



BioTechCircle News®

March 2007

Featured March article:

PlayStation 3 taking a Role in Alzheimer's Fight

Folding@home is a distributive computing project for conducting research on Alzheimer's disease. Want to help? Lend your PlayStation 3 to the project when not in use. Its processor can do certain calculations 20 times faster than a PC.

<http://www.sfgate.com/cgi-bin/article.cgi?f=/c/a/2007/03/15/BAGLTOL80T28.DTL>

In this articles section: links to 58 free Web articles in 15 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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Jim Miller

BioPharm International

01-Mar-07

Miller reports that small-scale biomanufacturers are attracting capital, while commercial-scale contract manufacturing organizations (CMOs) are building competitive barriers that new entrants cannot match.

<http://www.biopharm-mag.com/biopharm/article/articleDetail.jsp?id=407872>

DIAGNOSTIC TOOLS

Subcategory: Neurology

CSHL Scientists Confirm Genetic Distinction Between Heritable and Sporadic Cases of Autism

Cold Spring Harbor Laboratory

15-Mar-07

Using microarray technology, researchers found that spontaneous copy number mutations occur primarily in sporadic cases of autism. Information could help determine the risk of having a second child with autism, development of new therapies.

http://www.cshl.edu/public/releases/07_autism.html

DRUG DELIVERY

Subcategory: Nanotechnology

No Carrier Necessary: This Drug Delivers Itself

University at Buffalo

27-Mar-07

Scientists have developed a drug delivery system that consists of nanocrystals about 100 nanometers of pure HPPH (2-devinyl-2-(1'-hexyloxyethyl) pyropheophorbide), a photosensitizer currently in Phase I/II human clinical trials. Acts as its own carrier.

<http://www.buffalo.edu/news/fast-execute.cgi/article-page.html?article=84900009>

Ultrathin Films Deliver DNA as Possible Gene Therapy Tool

Jill Sakai

University of Wisconsin

26-Mar-07

Researchers have created ultrathin, nanoscale films composed of DNA and water-soluble polymers that allow controlled release of DNA from surfaces. When used to coat implantable medical devices, the films route useful genes to exact locations.

<http://www.news.wisc.edu/13597.html>

Subcategory: Vectors

Polymers Show Promise for Gene Delivery, Tissue Scaffolds, Other Biomedical Applications

Bio.com

27-Mar-07

Scientists have developed a new family of gene vectors - novel polymers that can ferry genetic material across the cell membrane so that it can be incorporated into the machinery of the cell.

<http://www.bio.com/realm/research.jhtml?realmId=5&cid=27500002>

INDUSTRY

Subcategory: Bio Pharma

Sector Snap: Biotech Stays Flat

Business Week

27-Mar-07

Reviews share prices of several Nasdaq and American Stock Exchange biotech index companies.

<http://www.businessweek.com/ap/financialnews/D8O4O2G80.htm>

Subcategory: Cell Lines

Stem Cells

Chemical & Engineering News

26-Mar-07

"It's time for policymakers to find common ground" and for our country to move forward on all fronts of stem cell research, using all cell lines from embryonic to adult, says NIH Director.

<http://pubs.acs.org/cen/news/85/i13/8513notw9.html>

Subcategory: Energy/Fuel

Genome Sequencing Reveals a Key to Viable Ethanol Production

Bio.com

02-Mar-07

Researchers have for the first time identified how genes responsible for biomass breakdown are turned on in a microorganism that produces valuable ethanol from materials like grass and cornstalks.

<http://www.bio.com/realm/research.jhtml?realmId=1&cid=26600032>

Dow Plans Propylene Glycol From Renewable Feedstock

Michael McCoy

Chemical & Engineering News

26-Mar-07

Product called propylene glycol renewable, or PGR, because the glycerin raw material is created as a by-product when vegetable and seed oils such as soybean, sunflower, and canola are transesterified into the blend of methyl esters known as biodiesel.

<http://pubs.acs.org/cen/news/85/i13/8513news2.html>

Biofuels Center Grows In West

Michael McCoy

Chemical & Engineering News

15-Mar-07

Three universities, a government laboratory, and several companies are joining forces in Colorado to create what organizers hope will be a

China's economic planning includes its Five-Year Plan. The latest plan (2006-2010) includes continued investments by the central government in the biopharmaceutical sector to help it become one of the leading industries in China by 2020.

