

Current Patents Gazette

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DOLPHIN



The records appearing in this Gazette will be added to DOLPHIN, the database Of all pharmaceutical inventions in the next week. Based on the INPADOC database produced by the European Patent Office, it covers all national and international patents with relevance to pharmaceutical research and development published from 1968 onwards and selected patents from earlier years. DOLPHIN contains information on bibliographic data, contents, associated products, legal status, licensees and context of patents, which is presented in a format to convey all aspects of a patent at a glance.

News & Highlights from Week 0619

Novo Nordisk's granted SPC/GB96/022 for **recombinant coagulation Factor V11a (eptacog alfa)**, entered into force on 16th April 2006, as reported in the Patents and Designs Journal this week (PDJ No. 6103). Novo Nordisk's eptacog alfa (**NovoSeven**) is an inactivated recombinant form of plasma coagulation Factor VIIa that enables clotting through a mechanism independent of Factor VIII or IX and binds to tissue factor, leading to activation of coagulation and clot formation. This SPC is due to expire on 27th December 2010, based on Swiss marketing approval, as are the SPCs granted in Sweden and Switzerland. SPCs granted in other European countries, including France and Germany, are due to expire in February 2011, based on the first EU approval. It remains to be seen if these later expiries will need to be corrected following the ECJ ruling last year about using earlier Swiss approvals, or whether they will be challenged by generic drug companies. Novo Nordisk holds exclusive rights to eptacog alpha in most major markets worldwide and sales of eptacog alpha reported by Novo Nordisk for 2005 were \$807 million, representing a 16% year-on-year growth. In the US, eptacog alfa is licensed for the treatment of bleeding episodes and for the prevention of bleeding during surgery in patients with congenital hemophilia, whilst in Europe, the drug is also licensed for acquired hemophilia, congenital factor VII deficiency, and in patients with Glanzmann's thrombasthenia. The company is also developing eptacog alfa for the potential treatment of intracerebral hemorrhage and is investigating an iodine-123-labelled version as a radioimaging agent for the potential detection of bleeding.

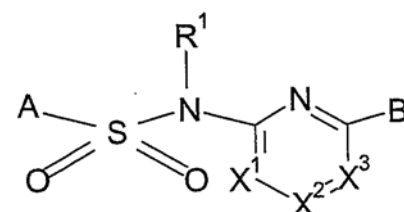
The PDJ also reports the entering into force of SPC/GB98/033 for **Zafirlukast (Accolate)**. This SPC is based on **AstraZeneca's** patent,

EP199543, and is due to expire on 2nd January 2011 based on the earliest marketing authorization in Ireland. SPCs granted in Belgium, Italy and Luxembourg are also due to expire in January 2011. The granted SPC in Switzerland, however, is set to expire on 15th April 2011, as a result of the Swiss marketing approval date being over two years later, giving the maximum five year extension on the patent. Zeneca's zafirlukast is an oral leukotriene D4 antagonist indicated for the prophylaxis and treatment of asthma. It was first launched in Ireland in 1996 for the treatment of chronic asthma in children over 12 and was the first leukotriene antagonist to be marketed in the US. It is now approved in over 60 countries. In 2004, AstraZeneca announced that certain risks were associated with taking this drug and some patients were reported to have experienced severe liver problems, including hepatitis and liver failure. Consequently, it is perhaps not surprising that worldwide sales reported by AstraZeneca for 2005 totalled only \$72.0 million, representing a 39% year-on-year decrease on 2004.

In last week's Current Patents Gazette (CPG 0618) we reported on the patent extensions granted in the Japanese gazette published in April. In addition to these, five extension applications were reported on three patents. **Merck & Co** has requested two five year extensions on both JP2742409 and JP3058351 for **finasteride** used in treatment of male pattern hair loss (androgenetic alopecia). If granted, we estimate that JP2742409 will expire November 18, 2018, whilst JP3058351 will expire October 11, 2019. Marketed as **Propecia** for this indication, finasteride has also been developed and launched for the treatment of benign prostatic hyperplasia under the trade name **Proscar**. Sales of finasteride reported by

Merck in 2005 totalled \$1.033 billion with \$291.9 million reported for Propecia, and \$741.4 million for Proscar. Merck's Japanese affiliate, **Banyu Pharmaceutical**, holds development and marketing rights in that region and has signed a co-marketing agreement with **Yamanouchi**, now **Astellas**.

