Other companies outlined their use of gene sequence information to identify new targets. Dr M. Vasseur (Genset, Paris, France) described how their company is building a database of the 5'-regulatory sequences of selected human genes. The database contains about 25,000 DNA sequences and is growing rapidly using the company's highly developed sequencing capabilities. Vasseur believes that the database will prove to be very useful in identifying nuclear factors that are appropriate for drug discovery. Unfortunately, some interesting speakers were unable to attend because of the snowstorm that paralyzed the east coast of the USA. Dr G.Z. Feuerstein (Smith-Kline Beecham, King of Prussia, PA, USA) was expected to explain how his company are using differential display RT-PCR technology to identify genes that are upregulated in stroke, restenosis and renal failure; and Dr P.J. Dillon was to report on how Human Genome Sciences Inc. (Rockville, MA, USA) have already identified more than 100 different therapeutic protein candidates from sequence information.

The final area of major significance at the symposium was the use of genetically engineered animals to identify novel functions and potential targets for biomolecules. Dr S. Lira (Bristol-Myers Squibb Pharmaceutical Institute, Princeton, NJ, USA) described how 'rational animal design' can be of enormous benefit in understanding the role of particular genes in the inflammatory response. Lira described studies in which the chemokine KC, which is a homologue of the cytokine IL-8, and monocyte chemoattractant protein-1 (MCP-1) were expressed *in vivo* in mice to determine their roles in inflammatory disease. When he 'designed' a mouse that expressed KC in the thymus, the gland was heavily infiltrated with neutrophils, but there was no inflammation. Lira concluded that IL-8 alone was insufficient to trigger an inflammatory response, although it is a chemotactic factor for neutrophils. When MCP-1, a chemokine with a previously unknown function *in vivo* was expressed in various tissues, it triggered an influx of monocytes and macrophages. According to Lira, rationally designed animals are highly useful in identifying the function of such molecules, to validate a particular molecule as a target and to serve as a tertiary animal model for drug development.

Dr M. Hanks (Procter & Gamble Pharmaceuticals, Ross, OH, USA) described new technologies that allow 'gene knock-in' or incorporation based on gene targeting in embryonic stem cells to replace one gene with another. This enables insertion of the gene into an appropriate locus with a promoter that will allow it to have the desired or physiological relevant distribution of expression. The usefulness of 'knock-in' technology is that the normal gene of an animal can now be replaced with the defective gene that causes an illness. Such animals will be invaluable as models for testing the usefulness of new therapeutics.

Robert W. Wallace

NIH patent profile

A recent report by the intellectual property consultant Peter Steele [*Exp. Opin. Ther. Patents* (1996) 6(2), 117–128] profiles National Institutes of Health (NIH) patenting activity between 1992 and 1995 and includes information on the most important collaborative projects between NIH, other academic centres and the pharmaceutical industry. The NIH is a collective name that applies to more than 20 specialized healthcare research institutions in the USA, and the development and licensing activities of these organizations are centralized in the Office of Technology Transfer.

The driving force behind the report is the remarkably high ranking of NIH in the pharmaceutical R&D league of products in development. NIH occupied sixth position at the end of 1994, with 54 products of its own and 37 in development and fell to ninth position at the end of 1995, but with 58 and 37 products, respectively. The only comparable organization in the top-fifty ranking is the British Technology Group, which now occupies 26th position. The report shows that patenting activity has focused, in particular, on the anticancer and anti-infective therapeutic categories. In each year from 1992 to 1995 inclusive, these have topped the table of NIH patent categories, with 106 (anti-infectives) and 90 (anticancer) patents out of a total of 406 patents published during this period. It is interesting to note a significant number of patents in the antiparasitic category; not a priority for most commercial organizations.

In the four years studied, NIH engaged in joint patenting activities with 25 companies, 12 universities and nine other institutions. Almost all work supporting these patents was performed in the USA, with external collaborations chiefly focusing on biotechnology.

Since 1989, an average of 147 NIH patents have been published each year, of which 83% are 'pharmaceutical'. Overall, and in line with general trends in the industry, pharmaceutical patenting activity has declined during the 1990s. In real terms, overall NIH patenting now stands at 83% of the 1989 level, and pharmaceutical patenting has declined even further in this period (69%).

The full article, *National Institutes of Health: analysis of patenting 1992–1995*, deals with the level of patenting, names used, subjects patented, inventors, patenting policy and includes a final summary. The information is well supported by tabular data. *Expert Opinion on Therapeutic Patents* is published by Ashley Publications, 1st Floor The Library, 1 Shepherds Hill, Highgate, London, UK N6 5QJ. tel: +44 181 347 5030, fax: +44 181 347 5040, www: http://biomednet.com/ashley/ashley.htm

David Hughes

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Society for Biomolecular Screening

The Society for Biomolecular Screening was formed some 18 months ago to facilitate communication between the scientists involved in the various disciplines associated with high-throughput screening (HTS), including microbiologists, cell biologists, molecular biologists, chemists, biochemists, physicists, automation specialists and data management and analysis specialists. The Society has initiated working groups in key areas of concern or controversy, such as: standards in automation and instrumentation, common structure databases, assay design and HTS implementation, and high-throughput aspects of toxicology – metabolism and disposition issues. In 1996, members will be kept up to date with key issues and activities through the Society's new official quarterly publication *Journal of Biomolecular Screening*. The journal will feature peer-reviewed articles together with other relevant information.

The *First Annual Conference* and associated workshops, held last November, in Philadelphia, PA, USA, aimed to offer attendees a glimpse of new HTS technologies, practical solutions to technical problems and a look at future prospects for biomolecular screening. The meeting attracted more than 450 scientists from the pharmaceutical and agrochemical industries. Session topics included programs and approaches, sample resources and lead generation, new detection methods, automation, data processing and analysis, target biology and genomics. Some 43 exhibitors attended, and 24 of these provided a tutorial session in advance of the main program. The second meeting will be held in Basel, Switzerland, 14–17 October 1996.

Details of the meeting and information about Society membership can be obtained from: The Society for Biomolecular Screening, Inc., 36 Tamarack Ave, Suite 348, Danbury, CT 06811, USA. tel: +1 203 743 1336, fax: +1 203 748 7557.

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