

CURRENT PATENTS GAZETTE



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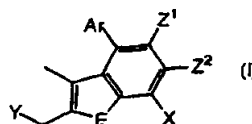
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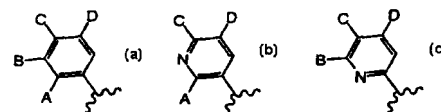
DRUG PATENTING IN CONTEXT

Current Patents *Gazette* is the most rapid competitive intelligence service covering innovation in the pharmaceutical industry. Patent applications published during the past week have been classified and analysed, in order to place the inventions in context. For the most crucial innovations, those involving new chemical compounds, additional information is given in the form of front page images. These can be enlarged to show details of chemical structures and inventor teams, for example. Applications filed jointly, representing collaborative research, are highlighted, as are sequences of inter-related documents.

NEW THIS WEEK



A new approach to from AHP to the treatment of insulin resistance and hyperglycemia with claims to novel phenyl substituted benzothiophenes, benzofurans, and indoles and 2,3,5-substituted biphenyls in this role.



In the example shown the substituent Ar is taken from (a), (b) or (c) shown right.

HIGHLIGHTS THIS WEEK

It is beyond belief that an application can proceed to grant with a title as bland as “Medicaments”, but that is exactly what has happened to a case which **GlaxoWellcome** filed at the UK Patent Office in September 1994. This invention, from the Company’s North Carolina research site, was passed to WIPO a year later, and published in April 1996 as **WO9609816**. It has now progressed to grant at the European Patent office, as **EP783302B**, with claims to **inhalable compositions of respiratory drugs with fluorocarbon propellants**, stabilized by the addition of fluorinated phospholipid surfactants. However, the subject goes back still further, since these surfactants are stated to be a selection from a much broader case, first published as **WO9015807**, in which the French technology transfer agency **ATTA** sought to protect fluorocarbon emulsions for use in a wide range of applications, including **artificial blood**.

It is interesting to note that **Biotech inventions**, now often the largest single section among the applications covered by Current Patents *Gazette*, are still relatively rare among European granted patents. This week only “**La Sapienza**” university in Rome has a pharmaceutical case classed as C12n, dealing with **cryptosporidium proteins (EP656063B)**; in C12p there is an **Amgen indole biosynthesis patent (EP665892B)**, and in C12q the **Cedars-Sinai Medical Center** has **EP531974B**, with claims to detection of **hepatitis C virus RNA**. In contrast, there are about 20 granted patents in the organic chemistry (C07) subclasses with relevance to pharmaceuticals, and these are generally much younger cases having taken only three of, at most, four years to achieve grant. These casual observations suggest that biotech applications are slower to be granted, on average, and possibly the proportion not entering the regional phase is higher than in classical chemistry.

A milestone for the publicly funded international **human genome consortium** has been confirmed this week with the publication of the **complete sequence of chromosome 22** (*Nature* 402, 489; 1999). The head of the international team that sequenced chromosome 22 is Ian Dunham, who works at the UK’s **Sanger Centre**; eight other laboratories were involved. The achievement was made possible by a ‘finishing’ step responsible for closing the gaps between ordered chunks of sequence in the human genome using a clone-by-clone sequencing strategy. Finishing is expected to take as much time and effort as the raw sequencing of the 3.5 billion base pairs of the human genome itself, with all the chromosomes completed by around 2003. It is expected that chromosomes 21 and 7 will be sequenced next, based on the amounts sequenced so far.

The **sequencing centers** which are part of the **Human Genome Project (HGP)** operate under the policy that all genomic DNA sequence information should be **released immediately and freely** in the public domain in order to encourage research and development and to maximise its benefit to society. It is now widely accepted that **patenting of raw human genomic DNA** sequence or partial or complete gene sequences of unknown function is **inappropriate**. The data release policy is supported by the strong argument that patenting might well discourage further research and development by others for fear that future inventions downstream of the gene sequence itself could not be adequately protected. Given that raw human genomic sequence does not fulfill the requirement of patentability under existing patent law (*ie* it must be novel, non-obvious and have demonstrable utility), arguably the best course of action is to release it freely. As a result the value of the sequence will increase as it accrues additional information from other public domain sources, leading to definition of novel gene structures, regulatory mechanisms, and functions. Free release of sequence data will also encourage exploitation by a maximum number of commercial and academic centers that are keen to compete in the development of new therapeutic agents.