In the remaining application **Toyama Chemical Company** requests an extension of three years, four months and eighteen days on JP3346586 for an antibacterial ophthalmic formulation comprising **tosufloxacin**, borax and aluminum potassium sulphate. This appears to correspond to the TN-3262a ophthalmic formulation developed by Toyama and **Nidek** and marketed as **Ozex** or **Tosuflo Ophthalmic**. If granted this should expire January 2015.



First NCEs to emerge from Evotec's 11-beta-HSD 1 inhibitor program are sulfonamide derivatives

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UK initial ("A0") applications filed March 28th - April 5th 2006

Akubio Limited is seeking patent protection for apparatus for analyzing a fluid sample. This University of Cambridge 2001 spin-out has three previous published international applications, all in the diagnostics field, including the company's Rupture Events Scanning technology. The company is pioneering Resonant Acoustic Profiling (RAP) to characterise biomolecules immobilized on a quartz crystal surface. **GSK** is among the shareholders.

Ares Trading SA, the name used by **Serono** for patenting, has filed an application relating explicitly to fibronectin type III domain containing protein, having previously published WO2005014621 on purification of such non-immunoglobulin proteins. Through this earlier patenting there is a link with Dr Boris Schwartzburd of **InterPharma Laboratories** in Israel, and with the **Weizmann Institute**.

Biotica Technology Limited has filed a cluster of five obviously related applications relating to novel compounds and their production. The company's accumulated patenting to date, amounting to almost 20 international cases, is remarkable in the amount of external collaboration and conflict that it involves. In more than half of this patenting, dating from the mid-1990s, there is input from another institution, principally **Pfizer** and various universities, including **Cambridge**. However, the earliest case in which Biotica has an interest is **Stanford University's WO9508548**, filed jointly with the **John Innes Centre** and relating to recombinant production of polyketides. When this case was granted as **EP725778** in September 2002, it was formally opposed by Biotica, and there is now an interlocutory judgment, by coincidence dated May 11th 2006, following oral proceedings in April 2005. The commercial importance of this Stanford polyketide case, based on the work of **Dr Chaitan Khosla**, was highlighted when **Kosan Biosciences** licensed it.

Mark Hoser has submitted an application on isothermal nucleic acid signal generation. The inventor has previously disclosed other nucleic acid sequencing methods and kits in **WO2004074503**, which is his only other published patent application. However, **Mr Hoser** is a regular feature in the PDJ and is associated with **GeneForm Technologies**, based at the Kent Science Park in Sittingbourne.

Innova Biosciences, with currently only **WO2004027421** to their name, has filed an application on an improved enzyme assay. In February 2006, **Innova** launched their Lightning-Link™ conjugation technology. The technology, a novel conjugation method bypasses the usual desalting and dialysis steps encountered when using immunoassay techniques, such as western blotting and ELISA.

Medigen Biotechnology has filed on a method and apparatus for genotyping. The company currently has three PCT applications to their name, disclosing cancer treatments and diagnosis using genotyping. Medigen, a Taiwanese corporation, was formed to expand the investigation of **PI-88** in diseases with a high incidence in the Asian population.

Thrombosis Research Institute (TRI) has filed an application relating to an atheroma vaccine. This is likely to continue from **WO02063017** on integrin-binding chimeras (filed under the name of **Trigen Holdings AG**), and may originate from TRI's India site, which lists one of their goals as the development of a vaccine against atheroma for wide scale prevention.

University College Cardiff Consultants Limited is seeking protection for a transcutaneous cancer therapeutic and a further cancer therapeutic. Cancer researchers at the University have recently been recognised for their groundbreaking work into the spread of prostate cancer by the **American Society of Clinical Oncology**, the world's largest oncology society. The University has filed several cancer-related applications over the past few years, one of the most recent being **WO2006013336** (papillomavirus vaccine).

University of Edinburgh is seeking protection for a culture medium containing kinase inhibitors, and its uses. This may be related to the University's recent application **WO2005038010**, which provides an Id gene product useful for promoting self-renewal of pluripotent cells in culture, or to **WO2005014801**, relating to improvements in cell culture productivity involving CD14.

An application for an adjustable dose device by **Anthony C L Wass** has been filed. Wass has previously applied for protection of breath-actuated aerosol dispensers in **WO0029054**, assigned to Minnesota Mining and Manufacturing Co.

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