



BioTechCircle News®

April 2007

Featured April article:

Northeastern University Research Finds External Magnet on Tumor Helps Drugs Get There and Stay Longer

By combining the electrostatic properties of cationic liposomes with the strength of an externally applied magnet field, researchers target tumor vasculature while affecting as little of the healthy tissue as possible.

<http://www.neu.edu/nupr/news/0407/tumormagnet.html>

In this articles section: links to 64 free Web articles in 14 major categories.

The major categories are in alphabetical order and further subdivided to make it easy for you to locate news and developments in technology, the business and the markets in the life science areas of interest to you.

Note: if the links don't connect you directly, please copy and paste the entire URL into your web browser.

Here are the major categories and the page where each category starts:

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AGRI-BIOTECH

Subcategory: Energy/ Fuel

Biomass Program

U.S. Department of Energy

01-Apr-07

Reviews technology for conversion of biomass (plant-derived material) to valuable fuels, chemicals, materials and power, so as to reduce dependence on foreign oil and foster growth of biorefineries.

<http://www1.eere.energy.gov/biomass/>

DOE Awards \$23 Million to Five Cellulosic Ethanol Conversion Projects

U.S. Department of Energy

27-Mar-07

DOE announced that 5 projects will receive \$23 million over 4 years to develop highly efficient fermentative organisms that convert cellulosic biomass into ethanol. Awardees are: Cargill, Celunol, DuPont, Mascoma, and Purdue University.

http://www1.eere.energy.gov/biomass/news_detail.html?news_id=10670

BIOBUSINESS MANAGEMENT

Subcategory: Government/ Approvals

EU Approach to Safety: Vox Populi or Vox Dei?

Peter O'Donnell

Applied Clinical Trials

01-Apr-07

Reviews the EU's new public-centric initiative to simplify drug safety, noting that industry input focused on the need for simplified and consistent mechanisms to eliminate national divergences and duplications.

<http://www.actmagazine.com/appliedclinicaltrials/article/articleDetail.jsp?id=416535&pageID=1&sk=&date=>

FDA User Fees Officer More Support for R&D

Jill Wechsler

Applied Clinical Trials

01-Apr-07

Pharmaceutical and biotech companies will provide nearly \$400 million in annual fees in 2008 to support Food and Drug Administration review and oversight of new drugs and biologics, a 29% increase over 2007.

<http://www.actmagazine.com/appliedclinicaltrials/article/articleDetail.jsp?id=416534>

Subcategory: Patent/Intellectual Property Issues

Stem Cell Patents Under Fire

Susan Morrissey

Chemical & Engineering News

09-Apr-07

According to a preliminary ruling by the U.S. Patent & Trademark Office, 3 important human embryonic stem cell patents are invalid. Some groups believe the patents are overreaching and a barrier to promising research in this area.

<http://pubs.acs.org/cen/news/85/i15/8515notw3.html>

CLINICAL TRIALS

Subcategory: Government/ Approvals

PTC Therapeutics Announces Interim Phase 2 Results of PTC124 in Cystic Fibrosis

Lead Discovery

04-Apr-07

Company announces receiving FDA's Fast Track designation. Development programs receiving Fast Track designations typically receive FDA priority review (6-month vs. standard 10-month review).

<http://www.pipelinereview.com/joomla/content/view/2151/100/>

CONTRACT SERVICES

Subcategory: Biomanufacturing

Pharma Outsourcing

02apr07

Chemical & Engineering News

02-Apr-07

Custom manufacturers are increasingly getting nontraditional chemistry challenges from their drug company partners. Presents three case studies of the relationship between a custom manufacturer and a biotech firm.

<http://pubs.acs.org/cen/coverstory/85/8514cover.html>

DIAGNOSTIC TOOLS

Subcategory: Immunology/ Infectious Diseases

Minnesota Partnership Researchers Discover Disease 'Fingerprint'

Mayo Clinic

02-Apr-07

A 'fingerprint' or signature pattern in the blood associated with the autoimmune disease dermatomyositis has been discovered. Physicians could use this fingerprint as an alternative diagnostic tool, rather than more invasive muscle biopsy.

