

BIONEWS

Latest News from Biotechnology

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HIGHLIGHTS

Scientists in Germany are preparing to breed 17 young zebrafish with genetic mutations for an international project to discover the function of human genes. The results are intended to help the pharmaceutical industry develop new medicines. The **Tuebingen 2000 Screen project** was announced at the European Life Sciences Conference. Artemis is collaborating on it with the Max Planck Institute for Developmental Biology, Tuebingen and other academic institutions in Germany, Britain and the US.
www.bioindustry.org

On 2nd April the **"European Association of Pharma Biotechnology"** (EAPB) was founded in Berlin. The Association will be seated at the Freie Universität Berlin. Its main aim is to promote Pharma-Biotechnology as an independent multidisciplinary science and especially the cooperation and scientific exchange between the various disciplines contributing to Pharma-Biotech. In this context the EAPB will participate in scientific congresses, i.e. the "Biotechnology 2000" taking place at the end of the year in Berlin.
www.eapb.de

With the information campaign **"Science live - Wissenschaft im Dialog: Perspektiven moderner Biotechnologie und Genetik"** the Federal Ministry for Education and Research intensifies the dialogue on modern methods of biotechnology and genetic engineering. According to minister Edelgard Bulmahn the campaign is designed to increase the populations knowledge on these topics which is essential for any evaluation of the consequences of scientific and technological innovations as biotechnology and genetic engineering. A central element of the campaign is the "Science live - Mobile" with a laboratory and an exhibition, that is to travel all over Germany during the next three years.
www.bmbf.de

Business / Markets

PathoGenesis Corp. announced formation of a Dutch company, **PathoGenesis B.V.**, which is headquartered in Rotterdam, the Netherlands. The company will market TOBI® (tobramycin solution for inhalation) in the Dutch market upon the drug's regulatory approval there.
www.pathogenesis.com

A further biotechnology start-up was founded on the campus of the Gesellschaft für Biotechnologische Forschung (GBF). **AMODIA Bioservice GmbH** offers services in the field of biotechnological applications and specializes in rapid test methods for the detection of microorganisms and DNA sequencing services. With the applied testing methods microorganisms in medical samples, food or in the environment can be detected within 24 hours time.
www.amodia.de

Jordan's Al-Kindi Pharmaceutical Industries entered an agreement to market Bio-Technology General Corp. pharmaceutical products **throughout the Arab world.** The products include Bio-Hep-B recombinant hepatitis-B vaccine, Bio-Tropin recombinant human growth hormone for the treatment of short stature in children, and Oxandrin for the treatment of involuntary weight loss.
www.Al-Kindi.com

Bayer continued to extend its **activities in Japan.** The construction of a new building for chemical research has begun in the Pharma Research Center of Kansai City. Until May 2001 a 3.700 sqm laboratory will be build. These new laboratories are important for the extension of Bayer's research in Japan. The company's worldwide asthma research is already based at the Research Center Kyoto.
www.baynews.bayer.de

Xechem International, Inc. announced a joint venture agreement with J & M Consultants to establish **Xechem Pharmaceutical China Ltd.** with offices in Hong Kong and Beijing. The purpose of establishing Xechem China is to carry on the business of, interaliance, manufacturing, marketing and distributing pharmaceutical and nutraceutical products. Xechem China will also carry out research, development, clinical studies and production of new drugs based on Xechem technology on traditional Chinese medicine

and other disciplines, provide consulting services for drug development and set up a certified laboratory in P.R. China to screen, verify and certify pharmaceutical products for the public.
www.xechem.com

AuTologous Wound Therapy, Inc. has changed its name. The company filed an amendment of its certificate of in Corp. with the Delaware Secretary of State, adopting the new name of **"Cytomedix, Inc."**.
www.sec.gov

The boards of directors of Biotechna Europe Ltd., Plant Research International, and Biotechna Environmental Corp. are announced that they have signed a Heads of Agreement to **form a new company**, with the aim to rollout a number of their proprietary technologies in The Netherlands. The companies have worked together in strengthening their relationship and developing their technologies and to commercialise BE2000s novel process, designated Photosynthetic Purification™, an innovative biological technology which grows algae and photosynthetic bacteria from the nutrients in animal waste.
www.plant.wag-ur.nl

GenSci Regeneration Sciences, has created a new subsidiary, **GenSci OCF Inc.**, through the acquisition of a majority stake in a privately held oral cranio-facial company located in Montreal. GenSci OCF Inc. is a biosurgical firm dedicated to the oral cranio-facial market, which represents 16% of the total bone grafting market.
www.gensci.bc.ca

Business/Markets	1
Research/Development	7
Applications/Products	8
Bioinformatics	10
Patents	10
Courtroom	11
Law/Politics	11
European Affairs	12
Environment/Safety	12
Education/Career	12
Funding	12
Organisations/Communities	13
People	13
Events	13



ACHEMA - A SYNONYM FOR SUCCESS

The ACHEMA 26. Exhibition-Congress, International Meeting on Chemical Engineering, Environmental

Protection and Biotechnology, 22. - 27. May 2000 Frankfurt am Main, Germany.

With almost 4,000 exhibitors from all the continents of the world and a quarter of a million visitors from more than 100 countries, ACHEMA will be setting the standard again in the year 2000 and pointing the way for the future in the process industries. We would like to invite all professionals from the fields of chemical engineering, environmental protection and biotechnology to join the ACHEMA 2000 from 22-27 May in Frankfurt am Main.

Only a few of a huge variety to inform is given below:

Synthesis, Screening and Sequencing 1st International Symposium at ACHEMA 2000

Research in chemistry and molecular biology has recently gained momentum. This is apparent in the dramatically increased capacity of current methods applied in synthesis and screening. Within a few years important breakthroughs have been achieved on frontiers of research. The **1st Symposium on Synthesis, Screening and Sequencing at ACHEMA 2000** acknowledges the interconnection of these technological developments. It is a unique opportunity to become acquainted with the vast scope of this ongoing revolution – from the development of materials and catalysts to molecular biology and pharmaceutical research. The lectures will focus on high-throughput technologies and on automation and miniaturisation for synthesis and screening.

Below some highlights according to biotech exhibitors participating the Achema 2000.

Biologists around the world are only months away from "cracking" the human genome, the genetic code that determines most, if not all, human characteristics. A "rough draft" of the genome is expected shortly, with a polished version within three years. When this monumental project began in 1990 at nonprofit research laboratories - at the National Institutes of Health in the U.S., and global research institutes including the Max Planck Institute in Berlin and the Cancer Research Center in Heidelberg - it was expected to take another 15 to 20 years to complete. Even at the last ACHEMA trade fair, completion was not expected until 2005. Automated gene sequencing, expression and discovery systems, genetic bioarrays, and databases

have dramatically cut the time needed for genetic decoding, making it far less tedious and allowing research to accelerate at breakneck speed. At the same time, new companies — some less than one year old — centered mainly in California and Maryland in the U.S.— are working on human and other genomic projects. Their goal: even faster results, accessible, in some cases, via portals on the Internet, to the world's pharmaceutical and academic laboratories. Until fairly recently, only simple genomes of viruses and bacteria had been decoded. Now, genomes of organisms ranging from baker's yeast, *Saccharomyces cerevisiae*, to roundworm *Acanorhabditis elegans* and the fruit fly, *Drosophila melanogaster*, are complete, or close to it.

Genomics fights diseases

Developments are proceeding rapidly. Last September, Iceland based Decode Genet-



ics discovered the gene that causes preeclampsia, a disease of pregnancy. Subsequently, other breakthroughs were made: scientists in Australia and at Stanford University, have used genomics to identify genes that regulate the human immune system; researchers at Millennium Pharmaceuticals Inc. and Wyeth Ayerst Research used genomics to identify "potassium channel interacting proteins" that control the electrical signals of the brain; researchers at the University of Pittsburgh showed how a defective gene leads to certain forms of hereditary cancer; Curagen received U.S. patents 5,977,311 and 5,986,055 for discoveries mapping the protein interactions implicated in cancer cell proliferation.

Supercrops by Genomics

While it promises to usher in powerful new medical treatments, genomics is also allowing for the development of new "supercrops," with superior nutritional value and insect resistance. Last summer, scientists at the University of Freiburg and

the Swiss Federal Institute of Technology developed a genetically modified rice, using a gene from a French bean to boost iron content, two genes from a daffodil and another from a bacterium to produce beta carotene, a source of vitamin A, and another gene that produces an enzyme to counteract phytic acid, which prevents the body's absorption of iron. The new rice would allow people who subsist mainly on rice to get nutrients normally found in other foods. Research funded by The Rockefeller Foundation in China has boosted rice yields by 15 to 25%, while another project in Mexico has added genes to rice and corn to help the plants tolerate high concentrations of aluminum, and an Indian research project has added genes to help rice plants tolerate long periods under water, a problem in parts of Asia.

Information technology and bioarrays speed up genomics research

Bioarrays are another key genomics research tool. The arrays grew out of the concept of "sequencing by hybridization," first developed in the 1980s by scientists from Yugoslavia, the U.K., and Russia, as an alternative to sequencing by gel electrophoresis. Affymetrix, Inc. (Santa Clara, Calif.) commercialized the concept and now leads the market with its GeneChip technology, disposable DNA arrays containing gene sequences, reagents, a scanner and other instruments on a silicon chip, for analyzing human, murine, rat and yeast genomic data. Demand

for such systems is growing rapidly. According to the U.K. based consulting firm, Frost & Sullivan, global demand for DNA microarray systems accounted for \$130 million last year and will grow to \$400 million by 2003. Affymetrix recently introduced a new human cancer array that enables over 1,700 genes related to cancer to be measured simultaneously. The company also introduced a Yeast Genome array that puts the entire yeast genome on a single chip, and offers a range of new SNP mapping arrays, screening services, diagnostic software, and therapies. Other leaders in the automated genomics race include Millennium Pharmaceuticals (Cambridge, Mass.), Human Genomic Sciences, Inc., Incyte Pharmaceuticals (Palo Alto, Calif.), Rosetta Inpharmatics, Inc. (Kirkland, Wash.) and Curagen (New Haven, Conn.), which, last February, completed the first mapping of the yeast and fruit fly genomes.

