

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 0739

The UK Patents and Designs Journal (PDJ No 6175) this week reports details of two SPC applications on **EP0707476** filed by **Cerus** protecting its the **INTERCEPT Blood System** for platelets and plasma which uses **amotosalen HCl**. Also reported are applications by **GlaxoSmithKline (GSK)** covering **Avandamet (rosiglitazone + metformin)** on **EP0996444**, by **Celgene** on **EP0925294** for **Revlimid (lenalidomide)** and **Merck & Co's** application for an SPC on **EP1412357** covering **sitagliptin (Januvia)**. These were all reported in the Current Patents Gazette (0736) three weeks ago when details of the applications first appeared on the UKIPO web site.

As reported at that time, Merck's application should not result in a SPC being granted as EP1412357 does not expire until July 2022, whilst any granted SPC would expire March 2022 based on the maximum term of 15 years from the first EU Marketing Approval. It has been postulated that Merck realize this, but are filing the SPC application because of the new EU Pediatric Regulation which allows a 6 month extension to an SPC for appropriate pediatric studies. It appears that the extra 6 months can only be added to an SPC (or SPC application) and not to a patent as such. If the 6 month pediatric extension was granted, **EP1412357** would presumably expire September 2022, gaining Merck at least two extra months, exclusivity if the additional term is added to the end of 15 years from approval. Of course, if an SPC is created in such cases just for the pediatric exclusivity, the company could get the full 6 months expiring December 2020. It remains to be seen how individual patent offices will interpret the new regulation in cases such as this, and also if this actually is the reason that Merck has filed the SPC application.

Several new SPC applications were also noted on the UKIPO website this week. Amongst

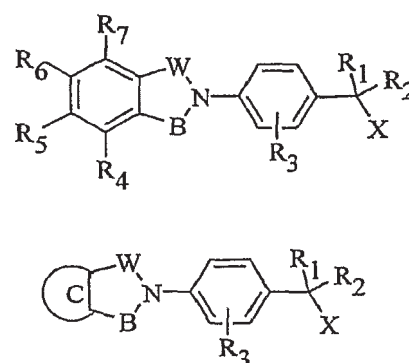
these, **(OSI) Prosidion** has filed an application for an SPC covering **sitagliptin**, using the same approval dates as Merck, on its **EP0896538**. If granted this should expire March 2022, 15 years from this approval date. **(OSI) Prosidion** has issued licenses for Probiodrug's DPP-IV patents, which they acquired from **Probiodrug**, to a number of companies, including Merck.

Two applications have also been filed based on the approval for GSK's **Daronix** vaccine product. These applications were both originally filed by the **Mount Sinai School of Medicine** in New York. However, the reverse genetics technology used in production of such vaccines was exclusively licensed to **Aviron**, which later became **Medimmune**. **EP0490972**, the earliest of these two patent was formally reassigned to Aviron and subsequently Medimmune, although Mount Sinai appears to have kept the ownership of the later EP1194580 and just licensed the technology rights. On September 24, 2007, four days after the SPC application was filed, Medimmune announced that it had licensed this technology to GSK, in particular for use in **H5N1 vaccines**. The company had previously licensed the technology to **Novartis**, amongst others, which has a vaccine for preventing H5N1 infection called **Focetria** that was approved in the EU May 2007. If granted, the application by Medimmune on EP0490972 would expire March 2012, whilst Mount Sinai's SPC would expire March 2022 if granted. GSK has developed Daronix, an inactivated whole virus alum-adsorbed vaccine for the prevention of infection with the H5N1 strain of avian influenza virus. Medimmune is now part of **AstraZeneca** which completed the acquisition in June 2007.

AstraZeneca have also been in the news this week with the announcement that it is acquiring **Verus Pharmaceuticals'** pediatric

asthma development programs. Included in the transaction are the North American rights to a **Captsiol®** enabled **budesonide** solution (controller medication), a proprietary short-acting beta agonist rescue medication (probably Verus' enhanced **Twinject® epinephrine** auto-injector which was made available May 2007) and a customized version of **eFlow®** (novel nebulizer delivery device) for use with both medications.

The University of Durham has filed a UK initial application for stem cell-derived neurotrophic factors. Possibly the work of Dr Christopher L Thompson, a senior lecturer in the University's School of Biological and Biomedical Sciences, who lists neurotrophic factors, particularly their role in the regulation of cerebellar GABA_A receptor expression, among his group's research interests. The University announced that Dr Thompson passed away on June 5, 2007.