<http://www.mayoclinic.org/news2007-rst/3985.html>

Subcategory: Test Systems - Microbiology

Researchers Develop Technique for Bacteria Crowd Control

Argonne National Laboratory

16-Apr-07

Device, based on the transmission of tiny electric current in a very thin film sample cell containing a colony of bacteria, could have enormous applications in miniaturized medical diagnostic kits and bioanalysis.

http://www.anl.gov/Media_Center/News/2007/news070416.html

DRUG DELIVERY

Subcategory: Imaging

Biologists Prove Critical Step in Membrane Fusion

Brown University

17-Apr-07

Biologists have observed the hemifused state for the first time, a critical step in membrane fusion, the process that allows for fertilization, viral infection and nerve cell communication. May help find new ways to deliver drugs to cells.

http://www.brown.edu/Administration/News_Bureau/2006-07/06-138.html

Subcategory: Miscellaneous

Northeastern University Research Finds External Magnet on Tumor Helps Drugs Get There and Stay Longer

Northeastern University

16-Apr-07

By combining the electrostatic properties of cationic liposomes with the strength of an externally applied magnet field, researchers target tumor vasculature while affecting as little of the healthy tissue as possible.

<http://www.neu.edu/nupr/news/0407/tumormagnet.html>

INDUSTRY

Subcategory: Geographic focus

Europe's New Strategy for Life Sciences and Biotech

EurActive

11-Apr-07

Presents the refocus of the EU's 30-point action plan for life sciences and biotechnology spanning 2002-2010 to 5 interdependent priority actions. Small companies still have to cope with a fragmented patent system, lack of funding, other challenges.

<http://www.euractiv.com/en/science/europe-new-strategy-life-sciences-biotech/article-163094>

Building Bioclusters

Nature Review 09-Apr-07
Reviews experience of 2 people involved with bioclusters at different stages of their development and discusses economic development benefits and challenges involved: San Diego, California and Budapest, Hungary.
<http://www.nature.com/nrd/journal/v6/n4/full/nrd2292.html>

Biotech Director to Spark Interest in the Field

Gale Scott New York Business 18-Apr-07
Reports on New York Biotechnology Association's marketing plan which includes positioning the association as the voice of biotech for the entire state.
<http://www.newyorkbusiness.com/apps/pbcs.dll/article?AID=/20070418/FREE/70418011>

Subcategory: Government/ Approvals

Understanding Nanotechnology

Susan R. Morrissey Chemical & Engineering News 16-Apr-07
While policymakers are setting up rules and regulations to protect the public, research that is specific to the risks of engineered nanomaterials is not keeping up with the needs of policymakers. Morrissey says science must play a key role.
<http://pubs.acs.org/cen/government/85/8516gov1.html>

Subcategory: M&A Activities

Takeda, Eisai Takeovers Raise Biotech Costs for Merck, Novartis

Jason Gale and Hiroshi Bloomberg 19-Apr-07
Japan's largest drugmakers are on a biotechnology shopping spree, raising the cost of takeovers and new products in the global pharmaceuticals industry. Reviews other merger and acquisition activity in North America and Europe.
<http://www.bloomberg.com/apps/news?pid=20601101&sid=albdiSnCQh.o&refer=japan>

Subcategory: Miscellaneous

Biotech's Quiet Rally

Jeffrey R. Kosnett Kiplinger 18-Apr-07
Financial analysts say that the life sciences industry is back in favor with stock market investors.
<http://www.kiplinger.com/columns/picks/archive/2007/pick0418.htm>

Views of Innovation Measurement

R&D 01-May-07
Reviews findings of the European Innovation Scoreboard (2006 EIS) compares the innovation performance of the 25 member states of the EU, new member states, plus Croatia, Turkey, Iceland, Norway, Switzerland, the U.S., and Japan.

<http://www.rdmag.com/ShowPR.aspx?PUBCODE=014&ACCT=1400000100&ISSUE=0704&RELTYPE=FE&PRODCODE=00000000&PRODLETT=AU>

Subcategory: Personalized Medicine

Personalized Medicine: Dream or Reality?