Source: www.achema.de

Company Index

Abbott Laboratories..... 4,11	Chembridge 4	Immunicon 5	Quest Diagnostics 6
ACLARA BioSciences 11	Chromagen 4	ImuMed International 6	Raven Biotechnologies 6
Affymetrix 11	Cistron Biotechnology 6	InnaPhase 10	ReGen Biologics 9
Agen Biomedical..... 11	Clontech 7	John Innes Centre 13	Roche 4,9
Al-Kindi Pharmaceutical .. 1	Commonwealth Biotech. ... 3	Kirin Brewery 10	Sangamo BioSciences 6
Allergy Immuno Tech. 3	Compugen 10	Kosan Biosciences..... 13	SangStat..... 11
AltaRex 10,11	Corixa 11	Lexicon Genetics 10	Sangui Biotech 7
Alteon 3	CuraGen 4	Life Technologies 4	Sanofi-Synthelabo 5
American Home Prod. ... 10,12	Cytoclonal 7,11	Lifesource Naturals 10	Schering 6,10
Amgen 11	Cytogen 10	LION Bioscience 10	Scotia Pharmaceuticals .. 6
AOP Orphan Pharm. 7	Cytomedix 1,1	Martek Biosciences 4	Scottish Crop Res. Inst. 13
Aradigm 4	Demegen 11	Maxygen 6	Scriptgen 10
Arena Pharmaceuticals ... 4	DepoMed 12	Medarex 6	Sequenom 5,6
Artemis 1	DevCo Pharm. 5	Merck 5,11	SIGA Technologies 6
Athersys 4	Digene 12	Micromet GmbH 4	Simulations Plus 10
Atugen 4	DuPont Pharmaceuticals 4	Molecular Devices 9	Sindus 12
Aurora Biosciences 4	Dynavax Technologies ... 6	Molecular Innovations 6	SONUS Pharmaceuticals . 9
Aventis 12	EDEN Bioscience 9	Monsanto 7	St. Jude Children's
AVI BioPharma 4,10	Eli Lilly 4	Nanogen 11	Research Hospital 9
Aviron 13	Enzymatic Therapy 10	NeoPharm 4	Structural Bioinformatics ... 6
AxCel Biosciences..... 10	EVOTEC BioSystems 3,5	NeoRx 4	Sulzer Medica 9
Axys Pharmaceuticals 9	EXACT Laboratories 10	New England Biolabs 6	Sun Pharmaceutical 7
Bayer 1,5,10	Exelixis 7	Novartis 7,11	Synergy Pharmaceuticals 7
BC International 12	Exiqon 5	Novopharm 7	t.Breeders 7
Biacore International 4	Gedeon Richter 11	Institut Pasteur 9	Takeda Chemical..... 10
Bio-Technology General .. 1	Gemini Genomics 5	Organon 4	Techniclone 6
Biohybrid 4	Gene Logic 5	Oxford Gene Technology 11	Teva Pharmaceutical 7
Biolatina 12	Gene-Cell 4	Palatin Technologies 10	Therakos 5
Biomatrix 6	Genelabs Technologies ... 3	Paradigm Genetics 5	Tissueinformatics 10
BioNet Technologies 13	Genentech 6,8,12	Pasteur Institute 7	TRANSGENE 10
BioNumerik Pharm. 10	Genetronics Biomedical... 9	PathoGenesis 1	Transkaryotic Therapies .. 11
Biopharm 5	Genome Therapeutics ... 10	Paul-Ehrlich-Institute 9	Tularik 4,8
Biopool International ... 6,11	GenSci 1	Pharmacia & Upjohn 4,7	United Therapeutics ... San
Biosintetica 12	GenServe Laboratories .. 12	Pioneer Companies 4	UroGen 13
Biotechna Europe 1	Genset 5	PROCREA BioSciences 8	Vertex Pharmaceuticals .. 6
Boehringer Ingelheim 4	Genzyme 6,6	ProdiGene 9	ViaCell 7
British Biotech 5	GBF 1	ProFound Pharma 6	Viacord 7
Caliper Tech. 10,11	IDEXX Laboratories 3	Proligo 5	Xechem International 1
Carlisle Companies 6,6	Idun Pharmaceuticals..... 5	Protein Design Labs 5	Xtrana 6
Celera Genomics 10	ImClone Systems 3,13	Quantum Biotechnologies 7	
Celltech Group 6	Immune Technologies..... 13	Quantum Dot 6	

Business Reports

Allergy Immuno Technologies, Inc., announced net sales of \$60,531 for the nine months ended February 29, 2000 compared to net sales of \$52,198 for the nine months ended February 28, 1999. AIT announced a loss of \$139,869, for the nine months ended February 29, 2000 compared to a loss of \$58,050 for the comparable period ended February 28, 1999.
www.allergyimmuno.com

Alteon Inc. announced total revenues of \$1,435,000 and a net loss applicable to common stockholders of \$13,639,000, for the twelve months ended December 31, 1999. This compares to total revenues of \$1,321,000 and a net loss applicable to common stockholders of \$28,553,000, for the same period in 1998. For the three months ended December 31, 1999, Alteon had total revenues of \$559,000 and a net loss applicable to common stockholders of \$159,000, which compares to total revenues of \$377,000 and a net loss applicable to common stockholders of \$8,174,000, for the same period in 1998.
www.Alteon.com

Commonwealth Biotechnologies, Inc., reported that it achieved record revenues during the first quarter of 2000. The company said that its sales were up from \$512,668 during the first quarter of 1999 to \$1,185,881 for the first quarter of 2000. Net income was \$76,676 compared to a net loss during the same period last year of \$547,379. This follows a 60% growth in revenue for all of 1999 compared to 1998, where revenues reached \$2,565,132 and \$1,604,267, respectively. Both the percentage of revenue growth and total revenues are records for the company.
www.cbi-biotech.com

Discovery Laboratories, Inc. announced its results for the year ended December 31. For the 12 months ended December 31, 1999, consolidated net loss was approximately \$4.96 million, versus approximately \$15.62 million for 1998.
www.discoverylabs.com

EVOTEC BioSystems AG showed a robust rate of growth in fiscal 1999,. Revenue increased by 34% to DM 19.1 million. Revenue of DM 9.8 million was realized in the fourth quarter of 1999 alone. This represents an in-

crease of 42 percent compared to the same quarter in the previous year. Revenue projections for 1999 were fully met.
www.evotec.com

Genelabs Technologies, Inc. reported financial results for the fourth quarter and year ended December 31, 1999. For the year, Genelabs reported 1999 revenues of \$8.0 million, compared to \$7.8 million for 1998. The company reported a net loss of \$12.8 million for the year ended December 31, 1999 compared with \$6.6 million for 1998. The loss from continuing operations was \$10.1 million, for the year ended December 31, 1999, compared to \$8.1 million, for 1998. In 1998.
www.genelabs.com

IDEXX Laboratories, Inc. reported net income of \$8,034,000, for the quarter ended March 31, 2000, compared to net income of \$7,281,000, for the same period in the prior year. Revenues for the first quarter increased to \$90,878,000 from \$89,648,000 for the first quarter of 1999.
www.idexx.com

ImClone Systems Inc. announced its results for the fourth quarter and year ended December 31, 1999. For the year ended December 31,

1999, the Company reported revenues of \$2,143,000 and a net loss to common stockholders of \$38,324,000. These results compare with revenues of \$4,193,000 and a net loss to common stockholders of \$25,050,000, for fiscal 1998. Operating expenses for 1999 were \$39,381,000 as compared with \$28,194,000 for fiscal 1998.

www.imclone.com

Life Technologies, Inc. announced that revenues and net income reached record levels in the first quarter of 2000. Revenues were \$109.3 million in the first quarter of 2000, compared with revenues of \$100.0 million in the first quarter of 1999. Net income of \$11.0 million in the first quarter of 2000 represented an increase over net income of \$10.5 million reported in the comparable period of 1999.

www.lifetech.com

NeoPharm, Inc. reported fourth-quarter and annual 1999 results for the company. For the fourth quarter 1999, the company reported a loss of \$530,555, compared to a profit of \$203,072, during the fourth quarter 1998. For the full year, the company reported a profit \$3,754,476, compared to a loss of \$1,573,723, for the full year of 1998. The company had approximately \$25 million of cash on hand at the end of 1999.

www.NeoPharm.com

NeoRx Corp. reported a net loss of \$2.4 million for the first quarter of 2000, compared to a net loss of \$2.7 million for the quarter ended March 31, 1999. Revenues for the first quarter 2000 were \$0.1 million compared to \$0.4 million of revenue in the first quarter of 1999.

www.neorx.com

Pioneer Companies, Inc. reported revenues for the first quarter of 2000 of \$84.3 million in comparison with \$70.9 million during the first quarter of 1999. The Company incurred a net loss for the first quarter of 2000 of \$9.6 million compared with a net loss of \$6.0 million during the first quarter of 1999. Results for the 1999 first quarter included a \$12.5 million pre-tax gain on the reduction of the accrual for the Company's retiree medical benefits.

www.piona.com

Roche Group recorded another substantial increase in sales over the previous-year period, with consolidated sales revenues totalling 7.5 billion Swiss francs for the first quarter of 2000. Compared with the first quarter of 1999, sales were up 17 percent in Swiss francs and 7 percent in local currencies. Sales by the Pharmaceuticals Division continued to climb, advancing 700 million to 4.6 billion Swiss francs. Roche Diagnostics once again grew significantly faster than the global market.

www.roche.com

Cooperations

Abbott Laboratories and **Martek Biosciences Corp.** announced that the companies have signed a non-exclusive license agreement for Martek's technology relating to the use of long-chain polyunsaturated fatty acids in infant formulas. The agreement provides for initial cash payments

and would give Martek an ongoing royalty upon Abbott's introduction of products using Martek's technology for docosahexaenoic acid and arachidonic acid.

www.abbott.com

Aradigm Corp. and the University of California at San Francisco signed a development agreement to begin a new series of experiments evaluating the applicability of Aradigm's AERx[®] Pulmonary Drug Delivery System for delivering nonviral gene vectors by inhalation. Aradigm has been conducting research in this area since 1998 through an earlier collaboration with Harvard University. Both collaborations are being funded by a grant from the National Institutes of Health.

www.aradigm.com

Arena Pharmaceuticals, Inc., and Eli Lilly announced that they have entered into an agreement to develop a number of orphan G-protein coupled receptors as drug screening targets, utilizing Arena's proprietary CART[™] technology. The collaboration will initially focus on central-nervous-system, endo-crinology and cardiovascular targets with the option to increase the number of targets and expand into other therapeutic classes.

www.lilly.com

Athersys, Inc. and Gene-Cell, Inc. announced the formation of a collaboration to deliver Athersys' Synthetic Microchromosome vectors into human stem cells using Gene-Cell's automated microinjection technology. A major focus of this collaboration is to further develop and optimize proprietary systems for the delivery of SMCs into human stem cells and other more differentiated cell types.

www.Athersys.com

Atugen AG announced that it has signed a research collaboration agreement with Boehringer Ingelheim to exploit Atugen's rapid, high quality gene target validation services. Under the agreement Boehringer Ingelheim will provide Atugen with gene target sequences and specific cell lines. Atugen is to provide delivery optimisation to the cell lines and develop GeneBloc reagents to inhibit the expression of the target genes.

www.atugen.com

Aurora Biosciences Corp. and Organon announced they entered into a three-year agreement to develop high-throughput drug discovery screening assays for several key molecular target classes, including orphan G protein-coupled receptors, ion channels, and enzymes. Organon will also gain access to aspects of Aurora's ion channel technology platform, including its Voltage Ion Probe Reader.

www.aurorabio.com

AVI BioPharma, Inc. and SuperGen, Inc. released terms for the U.S. sales and marketing rights to AVI's therapeutic cancer vaccine, Avicine. The agreement includes an up-front equity investment by SuperGen in AVI of \$20 million, a combination of cash and SuperGen stock. This is in addition to a previous \$5-million investment in AVI by SuperGen at the close of 1999. Under the terms of the agreement, additional equity investments and cash

milestone payments are contemplated based upon the commercial success of the product, which would make the total value of the pact in excess of \$100 million.

www.antivirals.com

Biacore International AB and Pharmacia Corp., entered into a collaborative agreement with whereby the latter will evaluate Biacore's new high-performance system in analyzing the serum protein binding of drug candidates. This collaboration marks the third in a series of deals secured by Biacore in the last four months that aim to fully optimize its novel analytical systems for specific late-stage drug discovery applications.

www.biacore.com

BioChem Pharma Inc. and Technology Partnerships Canada announced that they have concluded a partnership agreement. Under the agreement, the federal government has agreed to invest up to CAN\$80 million in the development of BioChem's recombinant-protein vaccines over a six-year period. If this research and development program is successful, BioChem estimates total expenditures of up to CAN\$600 million, with BioChem investing the balance of funds required. This project is expected to generate approximately 450 jobs in Canada.

