



BioTechCircle News®

August 2007

Featured August article:

Fungus Infected Woman Who Died After Gene Therapy

A woman who had been generally healthy died 3 weeks after trillions of genetically engineered viruses were injected into her right knee in an experimental treatment for her rheumatoid arthritis.

<http://www.washingtonpost.com/wp-dyn/content/article/2007/08/16/AR2007081602322.html>

An unfortunate and possibly preventable situation, given that she was also taking conventional immune-suppressing drugs for arthritis, for many years and with no serious side effects.

In this articles section: links to 53 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: Environment

Plastic from Feathers

Virginia Tech

27-Aug-07

Researchers are investigating ways to create biodegradable plastics from agricultural byproducts — such as poultry feathers and eggs — that would be comparable to petroleum-based plastics.

http://www.vt.edu/spotlight/20070820_barone.php

BIOBUSINESS MANAGEMENT

Subcategory: Computing Systems

Software Decisions and Opportunity Costs

Paul Bleicher

Applied Clinical Trials

01-Aug-07

Bleicher discusses the pros and cons of using open source software instead of software from traditional sources; warns that the opportunity costs related to time spent may outweigh the benefit of free or minimal software price.

<http://www.actmagazine.com/appliedclinicaltrials/article/articleDetail.jsp?id=445943>

Relsys Enabling ‘Structured’ Signal Management

Deborah Borfitz

Bio-IT World

08-Aug-07

A “signal” is an event that is unexpected, serious, and occurs at a disproportionately high rate vis-à-vis comparable products on the market. Signal management is now being applied to mining adverse event data for signals of true drug safety problems.

<http://www.bio-itworld.com/newsitems/2007/august/08-08-07-els-relsys>

Subcategory: Government/ Approvals

The Hunt for Cancer Biomarkers

Alan Dove

Drug Discovery & Development

01-Aug-07

While the latest crop of genomics-based biomarkers and pharmacogenomic therapies is just starting to reach the clinic, regulators have been working hard to clarify the approval process for

them. Suggests meeting early with FDA officials.

<http://www.ddmag.com/ShowPR.aspx?PUBCODE=016&ACCT=1600000100&ISSUE=0708&RELTYPE=CVS&PRODCODE=00000000&PRODLETT=J>

Subcategory: Patent/Intellectual Property Issues

Patents: Patent Strategies for Biotechnology Enterprises

Wei Li, Xiang Yu

BioPharm International

01-Aug-07

A patent is an asset that can improve competitive advantage and boost profits, yet many biotech firms miss opportunities to take full strategic advantage of their patents, authors say.

<http://www.biopharminternational.com/biopharm/article/articleDetail.jsp?id=444984>

Stolen Identity

Peter Spellman

Drug Discovery & Development

01-Aug-07

According to the World Health Organization (WHO), more than 10% of global pharmaceutical sales (\$40 billion) is counterfeit. There are multiple "track and trace" technologies for protecting R&D investments from counterfeiting.

<http://www.ddmag.com/ShowPR.aspx?PUBCODE=090&ACCT=1600000100&ISSUE=0708&RELTYPE=BF&PRODCODE=00000000&PRODLETT=AQ>

Subcategory: Privacy/ Records Management

SAFE-BioPharma Spearheads Secure Digital Ids

Bio-IT World

28-Aug-07

SAFE (Signatures and Authentication For Everyone) is an enabling technology that allows members to submit electronic documents to regulatory agencies and to each other. The signatures on those documents can be trusted with 100% certainty.

<http://www.bio-itworld.com/newsitems/2007/august/08-28-07-els-safe-biopharma>

CONTRACT SERVICES

Subcategory: Biomanufacturing

China Today: Biopharmaceutical Exports

Eric Langer

BioPharm International

01-Aug-07

Biotechnology and pharmaceutical companies in China are considering converting excess capacity to contract manufacturing as part of their overall biopharmaceutical products strategy.

<http://www.biopharminternational.com/biopharm/article/articleDetail.jsp?id=444981>

DIAGNOSTIC TOOLS

Subcategory: Imaging

New Single-Molecule Detector

Prachi Patel-Predd

Technology Review

10-Jul-07

Using tiny silicon rings that trap and circulate light, researchers have made an ultrasensitive device that can detect single biomolecules. It does not require labeling the target molecules with fluorescent tags.