James Netterwald, PhD, MT Drug Discovery & Development 01-Apr-07
(ASCP)

The hope for personalized medicine is that physicians will not prescribe drugs in the same way to everyone. The reality is that there have been few drugs with significant person-to-person variability in responsiveness.

<http://www.ddmag.com/ShowPR.aspx?PUBCODE=090&ACCT=1600000100&ISSUE=0704&RELTYPE=DEV&PRODCODE=00000000&PRODLETT=AA>

INVESTMENTS/ GOV. SUPPORT

Subcategory: Geographic focus

Final Word: Is Building Biotech an Economic Magic Potion?

K. John Morrow, Jr. BioPharm International 01-Apr-07

Sweden are the world's top 3 investors in R&D (at 7%, 4.27%, and 3.51% of GNP, respectively), and all have booming economies.

Investment in biotech has to be viewed as long-term and part of an overall economic development plan, says Morrow.

<http://www.biopharm-mag.com/biopharm/article/articleDetail.jsp?id=415836>

Subcategory: Miscellaneous

HHMI Announces New Open Competition for HHMI Investigators

Howard Hughes Medical Institute 12-Apr-07

The Howard Hughes Medical Institute (HHMI) will hold a national competition for investigators and plans to name as many as 50 new researchers by spring 2008. At least \$600 million in basic biomedical research will be funded by the Institute.

<http://www.hhmi.org/news/20070412.html>

Subcategory: Nanotechnology

Building Up Nanotech Research

Ann M. Thayer Chemical & Engineering News 09-Apr-07

Since 2001, U.S. government agencies participating in the National Nanotechnology Initiative (NNI) have funded more than 60 facilities, centers, and networks. NNI's unique interdisciplinary approach explains why large centers have been funded.

<http://pubs.acs.org/cen/coverstory/85/8515cover.html>

Subcategory: State

Economic Developers Find That Biotech Isn't Cheap

NY Journal News

05-Apr-07

Discusses government assistance in the states of New York and Connecticut to attract or retain biotech companies.

<http://www.nyjournalnews.com/apps/pbcs.dll/article?AID=/20070405/BUSINESS01/7040503>

PERSONALIZED MEDICINE

Subcategory: Oncology

Personalized Medicine: Genes and Biomarkers That Allow Doctors to Choose the Right Therapy for the Right Patient

American Association for Cancer Research 17-Apr-07

Researchers have identified gene expression signatures that could serve as biomarkers to predict how individuals will respond to the breast cancer drugs lapatinib and CI-1040.

<http://www.aacr.org/home/about-us/news.aspx?d=741>

PLATFORM TECHNOLOGIES

Subcategory: Antibodies

Cheaper, Potentially Better Disease Treatments Expected from Faster Approach to Developing Therapeutic Antibodies

Universtiy of Texas at Austin

18-Apr-07

A method of mass-producing disease-fighting antibodies entirely within bacteria has been developed and a collaboration to identify antibodies to treat arthritis and asthma has begun.

<http://www.engr.utexas.edu/news/articles/200704181210/index.cfm>

Subcategory: Diagnostic Test Systems

New Fluorescent Proteins Expand the Color Palette

R&D

01-May-07

Fluorescent proteins have 2 major functional roles in cellular and molecular biology: as a reporter or marker, a probe genetically fused to a gene of interest; as biosensors for the elucidation of various cellular processes.

<http://www.rdmag.com/ShowPR.aspx?PUBCODE=014&ACCT=140000100&ISSUE=0704&RELTYPE=FE&PRODCODE=00000000&PRODLETT=AM>

Subcategory: Immunology/ Infectious Diseases

Sandia Researchers Take New Approach to Studying How Cells

Respond to Pathogens

Sandia National

03-Apr-07

A new approach to studying how immune cells respond to pathogens in the first few minutes and hours of exposure looks at cells one at a time as they start trying to fight the invading pathogens.