First patenting to emerge from collaboration between Albany Mol Res, NIH and Science App Int is for SMN and EAAT2 expression enhancers

UK initial ("A0") applications filed August 13th – August 19th 2007

AstraZeneca has applied for UK patent protection (GB0716278) for **pyrazine derivatives**. Although the company has several dozen published patent applications relating to this class of heterocyclic compound, possibly the candidates receiving most attention are the series of **Factor Xa inhibitors** that includes **AZ-12300547**, for example. There is ample recent evidence, including several ACS Meeting presentations, that optimization is continuing in this series, and so it is possible that the new application belongs to this ongoing effort.

BioFocus DPI has filed a UK initial application (GB0716292) with claims to **imidazopyrazine compounds**. This almost certainly continues the series of imidazo[1,2-a]pyrazine JNK receptor modulators described in **WO2005085252**. In a November 2004 brochure the **Galapagos** subsidiary gave details of its discovery activity in this specialized MAP kinase field, naming **BF-67192** and **BF-67193** as particularly promising candidates at that time. The company's website lists JNK inhibitors among its "current opportunities", but otherwise there was little evidence of this work continuing until the present application was filed.

Botanix has filed a patent application (GB0716191) relating to the **deracemization of secondary alcohols**. Though the subject seems a little remote, this could be the same company that was named as applicant on **WO2007096673**, describing antifoam obtained from hop extract; otherwise this appears to be the first patenting from the company. The probability is that this is indeed the same Kent-based company, the linking observation being an application filed in March 2002, which was never published, concerned with isomerization of hop acids. Botanix serves the cosmetic and pharmaceutical industries, as well as the more obvious brewing industry, and offers a collaborative search service in the field of natural molecule synthesis using biocatalysts.

Circassia has patent applications (GB0715949 and GB0716224) relating to **peptides for vaccines**, and **peptides with improved solubility**. The earliest patenting in this name can be traced back to early 1996, although at first sight this seems not to have been truly international patenting until a further five years had passed. But in fact the earlier cases did appear as PCT applications, in the name of Imperial College London. **Circassia was established by Imperial Innovations in 1998** to exploit the work of **Professors Barry Kay** and **Mark Lache** on allergic rhinitis, from which has emerged the so called "PAD" (peptide antigen desensitization) technology. Despite this ten-year history of innovation, 2007 has seen the emergence of Circassia as a self-styled "newly-established, clinical-stage specialty biopharmaceutical company focused on developing medicines designed to control immune system responses", with a cash injection amounting to £6m and with **Sir Richard Sykes** appointed chairman in July. These patent filings serve to confirm that Circassia is entering a particularly active phase in its commercial growth.

Sisaf has filed a UK initial patent application (GB0716261) in order to protect a **topical delivery system**. The UK Intellectual Property Office inadvertently published this initial filing information in the name of a non-existent company, Scisaf Limited, but even the correct spelling yields virtually no information on the company, which presumably is involved in the formulation of drugs. Sisaf was formally incorporated at Companies House in October 2006, using an address in Thames Avenue, Reading, which at least until three years ago seems to have been a private residential address.

Summit has filed a UK initial application (GB0715790) claiming a drug combination for the treatment of sialorrhoea. Possibly related α_2 -adrenoceptor agonist/anti-muscarinic agent combinations claimed for potential in sialorrhoea (excessive salivation or drooling) in **WO2007093824**, assigned to **DanioLabs**. DanioLabs was acquired by Summit in March 2007. Summit is now developing **SMT-D001**, a lead compound from DanioLabs sialorrhoea program, specifically targeted at patients suffering with neurodegenerative diseases. The candidate is a small molecule drug currently in phase I trials, where initial positive results from have shown it to significantly suppress saliva production. A combined phase III clinical trial of this candidate in patients is now planned for the fourth quarter of 2007.

Vastox, now trading as **Summit**, has submitted a trio of UK initial applications (GB0715937, GB0715938 and GB0715939) outlining **methods of treating duchenne muscular dystrophy**. Summit has recently disclosed the use of a series of triazole derivatives as urotrophin modulators with potential for duchenne muscular dystrophy (DMD) in **WO2007091106** and **WO2007091107**. The company is developing a lead candidate, **SMT-C1100**, for this indication. One of the characteristics of DMD patients is the lack of dystrophin, a protein involved in maintaining the integrity and function of muscles, the absence of which leads to severe muscle wasting and is ultimately fatal for patients by the age of 25 years. SMT-C1100 acts by replacing dystrophin by increasing levels of the functionally similar urotrophin. Summit expects to submit an IND for SMT-C1100 by mid-2008 with first-in-man phase I trials following in the second half of 2008.

Applications can be expected to see publication in mid February 2009.