

Pfizer natural products collaboration

Drug discovery from natural products is alive and well at Pfizer (Groton, Connecticut, USA). Pfizer recently announced collaborative research agreements with Drs R. Hill and F. Robb (University of Maryland Biotechnology Institute, Baltimore, MD, USA) and with Dr N. Wainwright (Marine Biology Laboratory, Woods Hole, MA, USA). This will be a collaborative attempt to discover new bioactive chemicals from marine microorganisms. Pfizer's chemists will use the novel chemicals as lead structures to generate new drug candidates. Dr Hill studies actinomycetes from Hawaiian coastal waters, and Dr Robb conducts research on hyperthermophiles – organisms living in the extremely hot water around deep hydrothermal vents. Dr Wainwright studies a highly diverse group of microorganisms from geographically distinct regions of the world. In return for extracts of marine cultures, Pfizer is providing research support to both institutions.

Dr M. Fletcher, Director of the University of Maryland Biotechnology Institute's Center of Marine Biotechnology, believes that the world's oceans offer enormous untapped potential for the discovery of novel bioactive molecules. "The oceans harbor more than 80% of all life on earth," asserted Dr Fletcher, "but less than 1% of marine species have been screened for organisms that contain or excrete novel compounds". Some of the first microbial isolates to be provided were a collection of unique actinomycetes collected by Dr Hill from near shore sediments in Hawaii. According to Dr Hill, "terrestrial actinomycetes are a rich source of compounds with pharmaceutical activity, and there is every reason to believe that the marine organisms will be as good or better". He says only 1% of the actinomycetes present in the water column are believed to have been isolated, and that the actinomycetes so far isolated from marine sediments constitute a small proportion of the total.

Dr Robb is preparing a collection of hyperthermophile cultures that were collected from Yellowstone National Park, the Kamchatka Peninsula of Russia, and Mono Lake in Northern California. Dr Wainwright is providing a diverse group of microorganisms, including some that were isolated from the surface of macroorganisms.

Pfizer will test extracts from the microbes in different high-throughput screening assays designed to identify new antibiotic, antiviral, antiinflammatory and anticancer agents. The results of the tests will be provided to the microbiologists at Maryland and Woods Hole. Dr Wainwright believes that the information provided by Pfizer will provide important clues to understanding the biology of the organisms. The new Pfizer program complements several other ongoing collaborative natural products projects, including collaborations with the New York Botanical Gardens, the Chinese Academy of Traditional Chinese Medicine in Shanghai and the Shanghai Institute of Pharmaceutical Industry, the Sichuan Industrial Institute of Antibiotics, and the Tottori Mycological Institute at the Kinoko Research Center Foundation in Japan.

Robert W. Wallace

People

The 'Discoverer's Award' honouring outstanding contributions by scientists in the pharmaceutical industry, presented annually by the Pharmaceutical Research and Manufacturers of America (PhRMA), has been awarded this year to Dr Fu-Kien Lin, Director of Biomedical Sciences at Amgen, Thousand Oaks, CA, USA. He led the team that discovered and developed epoetin alfa, the recombinant human erythropoietin. Dr Lin obtained his BS and MS degrees in Taiwan and completed a PhD in plant pathology at the University of Illinois in 1971. He has worked in nucleic acid biochemistry and genetic engineering at Louisiana State University and at the Medical University of South Carolina, and became one of Amgen's first members of staff in 1981.

A severe consequence of end-stage renal disease is anaemia caused by failure to produce enough erythropoietin. Dr Lin and his group cloned the gene that produces erythropoietin and used this to produce the recombinant form, which is marketed by Amgen as Epogen. The drug was granted FDA approval in 1989 and has been very effective in restoring the red cell count to nearly normal levels in anaemic patients with end-stage renal failure.

Dr Colin Pouton of the School of Pharmacy and Pharmacology, University of Bath, UK, was among the 1995 Pfizer Award winners for his work in designing oligomers and polymers to enhance the oral absorption of hydrophobic drugs. Much of Dr Pouton's research has involved the application of cell culture and DNA technology to pharmaceutical problems, particularly the delivery of peptide and protein drugs, oligonucleotides and

gene expression vectors to their appropriate sites of action. He was recently awarded a L106K MRC grant to develop selective agonists and antagonists for CNS melanocortin receptors.

His current work in gene delivery entails problems similar to those encountered with the delivery of peptides and proteins. However, receptor-mediated delivery is a much more realistic prospect because fewer molecules need to be delivered to a particular site. His group are particularly interested in tissue-specific promoters to obtain selective expression of genes for the treatment of melanoma.

A former President of the Committee for Proprietary Medicinal Products, Prof. Duilio Poggiolini, has just completed the manuscript of a book to be published soon. Provisionally entitled *Drug Policy in Italy from the 1970s to the 1990s*, it may not sound terribly exciting, but it should be