<http://www.sandia.gov/news/resources/releases/2007/microscale.html>

Subcategory: Musculoskeletal

“Fusion” Protein Found by Johns Hopkins Researchers

Johns Hopkins Medicine

10-Apr-07

Scientists have discovered a protein, called Solitary, that is required for two neighboring cells to fuse and become one “super cell.” Large-scale motion, such as flexion of a bicep, relies on hundreds or even thousands of super cells.

http://www.hopkinsmedicine.org/Press_releases/2007/04_10_07.html

Subcategory: Oncology

Massive Gene Screening Points Way to More Effective Chemotherapy

UT Southeastern Medical Center

11-Apr-07

Using a technology that can quickly screen all 20,000-plus human genes for biological activity, scientists have isolated 87 genes that seem to affect how sensitive human cancer cells are to certain chemotherapy drugs.

<http://www8.utsouthwestern.edu/utsw/cda/dept353744/files/355758.html>

Subcategory: Proteomics

Leveraging Disorder

Sarah Everts

Chemical & Engineering News

02-Apr-07

Scientists report that at least 30% of human proteins are intrinsically disordered, and that a lot of intrinsically unstructured proteins are also involved in disease processes, from cancer to protein-folding diseases like Alzheimer's and Parkinson's.

<http://pubs.acs.org/cen/science/85/8514sci1.html>

Membrane Protein Activation

Stu Borman

Chemical & Engineering News

02-Apr-07

Researchers have designed helical peptides that can selectively activate membrane proteins involved in cell signaling, which could ease studies of the way membrane receptors work and could lead to new drugs.

<http://pubs.acs.org/cen/news/85/i14/8514notw2.html>

Need Oxygen? Cells Know How to Spend and Save

Nick Zagorski

Johns Hopkins Medicine

05-Apr-07

Researchers have discovered how cells fine-tune their oxygen use to

make do with whatever amount is available at the moment: by replacing one protein (cytochrome c oxidase: COX4-1) with an energy-efficient substitute (COX 4-2).

http://www.hopkinsmedicine.org/Press_releases/2007/04_05b_07.html

RESEARCH ADVANCEMENTS

Subcategory: Addiction

NIDA Study Identifies Genes That Might Help Some People Abstain From Smoking

National Institutes of Health

02-Apr-07

Scientists have identified 221 genes that distinguished successful quitters from those who were unsuccessful, bringing researchers a step closer toward tailoring individualized drug therapy for addiction based on an individual's unique genetic make-up.

<http://www.nih.gov/news/pr/apr2007/nida-02b.htm>

Subcategory: Cardiology/ Vascular Diseases

Blame the Brain for High Blood Pressure

University of Bristol

16-Apr-07

Scientists present idea that one cause of high blood pressure lies within the brain, and not the heart or blood vessels. Prompted by discovery of a new protein, JAM-1 (junctional adhesion molecule-1), located in the walls of blood vessels in the brain.

<http://www.bris.ac.uk/news/2007/5401.html>

Subcategory: Immunology/ Infectious Diseases

"Combination" Lyme Disease Vaccine Proteins Patented

Brookhaven National Laboratory

09-Apr-07

Chimeric, or "combination," proteins may advance the development of vaccines - by triggering a 1-2 immune response - and diagnostic tests that distinguish Lyme disease-causing strains of bacteria from relatively harmless ones.

http://www.bnl.gov/bnlweb/pubaf/pr/PR_display.asp?prID=07-38

Bacterial Walls Come Tumbling Down

Howard Hughes Medical Institute

09-Apr-07

The first detailed images of an elusive drug target on the outer wall of bacteria may provide scientists with enough new information to aid design of novel antibiotics to treat deadly *Staphylococcus aureus* and other bacterial pathogen infections.

<http://www.hhmi.org/news/strynadka20070309.html>

Scientists Implicate Gene in Vitiligo and Other Autoimmune Diseases

National Institutes of Health

10-Apr-07

Scientists discovered a gene, NALP1, that is key to predisposing people to vitiligo and other autoimmune diseases, particularly autoimmune thyroid disease. Implications for better treatment and possibly preventive measures for these diseases.