www.biochempharma.com

Biohybrid, Inc., announced that it has received another milestone payment from Micromet GmbH, for the exclusive general license to Biohybrid's Activating Hybrid Antibody. The agreement will bring in up-front and royalty payments of \$3 million. Biohybrid's product platform of hybrid antibodies and genetically engineered vectors are agents for the treatment of graft rejection, graft-versus-host disease, and autoimmune disorders. Its products selectively suppress a subset of white blood cells that are programmed to destroy the graft.

www.Biohybrid.com

Chembridge has entered into a three-year agreement to provide Tularik Inc. access to ChemBridge's PHARMACore[™] combinatorial lead discovery library. Under the terms of this agreement the library will be provided on a non-exclusive basis. The PHARMACore[™] library represents the most advanced new generation of combinatorial libraries available.

www.chembridge.com

Chromagen, Inc. and DuPont Pharmaceuticals have entered into the second extension of an assay development and drug screening agreement begun in May of 1998. Under the extended agreement, Chromagen will develop biological assays and screen chemical compounds generated by DuPont Pharmaceuticals Research Laboratories, Inc. in their internal drug discovery program. Financial terms were not disclosed.

www.chromagen.com

CuraGen Corp. and COR Therapeutics, Inc. expanded their collaboration to apply CuraGen's functional genomics technologies to cardiovascular drug discovery. Specifically, the companies

Address Book

The Genome Database	http://gdbwww.gdb.org/
The DNA Learning Center web page	http://vector.cshl.org/
Primer on Molecular Genetics	http://www.bis.med.jhmi.edu/Dan/DOE/intro.html
Cell and Molecular Biology Online	http://www.cellbio.com/
Bioinformatics: Biology and Molecular Biology Resources	http://research.nwfsc.noaa.gov/bioinformatics.html
The Visible Human Project	http://www.nlm.nih.gov/research/visible/visible_human.html
Bugs in the News What the Heck is.....????	http://falcon.cc.ukans.edu/~jbrown/whatheck.html
Froggy Page	http://frog.simplenet.com/froggy/
The Heart: An Online Exploration	http://sln.fi.edu/biosci/heart.html
MendelWeb Homepage	http://www.netspace.org/MendelWeb/
Molecular Biology Protocols	http://research.nwfsc.noaa.gov/protocols.html
IMB Jena Image Library of Biological Macromolecules	http://www.imb-jena.de/IMAGE.html

will utilize CuraGen's PathCalling™ proteomics technology and bioinformatics systems to create an annotated database of protein-protein interactions derived from cardiovascular endothelial cells. Other terms of the collaboration were not disclosed.
www.curagen.com

DevCo Pharmaceuticals Ltd. and **British Biotech** signed an agreement to develop the PAF antagonist, lexipafant, for the prophylaxis of certain serious neurological and renal complications experienced by patients undergoing cardiac surgery. The terms of the agreement grant DevCo exclusive rights to develop, manufacture and sell lexipafant for the treatment of human disease other than in the fields of oncology and ophthalmology. British Biotech will supply DevCo with technical information on lexipafant and previously manufactured compound for development. DevCo will undertake all the development and, if lexipafant is brought to market, pay British Biotech a royalty on sales.
www.DevCo.com

EVOTEC BioSystems AG announced delivery of assay development stations to Pfizer's sites at Sandwich, England, and Groton, Connecticut, USA, in accordance with their partnership agreement signed in June 1999. This equipment successfully passed comprehensive factory- and site-acceptance testing. It represents EVOTEC's first technology transfer to the United States.
www.evotec.com

Gemini Genomics plc and **Sequenom Inc.** entered into a collaboration with the intention of determining the medical relevance of human genetic variations (SNPs) being re-

leased into the public domain. The collaboration combines Gemini's diverse human population resources and informatics together with Sequenom's DNA genotyping capability, with the aim of identifying associations between SNPs and common diseases. Utilizing their MassARRAY genotyping technology, Sequenom will source some 240,000 SNPs from public domain efforts, check their validity and develop the systems to rapidly determine their frequency in individuals with disease.
www.sequenom.com

Gene Logic Inc. sold a module of its GeneExpress database to NeuralStem BioPharmaceuticals Ltd. that features gene information from healthy and diseased tissues. NeuralStem will use the database in its drug development programs. Gene Logic will gain access to NeuralStem's repository of stem cells. Financial terms were not disclosed.
www.genelogic.com

Genset and **Sanofi-Synthelabo** signed an agreement to pursue a pharmacogenomics collaboration aimed at lead selection and optimization for an undisclosed CNS disease. The pharmacogenomics collaboration undertaken by Genset and Sanofi-Synthelabo has as its initial objective to comprehensively discover and analyze significant polymorphisms in a large number of different biological targets for drug development. Sanofi-Synthelabo is developing several compounds that interact with these targets.
www.genxy.com

Idun Pharmaceuticals and **The University of Texas** Southwestern Medical Center at Dallas entered into a licensing agreement. This agreement gives Idun the exclusive rights to the Apaf-1 gene,

which is known to be essential to the initiation of apoptosis.
www.idun.com

Immunicon Corp. and **Therakos, Inc** entered into a research agreement in the field of extracorporeal photoimmune therapy, also known as photopheresis therapy. The intent of the research is to explore applications of Immunicon's magnetic separation technology with Therakos' cell therapy technology. Extracorporeal photoimmune therapy involves the use of ultraviolet or visible light and compounds that are activated by such light to alter the function of blood cells or blood components. The technology has application in several fields, including cancer and infectious diseases.
www.immunicon.com

Microbics Inc. and **Environmental Remediation, Inc.** announced that they have signed a joint venture term sheet agreement to establish and operate a joint venture which will engage in bioremediating contaminated properties, and operating soil recycling centers in one or more major U.S. cities. U.S. Microbics will supply the bioremediation technology and ERI will act as the contractor for bioremediation projects or as the operator for the soil recycling centers.
www.individual.com

Orquest, Inc. and **Biopharm GmbH** entered into an exclusive agreement under which they will apply the latest advances in biotechnology and matrix chemistry to develop proprietary products for spine, fracture, dental and cartilage repair. The two companies will pool their respective proprietary technologies. Biopharm will contribute MP52, a novel recombinant growth factor and member of the bone morphogenic protein family, while Orquest will contribute its unique proprietary materials and expertise in developing and assembling combinations of growth factors and matrices.
www.helixbio.com

Paradigm Genetics, Inc. and **Bayer AG** announced that it has achieved another milestone in connection with its collaboration agreement in the search for novel screening targets that may lead to the development of new herbicides. Additional assays on target genes discovered in Paradigm's Gene Function Factory™ are in development.
www.baynews.bayer.de

Proligo LLC and **Exiqon AS** agreed to a partnership for the commercialization of Exiqon's LNA technology. Proligo will have the right to manufacture and sell LNA oligonucleotides and monomers to third parties worldwide, while Exiqon will retain the right to develop and grant licenses for biochemical, diagnostic, and therapeutic products containing LNA nucleic acid compositions.
www.proligo.com

Protein Design Labs, Inc. and **Merck KGaA** announced that they have signed a patent license agreement granting Merck a non-exclusive worldwide license under PDL's antibody humanization patents for antibodies to the epidermal growth factor receptor, a cancer target. Merck will pay PDL an up-front fee, annual maintenance fees and royalties on product sales,

if any. Specific financial terms were not disclosed, but are generally consistent with the terms of PDL's other patent license agreements.

www.pdl.com

Quantum Dot Corp. announced that Genentech, Inc has agreed to evaluate Quantum Dot (Qdot™) Nanocrystal technology for use in Genentech's biological research assays. Through its participation in the Technology Access Program, Genentech will receive a wide variety of types and colors of nanocrystals and nanocrystal conjugates for multiplexed detection. Genentech will explore the utility of these products as a tool in an array of cellular and molecular assays. Qdot™

www.qdots.com

Quest Diagnostics Inc. and Structural Bioinformatics Inc. achieved several milestones in their structural pharmacogenomics collaboration, including new work on HIV-1 Integrase. By incorporating protein structural knowledge at the drug discovery and design stage, synthesis of drug candidates can be focused toward compounds that will "satisfy" the binding sites of the largest fraction of structural polymorphisms found in the receptor, and thus be likely to have efficacy in the largest possible fraction of the patient population.

www.genengnews.com

Raven Biotechnologies, Inc. and Medarex, Inc. announced the formation of a collaboration aimed at identifying therapeutic antibodies with the potential to treat a variety of diseases including cancer. Raven will use Medarex's HuMAB-Mouse™ technology to develop fully human antibodies against novel antigens discovered by Raven using their integrated platform of comprehensive cell surface mapping. The agreement allows Raven to access the HuMAB-Mouse technology for multiple targets. Under the terms of the agreement, Medarex could receive research payments, license fees and milestone payments as well as royalties on therapeutic product sales.

www.ravenbio.com

Sangamo BioSciences, Inc. and Bristol-Myers Squibb Pharmaceutical Research Institute signed a collaborative research agreement. Sangamo will provide specific Universal GeneTools™ to Bristol-Myers Squibb for use in their internal research and validation programs.

www.sangamo.com

Schering AG and CEA Industries have finalized their agreement in which Schering S.A., the French subsidiary of Schering AG, takes over a majority share of 60% in the capital of ORIS/CIS bio. Through its subsidiary CIS bio, this company specialises in the biomedical field, more particularly, in the radioactive marking of molecules and the production of radiopharmaceuticals for medical use in the fields of in vivo diagnosis and treatment (nuclear medicine) as well as in vitro diagnosis.

www.schering.de

SEQUENOM, Inc. and Methexis Genomics N.V announced that they have reached a collaborative and a commercial agreement. Under these agreements, the companies intend to use their combined

technologies to quickly and accurately discover and assess genetic variations, including single nucleotide polymorphisms, in targeted regions of human and plant genomes and to create and sell commercial products and services utilizing their combined technologies.

www.sequenom.com

SIGA Technologies, Inc. and New England Biolabs announced a research collaboration focused on the development of technology for a schistosomiasis vaccine. The collaboration will combine SIGA's proprietary vaccine delivery technology with schistosomiasis antigens identified by NEB scientists. The research will be carried out at SIGA Research Labs, the biotechnology division of SIGA Technologies, and at New England Biolabs.

www.Siga.com

Techniclone Corp. and Scotia Pharmaceuticals Ltd. announced a licensing agreement for a segment of Techniclones Vascular Targeting Agent technology, specifically related to applications of Photodynamic Therapy agents. The terms of the deal have not been disclosed but involve a licensing fee, milestone payments and a royalty upon commercialization of a product. Scotia has signed a binding letter of intent with Techniclone for the worldwide exclusive rights to this area.

www.techniclone.com

Triangle Pharmaceuticals, Inc. and Dynavax Technologies Corp. have entered into a collaborative agreement to develop immunostimulatory pharmaceutical candidates intended to be used to modulate the human immune response for the treatment and prevention of serious viral diseases. Triangle will license exclusive rights worldwide to Dynavax' proprietary immunostimulatory DNA sequences for the treatment of the human immunodeficiency virus and for the treatment and prevention of hepatitis B virus and hepatitis C virus.

www.tripharm.com

Vertex Pharmaceuticals Inc. and Harvard Medical School entered into an agreement to accelerate small molecule drug discovery using genomic and proteomic information from Harvard Medical School's Institute of Proteomics. Vertex will use the information as part of its chemogenomics discovery effort, which seeks to design multiple drugs in parallel based on structurally similar targets in gene families. The Institute of Proteomics is building a complete, physical repository of full-length human genes with the goal of developing tools to analyze expressed proteins and their interactions, based on support from a consortium of public and private entities.