<http://www.technologyreview.com/Nanotech/19029/>

Subcategory: Monofluidics

Ten-Minute Cancer Test

Katherine Bourzac

Technology Review

21-Aug-07

Researchers are developing a microfluidics device that can identify cancer cells during a routine visit to the doctor's office. It works well on cancer cells grown in the lab and is currently being tested on biopsies from oral-cancer patients.

<http://www.technologyreview.com/Biotech/19274/>

Subcategory: Privacy/ Records Management

Do Not Ask or Do Not Answer?

Economist

23-Aug-07

Rapid advances in genetic testing promise to transform medicine, but they may up-end the insurance business in the process as concerns about genetic privacy continue.

http://www.economist.com/science/displaystory.cfm?story_id=9679893

DRUG DELIVERY

Subcategory: Nanotechnology

New Nanotoxicology Study Delivers Promising Results

Oak Ridge National Laboratory

17-Aug-07

Single-walled carbon nanohorns, a particular form of engineered carbon-based nanoparticles, may be useful for drug delivery and other commercial applications.

http://www.ornl.gov/info/press_releases/get_press_release.cfm?ReleaseNumber=mr20070817-01

INDUSTRY

Subcategory: Environment

Polluting China

Jean-François Tremblay

Chemical & Engineering News

27-Aug-07

Some big names in the chemical industry appear on a list of those cited

for water pollution in China.

<http://pubs.acs.org/cen/news/85/i35/8535notw5.html>

Nanotube Synthesis Emits Toxic By-Products

Rachel Petkewich

Chemical & Engineering News

27-Aug-07

The carbon nanotube industry is growing, but little is known about the by-products discharged during nanotube manufacturing. Evaluating small-scale processes could shed light on potential large-scale environmental issues.

<http://pubs.acs.org/cen/news/85/i35/8535news9.html>

Subcategory: General

ACS Focuses On Biotech For Health In Boston

Linda Raber

Chemical & Engineering News

27-Aug-07

More than half of the ACS technical divisions cooperated to present 50 symposia in support of the American Chemical Society's theme for its 234th national meeting, "Biotechnology for Health and Wellness."

<http://pubs.acs.org/cen/news/85/i35/8535notw1.html>

Subcategory: Patent/Intellectual Property Issues

India Patent Law Decision

Ann Thayer

Chemical & Engineering News

13-Aug-07

The High Court in Chennai, India, upholds the stipulation that new forms of a drug cannot be patented unless they improve efficacy.

<http://pubs.acs.org/cen/news/85/i33/8533notw9.html>

Subcategory: Proteomics

Structure Quality

Stu Borman

Chemical & Engineering News

20-Aug-07

A study of 14,518 crystal structures in the Protein Data Bank (PDB) reports what it calls "a striking result"—high-prestige journals tend to publish structures with more errors. Structural genomics centers are reportedly more accurate than other labs.

<http://pubs.acs.org/cen/news/85/i34/8534notw4.html>

INVESTMENTS/ GOV. SUPPORT

Subcategory: Geographic focus

**Biobank to Be Built in Saguenay, Que. To House 20,000 Samples from
Canada East**

21-Aug-07

The Quebec and Canadian governments are pooling their finances to build a new international Biobank in Saguenay, Que., which could help the region become a center for international genomics research.

<http://www.canadaeast.com/progress/article/53226>

Subcategory: Miscellaneous

Competitiveness Legislation

Glenn Hess and Jeff Johnson Chemical & Engineering News 13-Aug-07

Legislation increasing funding for math and science is largely based on recommendations in the National Academies' report "Rising Above the Gathering Storm: Energizing and Employing America for a Brighter Economic Future."

<http://pubs.acs.org/cen/news/85/i33/8533notw4.html>

NOVEL APPLICATIONS

Subcategory: Energy/ Fuel

It Looks Good on Paper

Economist 16-Aug-07

A battery has been made by mixing carbon nanotubes with cellulose; it works at temperatures from -80°C to 180°C , and can be rolled up, folded or cut like paper with no effect on its performance.

http://www.economist.com/science/displaystory.cfm?story_id=9645100

ORGANIZATIONS

Subcategory: Startups

Navigenics Enters Consumer Genomics Marketplace

Kevin Davies Bio-IT World 20-Aug-07

A start-up named Navigenics has just outlined its basic mission: to provide individualized genetic health profiles to help consumers "develop a plan for wellness and prevention."