<http://www.nih.gov/news/pr/apr2007/niams-10.htm>

One of Life's Most Common Compounds Causes Allergic Inflammation

University of California San Francisco

23-Apr-07

Insects, molds and parasitic worms produce billions of tons of chitin a year. Researchers discovered that chitin triggers an allergic inflammatory response in the lungs of mice and increased production of a chitin-destroying enzyme.

<http://pub.ucsf.edu/today/cache/feature/200704205.html>

Subcategory: Metabolism: Obesity, Diabetes

Researchers Identify New Genetic Risk Factors for Type 2 Diabetes

National Institutes of Health

26-Apr-07

Using a comprehensive strategy known as a genome-wide association study, researchers have identified at least 4 new genetic variants associated with increased risk of diabetes and confirmed existence of another 6.

<http://www.genome.gov/25521010>

New Molecule Involved in the Body's Processing of Dietary Fat

Rachel Champeau

University of California Los Angeles

03-Apr-07

Investigators discovered that a protein called glycosylphosphatidylinositol-anchored high-density lipoprotein-binding protein 1 (GPIHBP1) may help regulate the delivery of fats to cells for energy and storage.

<http://newsroom.ucla.edu/page.asp?RelNum=7812>

Subcategory: Musculoskeletal

First Demonstration of Muscle Restoration in an Animal Model of Duchenne's Muscular Dystrophy

University of Pennsylvania

23-Apr-07

Researchers have for the first time demonstrated restoration of muscle function in a mouse model of Duchenne's muscular dystrophy (DMD), using a new type of drug that targets a specific genetic defect. The drug is called PTC124.

http://www.uphs.upenn.edu/news/News_Releases/apr07/muscle-restoration-muscular-

Subcategory: Neurology

Subcategory: Oncology

A Genetic "Gang of Four" Drives Spread of Breast Cancer

Howard Hughes Medical Institute

12-Apr-07

Although shutting off 4 specific genes individually can slow cancer growth and metastasis, the researchers found that turning off all 4 together had a far more dramatic effect on halting cancer growth and metastasis.

<http://www.hhmi.org/news/massague20070412.html>

Short Chromosomes Put Cancer Cells in Forced Rest

Johns Hopkins Medicine

25-Apr-07

A research team has stopped a form of blood cancer in mice by engineering and inactivating an enzyme, telomerase, thereby shortening the ends of chromosomes, called telomeres. The process where cells permanently stop growing is called senescence.

http://www.hopkinsmedicine.org/Press_releases/2007/04_25_07.html

Small Molecule Offers Big Hope Against Cancer

University of Alberta

16-Jan-07

Dichloroacetate (DCA), an odorless, colorless, inexpensive, relatively non-toxic, small molecule may soon be used as an effective treatment for many forms of cancer including lung, breast and brain tumors.

<http://www.expressnews.ualberta.ca/article.cfm?id=8153>

RESEARCH TOOLS

Subcategory: Computing Systems

Microsoft Gains Technical-computing Toehold

Stephen Shankland

ZD Net

08-Apr-07

Microsoft is showing some early signs of success with Windows Computer Cluster Server (CCS) that is geared for a technical computing market dominated by Linux: computing clusters for research such as cancer molecular modeling.

http://news.zdnet.com/2100-3513_22-6174266.html

Subcategory: Databases

The Human Metabolome Project Contretemps

Kevin Davis

Bio-IT World

05-Apr-07

Discusses response to database, containing a rich array of biological and chemical information on more than 2,000 human metabolites, which could prove invaluable for studying cell biology, disease biomarkers, and much more.

<http://www.bio-itworld.com/newsitems/2007/april/04-05-07-human-metabolome-database>

Speeding “Fingertip” Discovery—twenty Years of Protein Info in One
Johns Hopkins Medicine 23-Apr-07

A new publicly-available database, with information about nearly all the chemical changes nature makes by adding phosphate to proteins manufactured in human cells, offers researchers shortcuts to study disease.

http://www.hopkinsmedicine.org/Press_releases/2007/04_23_07.html

New Online Database to Help Fight Infectious Diseases
World Health Organization 16-Apr-07

. The Drug Target Prioritization Database, designed to facilitate the development of medicines to fight infectious diseases afflicting the developing world, may be accessed at <http://TDRtargets.org>.