<http://www.biopharm-mag.com/biopharm/article/articleDetail.jsp?id=407871>

Subcategory: State

Biotech's Unlikely New Pal

Business Week

26-Mar-07

Reviews trends developing in private equity investments in life sciences. Most of the funding is for businesses that have a steady cash stream or those that provide services to biotech scientists and thus don't have huge research costs.

http://www.businessweek.com/magazine/content/07_13/b4027074.htm?chan=top+news_top+news+index_technology

MEDICAL DEVICES

Subcategory: Metabolism: Obesity, Diabetes

Novel Biosensor

University of Arkansas

08-Mar-07

Researchers have fabricated and tested a novel biosensor that detects glucose close to real time and with much greater sensitivity than other comparable, biocompatible sensors for managing diabetes.

<http://dailyheadlines.uark.edu/10338.htm>

NOVEL APPLICATIONS

Subcategory: Environment

Earthquakes and Bacteria

Sarah Everts

Chemical & Engineering News

19-Mar-07

Metabolic activity of *B. pasteurii* causes a local alkalization of the soil where it is present, resulting in the precipitation of calcium carbonate onto sand particles. Scientists hope to exploit to stabilize buildings and levees during earthquakes.

<http://pubs.acs.org/cen/newscrip/85/8512newscrip.html>

Subcategory: Miscellaneous

Silicon From Sea Life

Bethany Halford

Chemical & Engineering News

12-Mar-07

Scientists have developed a way to convert the unicellular algae's

intricate silica exoskeletons of diatoms into silicon without destroying their architectural design.

<http://pubs.acs.org/cen/news/85/i11/8511notw8.html>

PHARMACEUTICALS

Subcategory: Generics

FDA Cites Challenges of Generic Biotech

Matthew Perrone

Business Week

26-Mar-07

Reviews question of whether generic drug companies would have to conduct safety trials and the impact on pricing compared with their brand name counterparts.

<http://www.businessweek.com/ap/financialnews/D8O441NG0.htm>

Subcategory: Industry

Global Biotech Drug Market Grows by 17.9 Percent in 2006

Biologic Drug Report

26-Mar-07

U.S. growth in sales of biotech drugs, defined as drugs developed through recombinant technologies, grew by 20% in 2006 to \$40.3 billion. Biologic autoimmune agents grew at a 20% pace in 2006 to \$10.6

<http://www.biologicdrugreport.com/News/news-032607.htm>

PLATFORM TECHNOLOGIES

Subcategory: Cell Therapy

Stem Cell Signaling Mystery Solved

University of Southern California

19-Mar-07

A newly discovered small molecule called IQ-1 plays a key role in preventing embryonic stem cells from differentiating into one or more specific cell types, allowing them to instead continue growing and dividing indefinitely.

<http://www.usc.edu/usnews/stories/13586.html>

Subcategory: Evolution Research

Genetic Studies Endow Mice with New Color Vision

Bio.com

23-Mar-07

The new color vision abilities of the genetically engineered mice indicate that the mammalian brain possesses a flexibility that permits a nearly instantaneous upgrade in the complexity of color vision. Implications for sensory systems in general.

<http://www.bio.com/realm/research.jhtml?realmId=1&cid=27300036>

Subcategory: Genomics

Researchers Uncover Protection Mechanism of Radiation-resistant

Bio.com

20-Mar-07

Findings could influence how people are treated for exposure to chronic or acute doses of radiation, ways to protect cancer patients from the toxic effects of radiation therapy and efforts to contain toxic runoff from radioactive Cold War waste sites.

<http://www.bio.com/realm/research.jhtml?realmId=1&cid=27200036>

Made-To-Order Histones

Amanda Yarnell

Chemical & Engineering News

12-Mar-07

A new method to chemically synthesize methylated histone proteins will help biochemists figure out how these methyl marks control access to genomic DNA.

<http://pubs.acs.org/cen/news/85/i11/8511notw3.html>

Subcategory: Human Therapeutics

Light-activated Therapy Targets DNA Components

Bio.com

23-Mar-07

Researchers continuing to design light-activated molecular systems to attack cancer cells have introduced a DNA targeting component, which allows more selectivity and thus reduce damage to healthy tissue.

<http://www.bio.com/realm/research.jhtml?realmId=1&cid=27500001>

Subcategory: Imaging

Nanoparticles Can Track Cells Deep Within Living Organisms

Bio.com

29-Mar-07

Nanoparticles containing a fluorine-based compound can be detected by MRI scanners to track cells used in medical treatments because of their unique signatures.

<http://www.bio.com/realm/research.jhtml?realmId=5&cid=27400032>

Subcategory: Oncology

Drivers and Passengers on the Road to Cancer

Sanger Institute

07-Mar-07

Driver mutations cause cancer cells to grow, whereas passengers are co-travellers that make no contribution to cancer development.

Researchers identified possible driver mutations in 120 genes, most of which had not been seen before.