www.vertex.com

Xtrana, Inc. and Biopool International, Inc. signed a Letter of Intent to merge. Xtrana (formerly Molecular Innovations, Inc.) was formed in 1998 based upon proprietary nucleic acid (DNA/RNA) testing technologies that have applications in markets such as genomic research, high-throughput screening in drug discovery, testing for genetic markers

or predisposition to disease, detection of food and environmental contaminants (including agents of biological warfare) and testing for clinically important pathogens.

www.Xtrana.com

Mergers

Carlisle Companies Inc. announced that it has acquired Extract Technologies Ltd., a leading biotech/pharmaceutical system provider. Extract is a global leader in the design and manufacture of containment and bulk powder handling applications used in the Pharmaceutical and Biotech industries. Annual sales revenue in 2000 will exceed \$30.0 million. The company will join with the existing Carlisle Barrier Systems Co. to comprise Carlisle Pharmaceutical Systems.

www.carlisle.com

Celltech Group, plc and Cistron Biotechnology, Inc. signed a merger agreement in which Cistron will become a wholly owned subsidiary of Celltech. Under the agreement, Celltech will purchase Cistron for \$18 million. This includes \$8.75 million for intellectual property encompassing anti-interleukin (IL-1) antibodies as a treatment for chronic inflammatory disorders and about \$9.25 million for Cistron's cash reserves.

www.Celltech-Group.com

China Continental, Inc. announced that it is in negotiations to acquire a biotech pharmaceutical company, International Biotech Laboratory. IBL is a biotechnology company engaged in the development and commercialization of novel therapeutic and diagnostic compounds in Singapore.

www.individual.com

Genzyme Corp. and Biomatrix Inc. filed a joint proxy statement/prospectus with the Securities and Exchange Commission for the planned formation of Genzyme Biosurgery, a new Genzyme division with its own newly created stock. Genzyme Biosurgery will combine the businesses of Biomatrix, Genzyme Tissue Repair, and Genzyme Surgical Products. The merger will create the foremost company in biosurgery, a rapidly emerging market in which sophisticated biomaterials and biological products are used to enhance or replace conventional surgical and medical procedures.

www.genzyme.com

ImuMed International Ltd., announced that it has signed a letter of intent to acquire 100% of the capital stock of Symbolistics, Ltd. of England. Symbolistics is involved in the manufacture and distribution of "near patient" diagnostic devices. Symbolistics holds or has rights to acquire the patents and technology for the manufacture of Symbol Agglutination Readers used in blood grouping.

www.ImuMed.com

Maxygen, Inc announced the signing of a definitive agreement to acquire ProFound Pharma A/S of. ProFound is focused on the development

of improved second-generation protein pharmaceutical products. ProFound was founded and is managed by a team, led by Jan Mikkelsen and Christian Hansen, all of whom have extensive experience from senior management positions in major pharmaceutical companies.

www.maxygen.com

Monsanto Company and Pharmacia & Upjohn announced that the European Commission has cleared the planned merger of the two companies. In relation to the European Commission ruling, the two companies have agreed to divest a few immediate-release analgesic products marketed by Pharmacia & Upjohn in Sweden. Sales of these products are not significant and are immaterial to the overall transaction.

www.pnu.com

Novartis announced the acquisition of Grandis Biotech GmbH. The young company that employs 20 people develops and markets biotechnically produced human growth hormone (rhGH) and will be a part of Novartis' Generics sector. Financial terms were not disclosed.

www.de.novartis.com

Quantum Biotechnologies USA and BIO101 have successfully completed the merger of the two companies. The merger follows the closing of international financing at the beginning of the year and is consistent with the Quantum Group strategy to pursue aggressive growth through acquisition of strategically important products, technologies and operations, further enhancing the Company's gene delivery and functional genomics portfolios.

www.quantumbiotech.com

Sangui Biotech International, Inc. announced that the company has entered into a stock exchange agreement with Felnam Investments, Inc. under which Sangui acquired Felnam Investments. Immediately subsequent to the stock exchange, Sangui elected successor issuer status under Rule 12g-3 of the Exchange Act. The company will file a Form 8-K with the SEC in the next 24 hours which will provide more information on the stock exchange as well as appropriate financial information with respect to Sangui. The Form 8-K filing, which is expected to be available through the SEC's EDGAR system at www.sec.gov, is Sangui's initial filing as a fully reporting company.

www.sangui.de

Sun Pharmaceutical Industries (India) informed the Bombay Stock Exchange that its board would meet on to null the merger of Gujarat Lyka Organics Ltd. with itself. Gujarat Lyka's board would also meet the same day to consider its merger into Sun Pharmaceuticals, the company said in a separate notice to the exchange.

www.individual.com

Teva Pharmaceutical Industries Ltd., announced that it has completed the previously announced acquisition of Novopharm Ltd. Novopharm is the second largest generic drug company in Canada and has substantial operations in the United States and Hungary.

www.individual.com

United Therapeutics Corp. announced that it has acquired worldwide exclusive rights to anti-viral drug compounds developed at University of Oxford and Searle/Monsanto. The exclusive license agreement was signed between Unither Pharmaceuticals, Inc., a wholly owned subsidiary of United Therapeutics, and Synergy Pharmaceuticals, Inc. which owned the licensed rights to the anti-viral compounds.

www.unithertherapeutics.com

Viacord, Inc. and t.Breeders, Inc. closed a merger agreement forming a new cellular medicine company called ViaCell, Inc. The new entity, ViaCell, Inc., will leverage its high quality cord blood banking service infrastructure and patented stem cell expansion technology to build a premier cellular pharmaceutical company providing the highest quality products and services for the treatment of diseases using stem cells. Upon closing the agreement ViaCell received \$11 million capital.

www.viacord.com

Markets

About **180 biotechnology firms are operating in Belgium** with more than 7,000 employees. The companies have a total annual turnover of more than 3.3 billion euros (some 3.17 billion U.S. dollars), and have an annual growth of between 30 percent and 50 percent. The Social Economic Council For Flanders has emphasized the important questions about biotechnology, in particular those concerning genetically modified organisms.

www.individual.com

The **European biotechnology industry is maturing** at last and beginning to deliver on promises. Although Germany managed just to overtake Britain as the country with the largest number of biotech companies. The survey shows that the UK is responsible for 60 per cent of the European sector's value and for three quarters of its products in the late-stage clinical trials. The German government's initiatives to promote biotechnology have made Germany into Europe's most densely populated biotech kindergarten.

www.bioindustry.org

United Therapeutics Corp. and AOP Orphan Pharmaceuticals AG signed a pact for the distribution of Uniprost in Austria, Switzerland, **the Czech Republic, Poland, Hungary, Slovakia and Slovenia**. The agreement forms United Therapeutics' first strategic alliance for the distribution of Uniprost in Europe.

www.unither.com

Pharmaceutical and biotechnology companies have **369 medicines in the pipeline** that meet the definition of "biotechnology medicines" using, recreating or improving upon proteins and other substances produced in the human body to counter disease. According to the Pharmaceutical Research and Manufacturers of America, which released the survey of new biotechnology medicines in development, these medicines target more than 200 diseases.

www.pharma.org

Research / Development

Israel's scientists have developed the first medical weapon against staphylococcal and streptococcal bacteria, commonly known as **"flesh-eating" germs**. A research team led by Professor Raymond Kaempfer of Hadassah Faculty of Medicine in Israel's Hebrew University made this breakthrough after four-year-long hard work, sources in the university said. Their research appeared in the April issue of *Nature Medicine*, which will possibly lead to a practical treatment against such germs.

www.individual.com

U.S. Secretary of Energy Bill Richardson announced that researchers at the Department of Energy's Joint Genome Institute, have **decoded in draft form the genetic information on human chromosomes 5, 16 and 19**. The chromosomes contain an estimated 10-15,000 genes, including those whose defects may lead to genetically linked diseases such as certain forms of kidney disease, prostate and colorectal cancer, leukemia, hypertension, diabetes and atherosclerosis.

www.lbl.gov

Pasteur Institute announced **sequencing of leprosy and listeria bacteria**. Scientists have mapped out the genomes of the two separate bacteria that cause leprosy and listeria poisoning, the Pasteur Institute announced. The discoveries of the genomes' sequences will help scientists better understand the two diseases and could lead to new treatments, experts said.

www.pasteur.fr

Exelixis, Inc. announced the publication of a scientific paper in the issue of *Cell* that describes the discovery of a gene functionally related to the **human tumor suppressor gene p53**. This data has significance in the study of cancer and cancer treatments, as over 50 percent of human cancers contain a p53 mutation, including cancer of the colon, breast, lung, ovary, prostate, cervix, liver, bladder and skin.

www.exelixis.com

Cytoclonal Pharmaceuticals Inc. announced that one of the reagents from its OASIS™ library of gene regulators shows inhibitory activity for the **c-RAF1 oncogene**. The c-RAF1 is a human gene involved in several cancers such as lung and breast cancer and was inhibited by a reagent made with Cytoclonal's OASIS™ technology. The inhibited reagent is an optimized antisense reagent made using a patented technology developed by Dr. Donald Gray at the University of Texas at Dallas. The OASIS™ library is a collection of these optimized reagents.

www.cytoclonal.com

DigiScents, Inc., and CLONTECH have announced a major advance in understanding the human sense of smell. The companies have isolated, cloned and sequenced **126 human olfactory receptor genes**. This latest discovery combined with publicly available olfactory research gives DigiScents access to close

to half of the estimated 1000 genes that code for human olfactory receptors.

www.digiscents.com

Tularik Inc. announced that its researchers, working in collaboration with scientists from University of California at Berkeley, have elucidated the three-dimensional structure of the **DnaG primase protein**. The findings, published in *Science*, provide an atomic-resolution image of the DnaG primase protein which performs the essential step of producing RNA primers that are required for initiating DNA replication of the bacterial chromosome. This replication is the initial step in most bacterial infections. Tularik researchers hope to use this new structure to speed the development of novel antibacterial drugs.

www.tularik.com

Researchers at The Rockefeller University, in collaboration with Genentech, Inc., have made a surprising discovery about the mechanism by which two used **clinical antibodies fight tumors**. The finding, reported in the April issue of *Nature Medicine*, has immediate implications for increasing the potency of an entire class of cancer drugs now on the market and for developing more effective drugs in the future.

www.rockefeller.edu

University of Oxford researchers have developed an environmentally friendly, **genetic technique for controlling insect populations** that skips sterilization and costly sorting processes. The procedure, tested on the fruit fly, could someday be used on more commercially important pests or disease-carrying insects. Current methods breed sterile insects, separating the males from females and delivering the males into natural populations where they compete with wild males for female attentions, reducing the target insect population over generations.

www.science.com

Researchers at Tularik have determined the **crystal structure of the active site on a specialized RNA polymerase** (a "primase") that helps initiate DNA synthesis. The active site on the *E. coli* primase, whose architecture is now revealed by James L. Keck and colleagues, contains a groove through which single-stranded DNA is likely threaded, and a DNA-RNA hybrid produced. In a related Perspective article, Peter H. von Hippel and Debra H. Jing further discuss the primase's role as a component of the complex machinery that replicates DNA.

www.science.com

Scientists have long known that immune system cells known as "**killer CD8**" cells attack the AIDS virus after it enters the body by killing virus-infected cells. They also have known that CD8 cells can stop the virus from infecting new cells. Researchers now have found that CD8 cells continue to fight the virus after it enters another kind of immune system cell and begins to reproduce. In fact, Duke University Medical Center researchers have discovered that CD8 cells can stop human immunodeficiency virus (HIV).