<http://www.bio-itworld.com/newsitems/2007/august/08-20-07-navigenics>

PLATFORM TECHNOLOGIES

Subcategory: Biomanufacturing

Centering On Chirality

Ann M. Thayer Chemical & Engineering News 06-Aug-07

Chemists are finding asymmetric synthesis increasingly handy for making pharmaceutical compounds on a large scale.

<http://pubs.acs.org/cen/coverstory/85/8532cover.html>

Subcategory: Cell Therapy

Fungus Infected Woman Who Died After Gene Therapy

Washington Post

17-Aug-07

A woman who had been generally healthy died 3 weeks after trillions of genetically engineered viruses were injected into her right knee in an experimental treatment for her rheumatoid arthritis.

<http://www.washingtonpost.com/wp-dyn/content/article/2007/08/16/AR2007081602322.html>

Subcategory: Human Therapeutics

MIT Invents 'Lab on a Chip' to Automate Whole-animal Genetic and Drug Screens

MIT

20-Aug-07

A new "lab on a chip" can automatically treat, sort and image small animals like the 1-millimeter *C. elegans* worm, accelerating research and eliminating human error.

<http://web.mit.edu/newsoffice/2007/chip-0820.html>

Subcategory: Nanotechnology

Candlelight Dinners Work Differently for Nanotechnology

Nano Werk

23-Aug-07

Fluorescent carbon nanoparticles, developed and used as a biological probe without fluorescence dye labeling, are now prepared and isolated efficiently from a common carbon source, namely, candle soot.

<http://www.nanowerk.com/spotlight/spotid=2419.php>

Subcategory: Proteomics

'Evolved' Enzyme Has Unique Action

Stu Borman

Chemical & Engineering News

20-Aug-07

A new approach could create new types of enzymes that cleave and modify substrates in addition to linking them together, may aid basic research and speed the synthesis of drugs and other chemicals.

<http://pubs.acs.org/cen/news/85/i34/8534notw8.html>

RESEARCH ADVANCEMENTS

Subcategory: Disease Prevention

Selenium Doubles Up In Proteins

Carmen Drahl

Chemical & Engineering News

27-Aug-07

A selenium-selenium bond in naturally occurring proteins characterizes

the linkage's low redox potential and suggests that it might play a role in regulation of redox levels in cells.

<http://pubs.acs.org/cen/news/85/i35/8535notw10.html>

Subcategory: Geriatrics

The Enthusiast

David Ewing Duncan Technology Review 01-Sep-07

Resveratrol, a chemical found in red wine, extends life span in mice by up to 24% and in other animals, including flies and worms, by up to 59%. It may work by activating SIRT1, a gene thought to play a role in regulating life span in animals.

http://www.technologyreview.com/read_article.aspx?id=19172&ch=biotech

Subcategory: Immunology/ Infectious Diseases

Unique Enzyme Could Lead To Novel Antibiotics

Amanda Yarnell Chemical & Engineering 27-Aug-07

Recent efforts to characterize an unusual catalyst in the enzymatic assembly line dedicated to andrimid production could lead to new, improved analogs of this antibiotic, researchers report.

<http://pubs.acs.org/cen/news/85/i35/8535news10.html>

Mechanism Of Unusual Antibiotic

Celia Henry Arnaud Chemical & Engineering News 13-Aug-07

Crystal structures of lactivicin, a long-neglected antibiotic, may provide a starting point for more effective drugs against bacteria resistant to antibiotics such as penicillin.

<http://pubs.acs.org/cen/news/85/i33/8533news7.html>

Unifying Themes in Host Defense Effector Polypeptides

Los Angeles Biomedical Research Inst. 01-Sep-07

Antimicrobial peptides, kinocidins, polypeptide venoms and other molecules that were once thought to be distinct in form and function now appear to be members of an ancient family of host defense effectors.

http://www.labiomed.org/users/news/press/Molecular_Strategies.pdf

Researchers Watch Antibiotics, Bacteria Meet at Atomic Level

Ohio State University 01-Aug-07

Extremely powerful imaging techniques enable scientists to see, for the first time, exactly what happens between bacteria and antibiotics at the atomic level. May help improve current antibiotics and create new, higher-resistance antibiotics.

