the use of this drug in serious neurodegenerative and life-threatening picornavirus diseases such as chronic meningoencephalitis, neonatal enteroviral disease, polio and myocarditis.

Swiss to tempt UK firms with tax breaks and loans

UK companies are being offered major financial incentives to set up sites in the Swiss region of Valais in an effort to promote employment and investment.

The incentives include exemption from all Swiss tax for up to ten years, guaranteed bank loans for up to two-thirds of the total investment, and up to 50% financing of research carried out with Swiss Academic Institutions and of consulting services.

Pharmaceutical and biotechnology companies such as Novartis, Ciba Specialty Chemicals and Lonza have been established in the region for 80 years. Recently, PPL Therapeutics have shown interest in the offer, along with telecommunication and information technology firms such as Orange. Switzerland has long been attractive to employers due to its stable economy, lack of customs duty and quote restrictions, and the availability of skilled labour.

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Antisense therapy trial results for non-Hodgkin's lymphoma

Positive results have been reported for a Phase I clinical and pharmacokinetic study using a Bcl-2 antisense oligonucleotide therapy for non-Hodgkin's lymphoma (NHL)¹. The study by Genta (Lexington, MA, USA) assessed the response of 21 patients with Bcl-2-positive relapsed NHL to a 14-day subcutaneous infusion of G3139, an 18-mer phosphorothioate oligonucleotide complementary to the first six codons of the Bcl-2 open reading frame.

The Bcl-2 protein levels were significantly reduced in seven out of 16 assessable patients in tumour cells derived from either lymph nodes or peripheral blood or bone marrow mononuclear cell populations, as measured by fluorescence-activated cell

sorting of the tumour samples. Measurement of the response using computer tomography showed one complete response (who has remained in remission for more than three years), two minor responses, nine cases of stable disease and nine cases of progressive disease. Dose-limiting toxicities were thrombocytopenia, hypotension, fever and asthenia. Howard Fingert, Vice President for Clinical and Regulatory Affairs at Genta said, 'These responses are highly encouraging, given that the patients had progressive disease when they entered the study.'

- 1 Waters, J.S. *et al.* (2000) Phase I clinical and pharmacokinetic study of Bcl-2 antisense oligonucleotide therapy in patients with non-Hodgkin's lymphoma. *J. Clin. Oncol.* 18, 1812–1823

Electroporation for gene transfer in muscle tissue

A preclinical study conducted by Genetronics Biomedical Ltd (San Diego, CA, USA) has recently shown that electroporation can increase gene expression in muscle tissue by 500-fold and that this gene expression was observed for at least six months in an animal model in the tibialis anterior muscle². In initial studies, although electroporation using low-voltage and long-pulse currents was more efficient than intramuscular DNA injection, the transgene expression rapidly declined after day seven. However, optimization of the voltage, pulse number and quantity of injected luciferase-encoding plasmid DNA showed that the most effective currents are high-voltage and short pulse (900 V, 100 μ sec). Martin Nash, CEO of the company said, 'Our electroporation technology does not use viruses, but achieves similar levels of gene expression.'

- 2 Vicat, J.M. *et al.* (2000) Muscle transfection by electroporation with high-voltage and short-pulse currents provides high-level and long-lasting gene expression. *Hum. Gene Ther.* 11, 909–916

Pharmacogenetic developments might require drug registration changes

New approaches to drug registration should be considered to keep pace with developments in pharmacogenetics, according to a recent article in the *Lancet*³. Developments in the field will soon enable doctors to predict which patients are likely to benefit from specific treatments, even before it is prescribed, by making use of their genetic records. This information, termed a medicine response profile, could have several uses including to reduce the chance of patients experiencing adverse reactions to drugs, to increase specificity against subtypes of diseases such as Alzheimer's (especially the rarer mutations), and to reduce the time drugs spend in development.

To make traditionally large Phase III trials more efficient, it is proposed that these trials could involve only responsive patients. This should hopefully reduce research time, reduce costs of drug development, expand research to cover more diseases, and improve drug surveillance of treated individuals after registration. 'The potential impact...[of]... pharmacogenetics...on healthcare over the next few years could be tremendous', said Allen Roses, author of the article and worldwide Director of Genetics at GlaxoWellcome (Research Triangle Park, NC, USA).

- 3 Roses, A.D. (2000) Pharmacogenetics and future drug development and delivery. *Lancet* 355, 1358–1361

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