www.mc.duke.edu

The finding, made by scientists from the Howard Hughes Medical Institute at the Uni-

versity of Wisconsin-Madison's Institute for Molecular Virology, gives critical insight into the relationship between virus and host cell, and could provide the basis for **new genetic strategies** to contain RNA virus infections such as those that cause hemorrhagic fever, hepatitis and the common cold. The discovery was reported in the *Proceedings of the National Academy of Sciences* by a Wisconsin team of virologists led by Juana Díez in the laboratory of Paul Ahlquist in the University of Wisconsin Institute for Molecular Virology.

www.wisc.edu

Researchers at Johns Hopkins University have identified a **genetic alteration in the 14.3.3 sigma gene** that appears to be common to the vast majority of breast cancer tumors. This hypermethylated sigma gene may ultimately provide a new target for the early diagnosis or treatment of breast cancer. To identify possible genetic abnormalities that may occur in breast cancer, sequential analysis of gene expression was performed on breast cancer cell lines and normal breast cells, co-author Dr. Anne T. Ferguson told Reuters Health.

www.med.jhu.edu

Genetic immunization of mice with human tyrosinase-related protein 2 (TRP2) effectively destroys melanocytes and fosters immunity against **metastatic growth of B16 melanoma cells**, according to data from a German study. Dr. Thomas Tuting and colleagues, from Johannes Gutenberg University investigated the effectiveness of TRP2 as an antigen for melanoma. Instead of using plasmid DNA encoding autologous murine TRP2, which in previous studies proved ineffective, the researchers used cDNA encoding xenogeneic human TRP2, which they say is "highly homologous to murine MRP2".

www.uni-mainz.de

Scientists have **modified a technique used to discover novel genes**, allowing the discovery of genes that might otherwise be missed because they are present at low levels or only under certain conditions. The findings are reported in the April issue of the *Proceedings of the National Academy of Sciences*. The usual genome screening technique takes advantage of the long poly-adenosine tails present on most messenger RNAs. Scientists use a deoxythymidine oligonucleotide to produce complementary DNA from the messenger RNA and subtract out the abundant genes that are already known.

www4.nas.edu

Biologists at the University of California, San Diego have identified genes in a laboratory weed that are necessary for **normal seed dispersal**. In the April issue of *Nature*, the researchers report the identification of two genes in *Arabidopsis* that, when inactivated, prevent this weed from shattering its seed-containing pods. This is significant because the inactivation of these same genes in canola and other closely related, commercially important crops should prevent the premature dispersal of seeds that typically results in significant losses of yield.

www.ucsd.edu

In an article in *Genes & Development*, Jeffrey M. Friedman, Howard Hughes Medical Institute investigator, and his colleagues at The Rockefeller University reported that the "**fat**" **hormone leptin alters gene expression** in fat cells. Using expression arrays, the researchers found the pattern of expressed genes changed in fat cells following administration of leptin. Leptin is produced by fat tissue and secreted into the bloodstream, sending a message to the hypothalamus and other tissues to stop eating and to burn more fat. Mice that lack leptin are obese, weighing as much as three times more than their normal counterparts.

www.rockvax.rockefeller.edu

Applications / Products

Australian scientists have developed a quick and reliable technique for assessing genetic damage by measuring chromosome abnormalities. The technique, known as the **micro-nucleus assay**, was developed by Dr Fenech while he was a student at the Flinders University of South Australia.

www.nap.csiro.au

A team of Japanese researchers reported in the April *Nature Biotechnology* on a **new method for creating DNA microarrays** that borrows from ink-jet printing technology. The researchers adapted a Bubble-Jet variation of ink-jet printing for printing DNA spots onto glass slides, and though the technology is still in development, so far the results are encouraging. For one thing, the bubble-jet approach could increase the density of DNA spots that can be deposited on the array surface to the point that an entire mammalian genome could be arrayed on a single DNA chip.

guide.nature.com

PROCREA BioSciences Inc. held from Université de Montreal the exclusive world rights to RAM GENOMIC™, a novel technology that will permit to identify gene patterns and new gene targets for diagnostic and therapeutic purposes. As mentioned by Dr. Patrice Hugo, Ph.D., Vice President, R&D, PROCREA BioSciences inc. „The Human Genome Meeting held in Vancouver represented a pivotal event in the course of our understanding of biology, as concerted efforts from several groups around the world have allowed to decrypt the makeup of the human genome.

www.procrea.qc.ca

China has made a breakthrough in **detecting transgenic products**. By using PCR test, the Jiangsu Entry-Exit Inspection and Quarantine Bureau in east China has successfully detected genetically altered soybeans in imports from the United States, Brazil, and Argentina. A source with the bureau said this success will accelerate China's efforts to inspect other transgenic products.

www.individual.com

Swiss researchers have **created DNA machines that transduce the surface stress** that arises during hybridization into nanomechanical forces. Using 12-base pair oligomers mounted in a cantilever array, they found that DNA can generate a force of 1 nN. The technique is sensitive enough to detect a difference in force generated by single-base pair mismatch in a 12-mer. Hence, this tiny machine could prove useful for detecting genetic variations. In addition, the researchers showed that other bimolecular reactions could be similarly utilized, such as the binding of the constant region of IgG to protein A. www.bioresearchonline.com

ProdiGene has produced the industrial enzyme Laccase in plants. **Laccase** is a key enzyme having applications in the adhesives, textile and pulp and paper industries, which have combined annual sales of \$30 billion worldwide. Laccase is a naturally-occurring enzyme that is isolated from fungi. Most laccase is produced through a fermentation process. The ProdiGene production and delivery system is able to grow the enzyme in maize, offering several advantages. www.prodigene.com

AgroBiotech

Cows grazing pastures, or fed diets containing vegetable oil, produced five times more of a **cancer-fighting compound conjugated linoleic acid** than cows fed conventional diets, according to Agricultural Research Service studies. CLA is a fatty acid found in beef and dairy fats. The human body doesn't produce CLA on its own, but CLA is available through foods such as whole milk, butter, beef and lamb. ARS dairy scientist Larry Satter at the ARS U.S. Dairy Forage Research Center showed how to increase CLA levels in milk from cows fed typical confinement rations. www.ars.usda.gov

EDEN Bioscience introduced a completely **new class of crop production and plant protection** technology. This technology will be offered via Messenger® the first product that offers growers a novel, effective and environmentally sound tool for plant disease management; plant growth enhancement; and insect, mite and nematode suppression. As a result, Messenger can dramatically reduce or replace the need for many traditional chemical pesticides, thereby decreasing risk to the environment. Messenger is not registered for use or sale in the United States. EPA registration is anticipated within the next few weeks. www.individual.com

FoodBiotech

Genetically-modified fish, which can grow up to 10 times faster than normal, could be cleared for human consumption within a

year. A US firm - AF Protein - is developing the GM fish on Prince Edward Island, Canada. The fish would become the first genetically modified animal cleared for consumption, and the technology involved could cut the cost of raising salmon and trout by half. The Massachusetts-based company has inserted growth hormone genes from one fish, and genes from another fish which can activate them, into Atlantic salmon. As a result, at the age of 18 months, the salmon are five times the size of their unmodified siblings. www.bioindustry.org

EnviroBiotech

Microbiologists of the University of Massachusetts have found that **bacteria living just below the earth's surface** can be coaxed to rapidly convert oil to methane gas in oil-rich soil. Their findings reported in the April issue of *Nature*, could change the way the oil exploration industry operates. The research is funded by the National Science Foundation (NSF). www.nsf.gov

PharmaBiotech

Molecular Devices Corp. introduced the first in a series of new reagent kits targeted at high throughput screening and drug discovery applications. The **FLIPR Calcium Assay Kit** was developed specifically to improve the screening efficiency of Molecular Devices' FLIPR® system, which is a drug discovery platform used by a number pharmaceutical companies, said the company. The new FLIPR Calcium Assay Kit provides all the reagents needed for the predominant screening application performed on the FLIPR system, the calcium assay. www.moleculardevices.com

Vaccination against an enzyme common to a variety of human tumors might effectively mobilize the body's own immune system to attack and kill cancer cells, scientists from the UCSD School of Medicine and Cancer Center report in the April issue of the *Proceedings of the National Academy of Science*. A team of the UCSD Cancer Center, in collaboration with the Institut Pasteur in Paris, has now successfully used a **prototype vaccine in cancer cells** in vitro to activate a type of lymphocyte called cytotoxic T-lymphocytes, or killer cells, to destroy cancer cells using telomerase as a target. www.ucsd.edu

MediTech

SONUS Pharmaceuticals, Inc. and The State University of New York at Buffalo announced the signing of an agreement to work together in developing blood substitute **products for**

intravascular oxygen delivery. With this arrangement, SUNY/UB will lead the efforts in the research and development of oxygen delivery systems based on SONUS' proprietary perfluoropentane emulsion technology and will be responsible for licensing to third parties the rights to commercialize any products developed under this agreement. www.sonuspharma.com

The communal government of Hannover and the Paul-Ehrlich-Institute have given permission for the **production of blood stem-cell transplants** to the Hanover Center of Cell Therapy. The center for cell therapy is a cooperation project of the Medical University of Hannover (MHH) and Roche Diagnostics GmbH that was founded in 1997. The advantage of this cooperation is the ideal combination of medical research competence and experience of the MHH with the know-how of one of the worlds leading pharma companies. www.mh-hannover.de

ReGen Biologics, Inc. announced that Sulzer Medica has commenced the European launch of the **Collagen Meniscus Implant** (CMI) developed by ReGen. The CMI is the first tissue-engineered biological meniscal implant designed to regenerate the damaged meniscus. Sulzer Medica estimates that approximately 350,000 meniscal injuries are treated every year in Europe. Sulzer Medica, one of the world's leading orthopedic and cardiology device manufacturers, has a minority holding in ReGen. www.regenbio.com

Gene Therapy

Genetronics Biomedical Ltd. reported results of the extension of its platform technology, electroporation, into **gene therapy**. The company announced the signing of its fifth corporate agreement in the area of gene therapy. The five agreements involve genes thought to be useful in treating hemophilia, HIV and other infections, and various forms of cancer. The breadth is from stimulating immune responses to correcting genetic diseases to vaccines. Work under some of the Agreements has been going for a matter of months, and some genes have been tested in pigs and in non-human primates. www.genetronics.com

PPGx secured an exclusive worldwide license from St. Jude Children's Research Hospital to test for mutations in the thiopurine S-methyltransferase gene. PPGx is a joint venture of PPD, Inc. and Axys Pharmaceuticals, Inc.. Researchers at St. Jude identified a subset of pediatric leukemia patients with mutations in the TPMT gene who suffered severe reactions to some common anti-cancer drug treatments. The test from PPGx will allow physicians to screen for this mutation and adjust their patients' drug therapy accordingly. In addition, the test will allow researchers to continue evaluating the mutations of the TPMT gene in clinical research. www.axyspharm.com

Bioinformatics

BioNumerik Pharmaceuticals, Inc. presented data at the 91st Annual Meeting of the American Association of Cancer Research (AACR) on two novel high performance computer engineered agents that have been designed to help address common and important unmet needs in cancer therapy. BioNumerik's BNP7787 is a unique chemoprotectant utilized to prevent the common and often severe toxicities associated with platinum and taxane administration without inhibiting the antitumor activity of these agents.
www.noonanrusso.com

Celera Genomics and Takeda Chemical Industries, Ltd. have signed an agreement that provides a five-year comprehensive subscription to five of Celera's databases, which includes Celera's advanced bioinformatics tools and browsers.
www.peCorp.com