<http://researchnews.osu.edu/archive/antibio.htm>

Discovery May Help Defang Viruses

Penn State Live 28-Aug-07
Researchers may be able to tinker with a single amino acid of an enzyme that helps viruses multiply to render them harmless, which could pave the way for a fast and cheap method of making vaccines.
<http://live.psu.edu/story/25574>

Bacteria See the Light

The Scientist 23-Aug-07
Blue-light-sensing proteins unexpectedly help regulate virulence in at least one species of infectious bacteria, and the mechanism might prove common among other microbes, according to a study.
<http://www.the-scientist.com/news/home/53507/>

Subcategory: Neurology

Inside Every Girl Mouse Brain Is a Swaggering Boy Mouse

David Biello Scientific American 05-Aug-07
By either genetically shutting down or surgically removing female mice's ability to smell pheromones, scientists transformed them into aggressive, pelvic-thrusting mice without any significant rise in testosterone or other steroid hormones.
<http://www.sciam.com/article.cfm?articleID=2D685119-E7F2-99DF-3224E6A0EA1EE9A4&chanID=sa011>

Subcategory: Obstetrics/ Gynecology

Finding That One-in-a-Billion Error

Johns Hopkins Medicine 20-Aug-07
Errors in the genetic code can give rise to cancer and a host of other diseases, but finding these errors can be difficult. Scientists have discovered how the tiny protein machines in cells, tasked to search for genetic damage, recognize DNA errors.
<http://www.jhu.edu/~gazette/2007/20aug07/20billion.html>

Subcategory: Oncology

One Pill, Many Uses

Lisa M. Jarvis Chemical & Engineering News 20-Aug-07
Small molecules blocking the Met receptor, a tyrosine-kinase receptor that is implicated in many cancers, could have an impact on a wide range of cancers. See also <http://pubs.acs.org/cen/coverstory/85/8534cover2.html>.
<http://pubs.acs.org/cen/coverstory/85/8534cover.html>

Reactivating a Critical Gene Lost in Kidney Cancer Reduces Tumor

Mayo Clinic 15-Aug-07
A key gene is often "silenced" in clear cell renal cell carcinoma, the most common type of kidney cancer; when scientists restored that

gene in human kidney cancer cells in culture and animal experiments, tumors stopped growing and many disappeared.

<http://www.mayoclinic.org/news2007-jax/4197.html>

Flip of Genetic Switch Causes Cancers in Mice to Self-destruct, Stanford Researchers Find

Stanford School of Medicine

30-Jul-07

A new study in mice shows that switching off a single malfunctioning gene can halt the limitless division of tumor cells and turn them back to the path of their own planned obsolescence.

http://med.stanford.edu/news_releases/2007/july/senescence.html

More-Accurate Cancer Treatment

Katherine Bourzac

Technology Review

02-Aug-07

Researchers have developed a computer model that addresses the problem of patients with the same type of cancer not responding to therapy in the same way by using genetic analysis of tumors to predict which therapy regimen will do patients the most good.

<http://www.technologyreview.com/Biotech/19135/>

RESEARCH TOOLS

Subcategory: Bioterrorism

Tool Time

Marc S. Reisch

Chemical & Engineering News

13-Aug-07

Instrument companies are working to design simple-to-operate, portable, affordable devices to identify threats or ensure safety.

<http://pubs.acs.org/cen/business/85/8533bus1.html>

Subcategory: Computing Systems

Modeling in the Life Sciences Pushes Into New Areas

R & D Magazine

01-Aug-07

Life science modeling is going beyond the traditional applications and practitioners to include wide-ranging medical contingencies, like pandemics and natural immunities. Reviews a software-based and an experimental modeling system.

<http://www.rdmag.com/ShowPR.aspx?PUBCODE=014&ACCT=1400000100&ISSUE=0707&RELTYPE=FE&PRODCODE=00000000&PRODLETT=T>

I.B.M. Near Supercomputer Contract

JOHN MARKOFF

The New York Times

06-Aug-07

Discusses a contract for the first supercomputer capable of one thousand trillion mathematical operations a second, a computing benchmark known as a petaflop. Use will be for "Grand Challenge" science projects, like

simulating the impact of global warming.