<http://www.sanger.ac.uk/Info/Press/2007/070307.shtml>

Subcategory: Proteomics

Penn Scientists Engineer Small Molecules to Probe Proteins Deep Inside Cell Membrane

Bio.com

30-Mar-07

Proteins are the targets of most drug molecules, but one-third of all proteins are membrane proteins which are embedded within the cell's fatty outer layer and difficult to investigate. Newly designed peptides are able to bind to these proteins.

<http://www.bio.com/realm/research.jhtml?realmId=2&cid=27600001>

Electron-Starved Enzyme

Celia Arnaud

Chemical & Engineering News

15-Mar-07

A new model of the active site of cytochrome c oxidase, a key enzyme in cellular respiration, allows scientists to study the enzyme under conditions where the flow of electrons is the limiting step, as it is in the natural enzyme.

<http://pubs.acs.org/cen/news/85/i12/8512notw4.html>

RESEARCH ADVANCEMENTS

Subcategory: Cardiology/ Vascular Diseases

Engineering the Heart Piece by Piece

University of Michigan

27-Mar-07

Scientists see great promise in cardiac tissue engineering, but say that hurdles remain before lab-grown muscle is ready for heart attack survivors, children born with defective heart valves and people with clogged or weak blood vessels.

<http://www.med.umich.edu/opm/newspage/2007/enginheart.htm>

Subcategory: Computing Systems

PlayStation 3 taking a Role in Alzheimer's Fight

Carrie Sturrock, Chronicle

San Francisco Chronicle

15-Mar-07

Staff Writer

Folding@home is a distributive computing project for conducting research on Alzheimer's disease. Want to help? Lend your PlayStation 3 to the project when not in use. Its processor can do certain calculations 20 times faster than a PC.

<http://www.sfgate.com/cgi-bin/article.cgi?f=/c/a/2007/03/15/BAGLTOL80T28.DTL>

Subcategory: Immunology/ Infectious Diseases

Snapshots Of A Membrane Protein

Stu Borman

Chemical & Engineering News

12-Mar-07

Antibiotic designers will get a boost from the first structural snapshots

of an enzyme involved in forming bacterial cell walls. The coveted structures will assist rational design of molecules that can hit this promising but as-yet-untapped target.

<http://pubs.acs.org/cen/news/85/i11/8511notw1.html>

Cannibalistic Signals Help Mammalian Embryos Develop Normally

Southwestern Medical

08-Mar-07

Autophagy is the way cells devour their own unwanted or damaged parts. Findings suggest that defects in autophagy might trigger autoimmune diseases and, if so, reversing the defects could potentially help treat such diseases.

<http://www8.utsouthwestern.edu/utsw/cda/dept37389/files/346412.html>

Subcategory: Miscellaneous

Study Shows Metabolic Strategy of Stressed Cell

Bio.com

23-Mar-07

Researchers have mapped out many of the dynamic genetic and biochemical changes that make up a cell's response to a shortage of a molecule called Coenzyme A (CoA), helping to understand how the body maintains health in normal, stressful environments.

<http://www.bio.com/realm/research.jhtml?realmId=1&cid=27300041>

Subcategory: Neurology

UAB Researchers Break New Ground On How Memory Works

University of Alabama at Birmingham

15-Mar-07

Researchers have discovered that gene methylation, a chemical reaction in cell DNA thought to be involved only in embryonic cell development and differentiation is also required for memory formation.

<http://main.uab.edu/show.asp?durki=106076>

Subcategory: Oncology

Researchers at IRB Barcelona discover a new mechanism that regulates stem cell division

Barcelona Institute of Research

05-Mar-07

Errors in stem cell division can give rise to tumors. The intracellular asymmetry of 2 functionally distinct centrosomes was found to be a decisive factor in the regulation of asymmetric stem cell division and prevents the proliferation of these cells.

<http://www.irbbarcelona.org/index.php/en/news-events/irb-news-events/researchers-at-irb-barcelona-discover-a-new-mechanism-that-regulates-stem-cell-division>

Study Reveals How Some Molecules Inhibit Growth of Lung Cancer

Dana Farber Cancer

12-Mar-07

Researchers used X-ray crystallography to determine the structure of 2 mutated forms of the epidermal growth factor receptor (EGFR) in lung

cancer cells. In some cases, the mutation that causes the cancer in the first place is also the cancer's inhibitor.