Genome Therapeutics Corp. and **Compugen Inc.'s LabOnWeb.com** announced that they have entered into a collaboration to establish Internet-based access to Genome Therapeutics' proprietary PathoGenome™ Database. The collaboration will provide scientists worldwide with access to the most comprehensive source of DNA sequence information on some of the most medically important microbial organisms to accelerate the discovery of new anti-infective products. Under terms of the agreement, Compugen will have exclusive rights to make Genome Therapeutics' PathoGenome™ Database available over the Internet.
www.LabOnWeb.com

InnaPhase Corp., announced that Schering-Plough Research Institute has implemented InnaPhase's enterprise PK/PD **data management and analysis system**. This system will provide Schering-Plough researchers with a single repository for all PK/PD data collected during the drug development phase, providing significant quality and efficiency benefits. InnaPhase is the only company that offers a commercial system that combines a secure, integrated, regulatory-compliant, and easily accessible database with powerful analytical tools for preclinical and clinical pharmacology data.
www.innaphase.com

Lexicon Genetics Inc. announced a multi-year functional genomics research agreement with American Home Products under Lexicon's OmniBank® Internet Universal™ program. Under the agreement, American Home Products will have Internet access to Lexicon's OmniBank gene sequence database and library of 70,000 knockout mouse clones for use in determining the function of genes that represent potential drug targets.
www.Lexgen.com

LION Bioscience announced the official opening of its second American subsidiary in Cambridge, MA. LION Bioscience, Inc., a fully owned subsidiary of LION Bioscience AG is opening half a year after the opening of LION

Bioscience Research, Inc., the subsidiary founded to execute part of the \$100 million research alliance entered into with Bayer AG in June 1999.
www.lionbioscience.com

Motorola, Inc. announced that it has made a strategic equity investment in TissuelInformatics, Inc., a privately held bioinformatics company that is building the **world's first Virtual Tissue Banks™**. Under the terms of the agreement, Motorola and TissuelInformatics will also work toward a two-way technology transfer agreement.
www.motorola.com

Simulations Plus Inc., a premier developer of drug discovery and development **simulation software for** the pharmaceutical and biotechnology industries, announced that it has expanded into the anti-infective market with the licensing of both its GastroPlus™ and QMPRPlus™ software programs to Scriptgen Pharmaceuticals Inc.
www.simulations-plus.com

Patents

Caliper Technologies Corp. announced that the U.S. Patent and Trademark Office has issued a broad patent covering **Caliper's LibraryCard™ reagent array** system and the Sipper™ chip sample access system which are important features of the company's LabChip® high throughput platform. Caliper expects these inventions to bring important functionality to Caliper's LabChip® technology, especially in the area of high throughput drug screening and genomics applications.
www.calipertech.com

AltaRex Corp. announced that it has been issued a key patent by the Australian patent office. Filed worldwide and entitled "**Method and Composition for Reconfirming Multi-Epitopic Antigens to Initiate an Immune Response**," it broadly covers the Company's Antibody-based ImmunoTherapy technology platform and forms the basis for a strong proprietary position for OvaRex™ MAb, the Company's lead antibody for ovarian cancer in the pivotal stage of clinical development.
www.ovariancanada.org

EXACT Laboratories, Inc. announced the issuance of its seventh U.S. Patent 6,020,137, titled "**Methods for the Detection of Loss of Heterozygosity**." The patent describes methods for analyzing genetic variations, such as Single Nucleotide Polymorphisms, for pharmacogenomics and genetics research, and allows for pooling many patient samples for a single analysis. The EXACT technology has the potential to accelerate the discovery of disease-associated genes and eventually lead to new targeted and effective pharmaceutical treatments.
www.exactlabs.com

Kirin Brewery Co., Ltd. announced that it has been granted a Japanese patent for its

Transchromo Mouse™ which retains human chromosome fragments and a method for producing human antibodies when it is used. The patent, JP3030092, broadly covers its technology for which applications are also being examined in the United States, Europe and Asian countries.
www.kirin.co.jp

Palatin Technologies Inc., a biotechnology company with pipeline products in infection imaging and sexual dysfunction, announced that the U.S. Patent and Trademark Office issued patent 6,027,711 covering the company's **MIDAS peptide technology**. This is the second MIDAS patent to issue having claims that cover the design and synthesis of conformationally constrained metallo-peptides. MIDAS is Palatin's platform technology for design and development of receptor selective agents for use as therapeutics or imaging.
www.palatin.com

TRANSGENE S.A., has been issued U.S. Patent No. 6,040,174 titled "**Defective Adenoviruses and Corresponding Complementation Line**" covering packaging cell lines designed to eliminate the risk of generating self-replicating adenoviruses (called replication competent adenoviruses during the production of adenoviral vectors and a method of production using such cell lines, for the manufacture of RCA free batches of adenoviral vectors. TRANSGENE has also received a notice of allowance from the European Patent Office for its equivalent european patent application.
www.transgene.fr

Dr. Abulkalam M. Shamsuddin and Enzymatic Therapy, Inc., have reached an agreement with Lifesource Naturals concerning a lawsuit filed against Lifesource alleging infringement of U.S. Patent No. 5,082,833 ("the '833 patent"), entitled "**Reduction of Cell Proliferation and Enhancement of NK-Cell Activity**."
www.enzy.com

Life Technologies, Inc. reports the issuance of U.S. patents 5,955,280 and 5,965,368, entitled "**Reverse Two-Hybrid System**," which cover methods and reagents for characterization of large-molecule interactions within organisms. The technology has applications in the study of proteins, gene function and drug screening.
www.lifetech.com

Cytogen Corp. received a notice of allowance from the Japanese Patent Office for a patent entitled, "**Totally Synthetic Affinity Reagents**," or TSAR. TSAR technology is a method of identifying ligands or portions of proteins that interact with receptors, protein domains, antibodies or nucleic acids. Identifying these ligands is an important first step in the process used by AxCell Biosciences Corp., a wholly owned subsidiary of Cytogen, to generate information about protein interactions for its proprietary Inter-functional Proteomic Database™ of protein signaling pathways.
www.cytogen.com

AVI BioPharma, Inc. has been granted U.S. patent 6,030,941 for **CYTOPORTER**, its unique drug delivery system. AVI expects this novel technology to improve drug uptake and

minimize toxicity for a variety of FDA-approved drugs as well as for drugs in development. CYTOPORTER transports drugs across lipid barriers into the interior of cells where they have their optimal therapeutic effect. CYTOPORTER makes it easier for the compounds to get through the lipid barriers, thus improving a drug's effectiveness and allowing for treatment at the lowest possible dosage.
www.avibio.com

AltaRex Corp. has been awarded its first U.S. patent. The **"Therapeutic Method and Composition of Treatment"** patent covers an innovative technique using ultraviolet light to modify antibodies and to enhance certain beneficial immune responses. Significantly, the patent allowance covers the use of the company's lead product candidate, OvaRex™ MAb, now in the final stage of clinical development for the treatment of ovarian cancer. Prior to the claims covered in this patent allowance and the issuance of the "multi-epitopic" patent in Australia, announced earlier, the company was dependent on Orphan Drug status for OvaRex MAb market exclusivity, which is only applicable in the U.S. and lasts for seven years.
www.altarex.com

The United States Patent and Trademark Office issued Corixa Corp. a patent covering its AnervaX.RA™ rheumatoid arthritis (RA) vaccine. The patent, U.S. Patent Number 6,045,796, entitled **"Vaccination with Peptide of MHC Class II Molecules for Treatment of Autoimmune Disease,"** includes claims covering the composition of the AnervaX.RA vaccine, as well as use of the vaccine to treat rheumatoid arthritis. AnervaX.RA vaccine is a synthetic 20-amino acid peptide sequence (amino acids 57-76) from the Beta chain of the specific MHC class II molecules genetically linked to RA, and includes a "shared epitope," that is common to approximately 90% of RA patients.
www.corixa.com

Nanogen, Inc. announced that it has been awarded two additional United States Patents relating to its electronic microarray technology. U.S. Patent No. 6,048,690, entitled **"Methods For Electronic Fluorescent Perturbation For Analysis And Electronic Perturbation Catalysis For Synthesis"** and U.S. Patent No. 6,051,380, entitled **"Methods And Procedures For Molecular Biological Analysis And Diagnostics"** are the thirteenth and fourteenth U.S. patents issued to the Company. Dr. Michael J. Heller, Nanogen's Chief Technology Officer and a co-founder of Nanogen, is an inventor on both patents.
www.nanogen.com

Demegen, Inc. announced that it has received United States Patent 6,018,102 for compositions of matter and methods of making a **ubiquitin-lytic peptide fusion for transforming plant cells** with Demegen genes that fight disease or enhance nutrition.
www.demegen.com

Cytoclonal Pharmaceuticals Inc., announced that it has received patent claim allowance by the U.S. Patent Office for its **monoclonal**

antibody LCG-Mab which recognizes a protein on the surface of non-small cell lung cancer. Non-small lung cancer makes up about 65% of lung cancer. The LCG-Mab is in development for a diagnostic test and treatment of non-small cell lung cancer.
www.cytoclonal.com

Courtroom

Triangle Pharmaceuticals, Inc. received a letter from the Medicines Control Council in South Africa. The letter informed Triangle **that Study FTC-302 should be terminated.** The Company is in ongoing discussions with the MCC. The Company received this letter from the MCC after issuing a press release clarifying a South African media report issued.
www.tripharm.com

ACLARA BioSciences, Inc. filed its response to claims by **Caliper Technologies Corp. that ACLARA infringed certain patents** naming J. Michael Ramsey as inventor and allegedly licensed to Caliper. In its Answer and Counterclaim, ACLARA denies that it infringes any of the Ramsey patents, and further asserts that the Ramsey patents are invalid. ACLARA believes that each of the Ramsey patents is unenforceable because the U.S. Patent and Trademark Office was given false information in that the patents do not name the true inventors, and material prior art was withheld from the Patent Office.
www.aclara.com

The most bitter patent dispute ever seen in the biotechnology industry took another step toward resolution, as an established biotech giant and a tiny start-up fight over rights to Epogen, an anaemia drug with \$4bn in worldwide sales. Investors will be paying close attention to the second round of hearings in the **Amgen vs Transkaryotic Therapies suit** for clues as to how the judge will rule in the May trial. The outcome of that will have a huge bearing on the future earnings of Amgen, the most widely-held biotech stock in the world.
www.amgen.com

Shares in Hungarian drug maker Gedeon Richter Rt. are expected to rise after the company **won a court case against US drug maker Merck** about the generic manufacturing of a drug to control blood pressure, analysts said. The ruling by a Budapest court can be appealed against. Merck sued Richter five years ago after Richter began producing Ednyt, a drug used for blood-pressure control and based on the active ingredients of a Merck product, Renitec.
www.bse.hu

Microbix Biosystems Inc. announced that the United States District Court for the District of Maryland issued a two-part decision on litigation

involving Microbix, BioWhittaker, Inc., and Abbott Laboratories. **Microbix had sued BioWhittaker and Abbott** for alleged anti-trust violations and other causes of action. The lawsuit arose out of an exclusive supply contract entered into by Abbott and BioWhittaker which Microbix alleges damaged Microbix in its development of a generic version of the clot-busting drug urokinase by depriving it of necessary source material. Abbott counter-claimed against Microbix for damages alleging theft of trade secrets.
www.abbott.co.uk