<http://www.nytimes.com/2007/08/06/technology/06ibm.html?ex=1344052800&en=908f184692ac7665&ei=5089&partner=rssyahoo&emc=rss>

Subcategory: Gene Sequences

Where Broken DNA Is Repaired

Science Daily

06-Aug-07

By comparing computer models of damaged human DNA with microscopic images of human cells that reveal focal sites of radiation-induced damage, researchers have found evidence that there are specific regions where broken DNA is concentrated for repair.

<http://www.sciencedaily.com/releases/2007/08/070803085225.htm>

Subcategory: Imaging

In Living Color

Celia Arnaud

Chemical & Engineering News

20-Aug-07

Researchers have demonstrated multicolor with fluorescent imaging techniques such as STORM and PALM. Multicolor imaging would allow researchers to look at many different cellular components at the same time.

<http://pubs.acs.org/cen/news/85/i34/8534notw3.html>

Picture This

Neil Canavan

Drug Discovery & Development

01-Aug-07

Molecular imaging, as a collection of biological tools, strategies, and hardware/software, has become very useful for drug discovery.

<http://www.ddmag.com/ShowPR.aspx?PUBCODE=090&ACCT=160000100&ISSUE=0708&RELTYPE=DIS&PRODCODE=00000000&PRODLETT=L>

New Red Fluorescent Protein a Glowing Success

Howard Hughes Medical Institute

26-Aug-07

Katushka, a new red fluorescent protein—derived from a brilliant red sea anemone purchased in a Moscow pet shop—can reveal body tissues more vividly than other fluorescent proteins in use today.

<http://www.hhmi.org/news/redprotein20070826.html>

Cells, Live and in 3-D

Katherine Bourzac

Technology Review

13-Aug-07

Scientists have invented a way to look at cells that are still alive, in 3 dimensions. Technique can be used to identify cancer early by showing changes that occur during cancer.

<http://www.technologyreview.com/Biotech/19227/>

Subcategory: Miscellaneous

Scientists Get a YouTube of Their Own

The Chronicle of Higher Education 21-Aug-07

A site called SciVee will allow scientists to upload highly technical papers. But it will also let the researchers post accompanying video presentations that serve as quicker, more approachable guides to their work.

<http://chronicle.com/wiredcampus/index.php?id=2323>

Subcategory: Monofluidics

Viewing Bacterial Dark Matter

Katherine Bourzac Technology Review 26-Jul-07

Describes a microfluidic device that microbiologists can use to pick a single cell from a sample and prepare its genome for sequencing. Overcomes the difficulty of creating a pure sample of a single bacterial cell's genome large enough to sequence.

<http://www.technologyreview.com/Biotech/19103/>

STRATEGIC RELATIONSHIPS

Subcategory: Computing Systems

IBM and Sun Team on Solaris Deal

Salvatore Salamone Bio-IT World 24-Aug-07

There is a relatively large installed base of life sciences applications (both custom and commercial) that run on Sun Microsystems' Solaris operating system. Describes Sun-IBM deal whereby IBM will sell the Solaris OS to run on select IBM servers.

<http://www.bio-itworld.com/newsitems/2007/august/08-24-07-solaris>

THERAPEUTIC CATEGORY

Subcategory: Disease Prevention

New Mechanism for Antioxidant Activity Found

Clemson University 20-Aug-07

Studies have shown antioxidants that occurring naturally in fruits, vegetables, green tea, garlic and onions can be effective at preventing DNA damage linked to Cancer, cardiovascular diseases, Parkinson's and Alzheimer's.

<http://www.clemson.edu/newsroom/articles/top-stories/antioxidantmechanism.php5>

Subcategory: Immunology/ Infectious Diseases

No-iron Rations

Economist 02-Aug-07

The future of disease control may lie not in better antibiotics but in cutting off the supply of nutrients to the pathogens by manipulating a

patient's diet: there might be nutrients which the patient could do without but the pathogen could not.

http://www.economist.com/science/displaystory.cfm?story_id=9581325

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