<http://www.who.int/mediacentre/news/releases/2007/pr14/en/>

Subcategory: Genome Sequence

Integrated Microbial Genomes (IMG)
Integrated Microbe 15-Mar-07

IMG provides a framework for comparative analysis of the genomes sequenced by the Joint Genome Institute. IMG 2.1 has been updated with new microbial genomes.

<http://img.jgi.doe.gov/cgi-bin/pub/main.cgi>

Analysis of Rhesus Monkey Genome Uncovers Genetic Differences With Humans, Chimps
National Institutes of Health 12-Apr-07

One of the most useful features of the rhesus genome is that it is less closely related to the human genome than to the chimp genome. Important features that have been conserved in primates over time can be more easily seen by comparing rhesus to human.

<http://www.nih.gov/news/pr/apr2007/nhgri-12.htm>

Subcategory: Imaging

Freeze! Scientists Film Proteins at Work by Freezing Them in Different States
European Synchrotron Radiation Facility 20-Apr-07

Film shows how a lysine amino acid grabs a water molecule and imports it into the enzyme "superoxide reductase" to perform the catalytic reaction on the superoxideto to eliminate a toxic molecule called “superoxide radical”.

<http://www.esrf.eu/news/pressreleases/freeze/>

STRATEGIC RELATIONSHIPS

Subcategory: Collaboration

Shared Research Efforts Tap New Technologies

Salvatore Salamone Bio-IT World 02-Apr-07

Salamone discusses ways the life sciences community is turning to Web 2.0-type tools such as wikis and MySpace-like social networks to help research communities collect and share information.

<http://www.bio-itworld.com/newsitems/2007/march/04-02-07-shared-research>

Q&A with Tim Berners-Lee

Business Week 09-Apr-07

The inventor of the Web explains how the new Semantic Web could have profound effects on the growth of knowledge and innovation.

http://www.businessweek.com/technology/content/apr2007/tc20070409_961951.htm

Subcategory: Miscellaneous

Searching

Chemical & Engineering News 16-Apr-07

What good could a fraction of the \$6 billion generated annually by search engine advertisers do if it were directed toward charitable organizations? Searchers can designate any of 31,000 registers charities to receive a % of advertiser money.

<http://pubs.acs.org/cen/newscripts/85/8516newscripts.html>

THERAPEUTIC CATEGORY

Subcategory: Musculoskeletal

Slick and Springy: Brown Research Reveals Protein's Role in Joints

Wendy Lawton Brown University 05-Apr-07

Tests show a new role that the protein lubricin plays in synovial fluid: increasing resiliency in joints as well as protecting shoulders, hips and other joints from wear, reducing the likelihood of injuries and arthritis by reducing friction.

http://www.brown.edu/Administration/News_Bureau/2006-07/06-131.html

Subcategory: Neurology

Enhanced Environment Restores Memory in Mice with Neurodegeneration

Howard Hughes Medical Institute 29-Apr-07

Mice whose brains had lost a large number of neurons due to neurodegeneration regained long-term memories and the ability to learn after their surroundings were enriched with toys and other sensory stimuli, according to new studies.

<http://www.hhmi.org/news/tsai20070429.html>

Subcategory: Oncology

Someone's Betting On Dendreon

Forbes.com

09-Apr-07

Investors are betting that the U.S. Food and Drug Administration will break with tradition and approve Dendreon's prostate cancer treatment, which "showed statistical significance in increasing survival."

http://www.forbes.com/markets/2007/04/09/dendreon-analyst-upate2-markets-equity-cx_er_0409markets30.html

Subcategory: Trauma/ Emergency Medicine

Deflecting Damage: Flexible Electronics Aid Brain Injury Research

Princeton University

06-Apr-07

New membranes feature microelectrodes that are able to withstand the sudden stretching that is used to simulate severe head trauma, and may lead to better treatments immediately following the injury.

<http://www.princeton.edu/main/news/archive/S17/58/03E42/index.xml?section=topstories>

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