<http://www.dfc.harvard.edu/abo/news/press/2007/study-reveals-how-some-molecules-inhibit-growth-of-lung-cancer-cells.html>

Major Gene Study Uncovers Secrets of Leukemia

St Jude Children's Research Hospital

07-Mar-07

Researchers have discovered previously unsuspected mutations that contribute to the formation of pediatric acute lymphoblastic leukemia (ALL). Discovery also provides a roadmap for the identification of unsuspected mutations in adult cancers.

http://www.stjude.org/media/0.2561.453_2816_22694.00.html

A Small Molecule Derived from the Tumor-suppressor Gene Rb2/p130 Could Act as an Anti-cancer Therapeutic

Temple University

20-Mar-07

Fifteen years after discovering Rb2/p130, researchers discovered a 39 amino-acid-long sequence, Spa310, which can be easily reproduced as a biological drug in large quantities and does not require potentially dangerous means of delivery like viruses.

http://www.temple.edu/news_media/pm38.html

Protein Found to Shield Pancreatic Cancer Cells from Self-Destruction

University of Texas

20-Mar-07

Targeting the protein tissue transglutaminase (TG2) or its activating protein PKC, or both, presents a novel and potentially effective approach to treating patients with pancreatic cancer. Studies are still in early stages.

<http://www.mdanderson.org/departments/newsroom/display.cfm?id=6CFC30D0-AF42-4519-B7C5B3CD0FE6B1E1&method=displayFull&pn=00c8a30f-c468-11d4-80fb00508b603a14>

Subcategory: Proteomics

Linking Together The Origins Of Life

Sarah Everts

Chemical & Engineering News

19-Mar-07

Which came first, DNA or protein? Although DNA may provide a more durable means for storing genetic information, and proteins are more efficient catalysts, RNA can perform both of these tasks. Crystal structure supports RNA.

<http://pubs.acs.org/cen/news/85/i12/8512notw1.html>

RESEARCH TOOLS

Subcategory: Computing Systems

DOE JGI Releases Enhanced Genome Data Management System IMG 2.1

Bio.com

15-Mar-07

The U.S. Department of Energy Joint Genome Institute (DOE JGI) releases powerful computational tools for addressing challenges such as harvesting the potential of carbon-neutral bioenergy sources and coping with global climate change.

<http://www.bio.com/realm/research.jhtml?realmId=1&cid=27200012>

Subcategory: Databases

Scientist Develops New Mathematical Model To Study Disease Genetics And Evolution

Science Daily

22-Mar-07

A new mathematical model and its associated software bring much-needed rigor to evolutionary investigations of how natural selection acts on individual genes, may also aid the search for disease-associated genes within the human genome.

<http://www.sciencedaily.com/releases/2007/03/070319114440.htm>

Subcategory: Imaging

Individual Surface Atoms Identified

Ron Dagani

Chemical & Engineering News

05-Mar-07

Identifying different atoms on a surface has been accomplished for the first time at room temperature, using an atomic force microscope (AFM). The surface is scanned with the microscope's sharp, vibrating tip; frequency alterations allow mapping.

<http://pubs.acs.org/cen/news/85/i10/8510notw9.html>

Viral Armor

Sarah Everts

Chemical & Engineering News

05-Mar-07

Researchers have solved the first atomic-level X-ray structure of a virus's protective crystalline casing by plucking cypovirus's tiny crystalline home from the insect cells that the pathogen infects.

<http://pubs.acs.org/cen/news/85/i10/8510notw4.html>

Subcategory: Neurology

UF Launches Project to Bridge the Regeneration Gap

Bio.com

30-Mar-07

Scientists have initiated a project to treat human brain and other diseases by plundering the secrets of regeneration from creatures with remarkable powers of self-renewal, such as salamanders, newts, starfish and flatworms.

<http://www.bio.com/realm/research.jhtml?realmId=5&cid=27600002>

STRATEGIC RELATIONSHIPS

Subcategory: Proteomics

Unique Partnership Produces Life-critical 3D Structures

Bio.com

28-Mar-07

Most diseases are caused by malfunctions in the body's complex protein machinery. The next generation of drugs will be designed on the basis of 3D protein models that a collaboration of scientists are creating.

<http://www.bio.com/realms/research.jhtml?realmId=2&cid=27400014>

THERAPEUTIC CATEGORY

Subcategory: Cardiology/ Vascular Diseases

Higher Trans Fat Levels in Blood Associated With Elevated Risk of

Harvard University Gazette

27-Mar-07

A study has found that women in the U.S. with the highest levels of trans fat in their blood had 3 times the risk of coronary heart disease as those with the lowest levels, thus supporting efforts to remove trans fat from foods and restaurant meals.

<http://www.hsph.harvard.edu/news/press-releases/2007-releases/press03272007.html>

Subcategory: Metabolism: Obesity, Diabetes

Belly Fat May Drive Inflammatory Processes Associated with Disease

Washington University in St. Louis

08-Mar-07

Researchers have confirmed that fat cells inside the abdomen are secreting molecules that increase inflammation. It's the first evidence of a potential mechanistic link between abdominal fat and systemic inflammation.

<http://mednews.wustl.edu/tips/page/normal/8947.html>

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