The English High Court gave **judgement in favour of Oxford Gene Technology Ltd.** on the question of whether Affymetrix, Inc. is licensed under various OGT intellectual property, including OGT's DNA microarray patents in Europe and the United States, numbers EP 373 203 and US 5,700,637. The Court held that Affymetrix is not licensed.
www.affymetrix.com

SangStat announced that a **British court has rebuffed Novartis'** attempt to have the UK marketing authorization of SangStat UK's SangCya Oral Solution (cyclosporine) revoked. The judge ruled that the Medicines Control Agency acted properly in granting the SangCya Oral Solution marketing authorization, ordered Novartis to pay MCA's costs incurred in defending the action, and denied Novartis' request to appeal the decision.
www.sangstat.com

Biopool International Inc. reported that Agen Biomedical Ltd., (Australia) **filed a complaint** against the company in U.S. District Court in San Francisco. The complaint alleges that Biopool's manufacture and sale of D-dimer test kits in the United States infringes an Agen patent.
www.biopool.com

Law / Politics

The Japanese cabinet approved a rare bill that **will ban human cloning**, even at a research level, and could punish offenders with prison terms of up to five years. The bill now goes to parliament and if passed, will be the first Japanese law mandating punishment for certain scientific research. "It is felt that human cloning could damage human dignity and break down the social structure by muddling family ties," a spokesman for the Science and Technology Agency said.
www.dailynews.yahoo.com

Mexico's Senate voted unanimously to require **labeling of foods that contain** genetically modified ingredients. Under the Mexican measure genetically modified foods would have to bear a label reading "transgenic food." Those containing some genetically modified ingredients would need a label reading: "Food made with transgenic products."
www.individual.com

As of last year, 47% of the soybeans and 37% of the corn grown in the U.S. were planted using **genetically-engineered seeds**. Potatoes, tomatoes, peanuts and numerous other crops are also being modified using genetic engineering. As a result, the vast majority of all processed foods in the U.S., including breads, baby food, ice cream, soft drinks, snack chips, and salad and cooking oils contain some form of genetically modified organism.

www.individual.com

European Affairs

The Austrian government decided an **import stop for Aventis T 25 GM maize**. Greenpeace approved of the decision and called on the Austrian federal government to issue a ban on all genetically manipulated plants. Since the European Parliament refused to tighten EU-directive 90/220 Greenpeace fears that from autumn 2000 on more GM plants will be admitted on the European market.

www.greenpeace.de

A French newspaper reported that **425 plots had been secretly planted with genetically modified crops in France**, a country where opposition to GMO foods has traditionally been very strong. The Journal du Dimanche said the crops were planted over the past four years without informing the communities or villages nearby. Four hundred and twenty five communities have or have had experimental plots over the last four years. It was said the Ministry of Agriculture had illegally kept such locations secret.

www.individual.com

Britain could soon pass legislation to **allow the cloning of human embryos for medical research**, paving the way for scientists to create spare parts for the body. A panel of experts, led by the government's chief medical officer, Liam Donaldson, has concluded after a 12-month study that the potential benefits of cloning embryos to create tissues to treat the sick far outweigh ethical concerns. The report quoted unidentified government officials as saying that the government is almost certain to end the ban on the therapeutic cloning of embryos for research that could eventually cure kidney, liver or heart disease.

www.individual.com

Environment / Safety

Greenpeace Canada's Executive Director Peter Tabuns called on consumers to **stop buying Kellogg products** as the environmental organization launched a consumer-based campaign targeting the use

of genetically modified organisms by the cereal giant.

www.greenpeace.com

As anti-biotechnology activist groups prepared a renewed **attack on the Canadian food industry**, AGCare, has expressed its appreciation to Canada's grocery retailers and food manufacturers, who continue to support the integrity of our food regulatory system, our scientists, and the farmers who choose crops enhanced through biotechnology for the food quality, production and environmental benefits they confer.

www.agcare.org

Testing and **regulation of genetically modified foods** and crops needs to be significantly tightened in the US. The National Academy of Sciences report found no evidence that any of the plants made toxic to pests through genetic engineering and on the market were unsafe to eat. But it suggested numerous areas where further research should be done to assess their ecological impact and to identify potential allergens. It suggested, for example, long-term studies of feeding such plants to animals as a means of assessing the potential human health impact.

www.bioindustry.org

Genetically altered foods sold in grocery stores are safe, but US agencies that regulate gene-spliced plants must work harder to protect health and the environment, the National Academy of Sciences said. In a long-awaited report that is expected to influence the US policy debate over whether biofoods need more stringent regulation, the Academy emphasized that no evidence exists to suggest that biofoods are unsafe. But it also called for long-term monitoring to detect any effects on health or the environment.

www4.nas.edu

Education / Career

Biosintetica and Sindus will invest US\$25mil and form a joint venture to open a new company in Ribeirao Preto, in the State of Sao Paulo, the **Biolatina**. The plant will produce advanced biotechnology drugs such as insulin, growing hormone, and hepatitis B vaccine, developed with genetic engineering and be sold in the internal and external market. Biosintetica and Sidus will have 50% of the company each, and will invest US\$2mil in the beginning. BNDES may finance the remaining US\$23mil. The plant will be constructed in a tract of land of 100,000 square meters, and will have a laboratory of 2,000 meters.

www.individual.com

American Home Products Corp. **plans to invest approximately \$685 million** to expand its Wyeth Medica Ireland manufacturing operations by building a new biotechnology facility in Ireland. Approximately 1,300 new jobs will be created by 2005 at both Wyeth Medica Ireland locations, Grange Castle and Newbridge, bringing the total number of AHP

employees in Ireland to 3,000, explains a company spokesperson. The Wyeth Medica Ireland expansion at Grange Castle will involve the construction of a new biotechnology facility, with approximately 1 million square feet of buildings, on a 90-acre site.

www.ahp.com

Genentech, Inc. announced the **purchase of a cell culture manufacturing facility in Porrino, Spain**, from Glaxo Wellcome Biofarm S.A. The facility has been established as a wholly-owned subsidiary company, "Genentech Espana S.L.," and will supplement Genentech's existing bulk cell culture production capacity.

www.gene.com

BC International Corp., announced the start up of its **New Product and Process Development Laboratory** at the University of Florida's Sid Martin - Biotechnology Lab in Florida. This Laboratory will serve as a critical component in the development and viability of wide-scale biomass ethanol facilities in the United States.

www.bcintcorp.com

The Saskatchewan Research Council's **new plant genetics laboratory** was officially opened at Innovation Place in Saskatoon, thanks in part to funding from a joint federal-provincial program. GenServe Laboratories, which will provide support services to agricultural and biotech companies involved in plant-related research and development activities, was established with \$563,000 from the Canada-Saskatchewan Agri-Food Innovation Fund.

www.individual.com

DepoMed, Inc. Oral Drug Delivery Systems announced its relocation into expanded state-of-the-art facilities in Menlo Park. The 20,000-square-foot facility is 50% larger than the company's previous headquarters in Foster City, CA, and will support expanded research and development.

www.depomedinc.com

Digene Corp. announced that it has received approval from the FDA to manufacture and distribute certain products of the Hybrid Capture® Gene Analysis System at the Company's **new Manufacturing, Research and Development**, and Headquarters site in Gaithersburg, Maryland. This approval specifically covers the Digene Hybrid Capture II HPV Test. The new facility was designed for high volume manufacturing of the Company's gene analysis tests.

www.digene.com

Funding

The **Ontario Research and Development Challenge Fund** will invest up to \$75 million over five years to boost the province's capability in genomics research, Energy, Science and Technology Minister Jim Wilson announced.

www.biotech.ca

Nabi announced it has received notice from the National Institute on Drug Abuse that Nabi's grant application to NIDA titled, "**Vaccination for Treatment of Nicotine Dependence**" has been recommended for funding. The funding award, totaling \$776,000 in year one, should be made in September subject to compliance with governmental requirements. The purpose of the four-year project funded, in part, by this grant is to conduct both late pre-clinical studies and human clinical trials evaluating the safety and efficacy of Nabi's proprietary vaccine against nicotine, Nabi[®] NicVAX[™], in the treatment and prevention of nicotine dependence.

www.nabi.com

The NIH has allotted a total of **\$12.8 million to nine universities for pharmacogenetics research**, the governmental agency announced. The pharmacogenetics research, which is being sponsored by the National Human Genome Research Institute and the National Cancer Institute among other NIH components, will focus on improving the understanding of how an individual's genetic make-up influences the efficacy and side effects of pharmaceuticals.

www.nih.gov

The Scottish Executive Rural Affairs Department, in a joint funding initiative with the Scottish Higher Education Funding Council, **is funding a collaborative project at two of Scotland's leading research centres. This three-year project will allow scientists to develop** the technology of DNA vaccination for protecting ruminants from bacterial infection. It complements existing work being done at Moredun Research Institute and will allow greater research synergy with the Royal School of Veterinary Studies at Edinburgh University.

www.sebiotech.org.uk

The Scottish Crop Research Institute, in conjunction with John Innes Centre and Long Ashton Research Station, has received the funding from the Biotechnology and Biological Sciences Research Council and Scottish Executive Rural Affairs Department. Project leaders hope to discover more than 80,000 gene fragments from wheat and barley and develop methods for determining their function. The research will broaden our understanding of cereal crops and yield huge benefits for those industries associated with the two crops, including Scotland's whisky sector.

www.sebiotech.org.uk

ImClone Systems Inc. announced that the Company has been awarded a Phase I **Small Business Innovation Research grant** by the National Cancer Institute to study the effect of active immunization on the inhibition of tumor angiogenesis (blood vessel growth).

www.imclone.com

Kosan Biosciences, Inc. announced that it has received a Phase I Small Business Innovative Research grant from the National Institute of Diabetes and Digestive and Kidney Diseases to support development of novel erythromycin-derived agonists of the motilin receptor.

www.kosan.com

The National Cancer Institute awarded an

SBIR grant to UroGen to support development of the company's prostate-cancer gene therapy product. The \$500,000 award, given over two years, was issued to further develop UroGen's adenoviral-vector gene therapy technology for the treatment of prostate cancer. The product has been designed to replicate in and destroy prostate cancer cells and to deliver the therapeutic gene interleukin-3 to the tumor site.

www.UroGen.com

Organisations / Communities

The Human Genome Project international consortium announced that two billion of the three billion "letters" that constitute **the genetic instruction book of humans have been deciphered and deposited into GenBank**. GenBank, the public database of DNA sequence operated by the National Institutes of Health, is accessible freely and without restrictions to all scientists in industry and academia.

www.ncbi.nlm.nih.gov

EuropaBio, welcomed the **rejection by the European Parliament** of proposals for a liability regime specifically for genetically modified (GM) products. The Association wants to point out that this does not mean that the industries it represents will now be allowed to operate in a 'legal vacuum' as far as liability is concerned. The reality is that biotechnology products and activities are already covered by horizontal civil, administrative, criminal, product and environmental liability laws both at the national and the EU levels and the European bioindustries abide by these laws.

www.europa-bio.be

People

BioNet Technologies, Inc. is pleased to announce that **Dr. William J. Palin** has joined the experienced team of Immune Technologies as Executive Vice President and Chief Scientific Officer.

www.bionettech.com

Synarc, a global company that provides innovative surrogate marker technologies for clinical drug trials, announced the appointment of **Peter Steiger**, Ph.D., as the company's new President and CEO.

www.synarc.com

Incyte Genomics, Inc., announced the appointment of **David Briscoe** as President of Incyte Genomics Limited. In his new role, Mr. Briscoe will be responsible for managing all European operations, including sales, marketing,

customer service, and administration. He will report to Michael Lack, Chief Operating Officer of Incyte.

www.incyte.com

Events

BC USA Conferences announced the Second Annual International Intensive Symposium on **BIOLOGICAL ASSAY DEVELOPMENT and VALIDATION**, to be held on May 17-19, 2000 in Washington, D.C. Biological assays have become the highest profile analytical method in today's biopharmaceutical and pharmaceutical industry. They often represent the keystone for proof of concept during early product development and are critical to firms making manufacturing changes. A good biological potency assay is often the key to a successful CMC section.

www.ibcusa.com

The **8th Annual BioPartnering Europe (BPE) Conference**, taking place at the Queen Elizabeth II Conference Centre in London on October 16-17, 2000, announced that it is accepting applications for its Open House and Emerging Company presentations.

www.biopartnering.com

Contracting & Negotiating Clinical Trials Conference to Detail Contractual Relationship Management Between Sponsor-Service Provider on May 24-25, 2000 in Philadelphia. Organized to bring together the sponsor and service provider communities, the conference is organized to address every conceivable topic involved in contracting clinical trials and detailing ways to enable both pharma and service providers to manage the contractual relationship effectively and develop satisfactory contracts, announced Strategic Research Institute.

www.srinstitute.com

Cutting-edge advances in applied anti-cancer research on novel anti-tumor agents, validated targets, anti-angiogenic inhibitors and protein kinase, metalloproteinase, metalloenzyme, farnesyl transferase, at pre-clinical and clinical stages will be the focus of a **new pharma conference series** to take place in Princeton on June 12-13, 2000, announces Strategic Research Institute.

www.srinstitute.com

The FDA and the NIH will hold a **satellite workshop on May 25th to educate sponsors, investigators and institutions about safety regulations and clinical practices** in trials involving gene therapy or xenotransplantation products. At the workshop, which will be available by videoconference, the Director of FDA's Center for Biologics Evaluation and Research (CBER) Dr. Kathryn Zoon and the Director of NIH's Office of Biotechnology Activities Dr. Amy Patterson will elucidate the roles and perspectives of their respective agencies on basic regulatory requirements as well as special issues of gene therapy.

www.fda.gov

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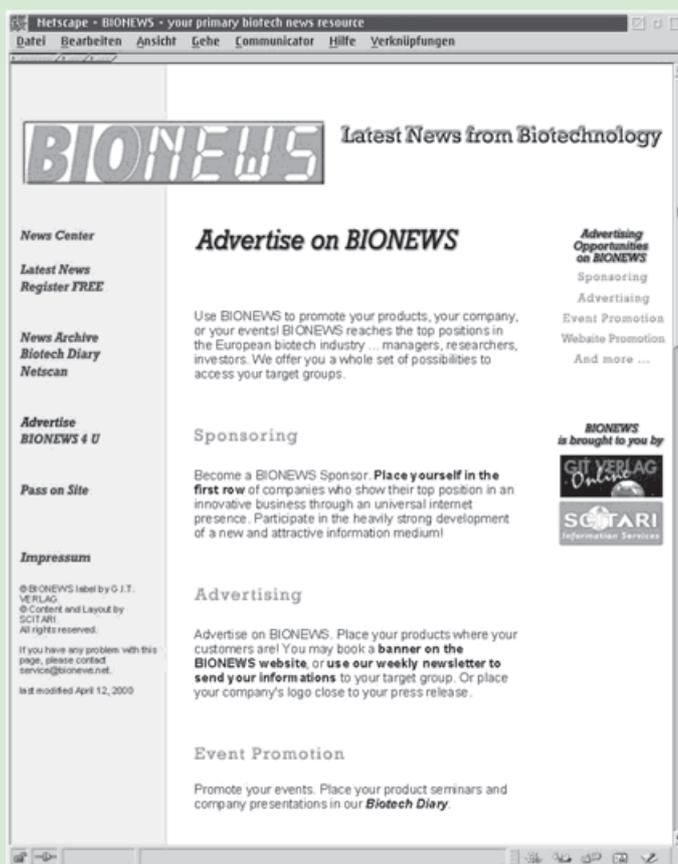
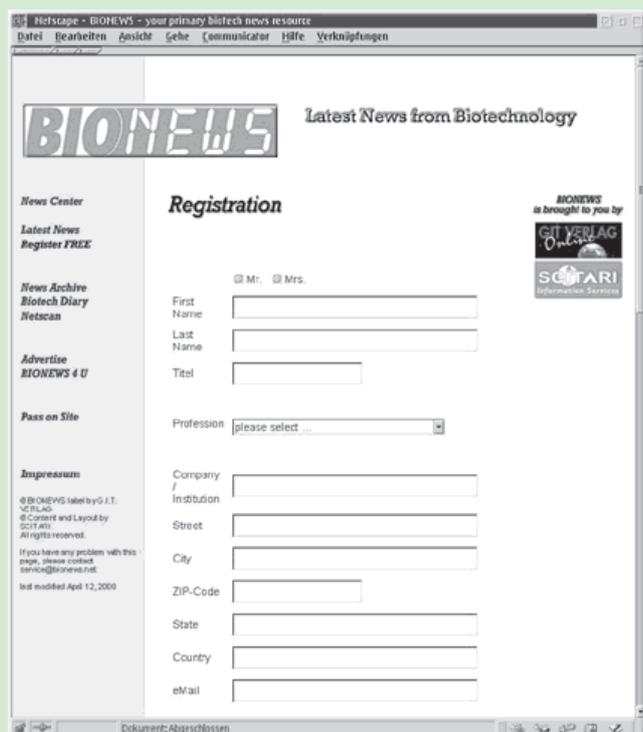
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Diary

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Oncogenes and Growth Control Conference	May 13-17, 2000	Heidelberg Germany	Tel: +49 6221 387331, Fax: +49 6221 387158
PBA 2000, 1 st International Symposium on Pharmaceutical and Biomedical Analysis	May 14-18, 2000	Basel, Switzerland	Catherine Koulekpató, Schweizer Mustermesse, Kongresszentrum Messe Basel, Messeplatz 21, 4021 Basel, Switzerland; tel +41 61 6862 824, fax +41 61 6862 185; ckoulekpató@messebasel.ch, http://www.congress.ch/pba
Proteinase 2000	May 15-16, 2000	London, UK	The SCI Conference Secretariat, 14/15 Belgrave Square, London, SW1X 8PS, UK, Tel:- +44 171 235 3681, Fax: +44 171 235 7743, conferences@chemind.demon.co.uk
Synthesis, Screening, Sequencing , 1 st International Symposium	May 22-27, 2000	Frankfurt a.M., Germany	DECHEMA e.V., Lecture Office / Ms C Hess, POB 15 01 04, D-60061 Frankfurt am Main, Germany, Tel: +49 69 7564 384, Fax: +49 69 7564 176, hess@dechema.de
ACHEMA 2000	May 22-27, 2000	Frankfurt a.M., Germany	DECHEMA, P.O.Box 150104, 60061 Frankfurt, Tel: +49 69 7564, Fax: +49 69 7564
EUROPIC 2000	May 25-31 ,2000	Zagare Bay, Italy	European Study Group Molecular Biology of Picornaviruses, bercoff@caspur.it
Scanning Probe Microscopy - Sensors and Nanostructures	May 28-31, 2000	Heidelberg, Germany	Tel: +49-6221 387331, Fax: +49 6221 387158
American Society for Biochemistry and Molecular Biology	June 04-09, 2000	Boston, USA	Tel.: +1 301 530 7145, Fax: +1 301 530 7001, www.faseb.org
Agbiotech: The Science of a New Century	June 05-08, 2000	Toronto, Canada	Sharon Murray, ABIC Conference Coordinator, c/o The Signature Group Inc , 489 Second Avenue North Saskatoon, SK, Canada S7K 2C1, www.abic.net
Recombinant DNA Technology	June 11-16, 2000	Bloomington, USA	jlclay@indiana.edu
6 th European Symposium on Calcium Binding Proteins in Normal and Transformed Cells	June 14-17, 2000	Paris, France	Prof. Françoise Russo-Maire, Institut Chochin de Génétique Moléculaire, INSERM U 332, 22 rue Méchain, 75014 Paris
Second International Congress on Mismatch Negativity and its Clinical Applications	June 15-18, 2000	Barcelona, Spain	mmn2000@psi.uv.es
Careers in Life Science	June 16, 2000	UMIST, UK	The SCI Conference Secretariat, 14/15 Belgrave Square, London, SW1X 8PS, UK, Tel: +44 171 235 3681, Fax: +44 171 235 7743, conferences@chemind.demon.co.uk
Introduction to RFLP and Fingerprinting Analysis, RAPD Analysis, and DNA Sequencing	June 18-21, 2000	Bloomington, USA	jlclay@indiana.edu
Beyond Genome 2000	June 19-23, 2000	San Francisco, USA	CHI: +1 617 630-1300, Fax -1325; chi@healthtech.com , www.healthtech.com/conference/00mgn/index.htm
High Throughput Technologies	June 19-21, 2000	Philadelphia, USA	Cambridge Healthtech Institute; +1 617 630 1300, Fax -25; chi@healthtech.com , www.healthtech.com/conference/00htt/index.htm
InterMed 2000	June 20-24, 2000	Gijon, Spain	+ 34 985 17 60 06, Fax -55 07; congreso@sibi.org , www.bioetica.sibi.org
Proteomics: High Throughput Protein Analysis	June 22-23, 2000	San Francisco, USA	Cambridge Healthtech Institute; +1 617 630 1300, Fax -25; chi@healthtech.com , www.healthtech.com/upcom_chi.htm
Association of Genetic Technologists Annual Meeting	June 22-25, 2000	Scottsdale, USA	+1 913 541 0497, Fax -0156; agt-info@aplimeapro.com , www.agt-info.org/AnnualMeeting.html
XIIemes Rencontres de Blois - "Frontiers of Life"	June 25 - July 1, 2000	Chateau de Blois, France	L. M. Celnikier, Observatoire de Meudon; +33 1 45077410, Fax -69; blois97@obspm.fr , www.usr.obspm.fr/conf/blois2000.html
Biolatina 2000	June 26-28, 2000	Buenos Aires, Argentina	Lic. Maria Marta S. de McCarthy; +54 11 4371 9912/6413, Fax -6413; info@foarbi.org.ar , www.foarbi.org.ar
DNA, the molecule of heredity: conformation, modification and recognition in biomedicine	July 2-5, 2000	Brno, Czech Republic	Dr. Viktor Brabec; +39 055 2480202, Fax -246; susi@css-congressi.it , sup.ultrakohl.com/ultrapath10/ULTRPT10.HTM
1 st European Congress on Agri-Biotechnology	July 3-8, 2000	Berlin, Germany	Dr. Peter Sijmons, EFB Section on Agri-Biotechnology; +31 317 475017, Fax -347
Biotechnology for Conservation of the Environment	July 8-13, 2000	Munster, Germany	W. Geckrath, Munster Committee EXPO 2000; +49 5192 130 -229, Fax -215; expo@munster.de , www.munster.de
6 th International Symposium on the Biosafety of Genetically Modified Organisms	July 8-13, 2000	Saskatoon, Canada	Biotechnology Industry Organization; +1 202 857 0244, Fax -8152; www.bio.org
International Young Life Scientists Symposium	July 13-16, 2000	Birmingham, UK	The Meetings Office; +44 171 580-3481, Fax -7626;
18 th International Congress of Biochemistry and Molecular Biology	July 16-20, 2000	Birmingham, UK	Jazel Kirby, The NEC; +44 121 767-3755, Fax -3535; genome@necgroup.co.uk , www.iubmb2000.org

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