



BioTechCircle News®

July 2010

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In this articles section: links to 63 free Web articles in 12 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:

Agri-Biotech (8 articles) – Page 1
Biobusiness Management (6 articles) – Page 3
Diagnostic Tools (1 article) – Page 4
Drug Delivery (2 articles) – Page 5
Industry (4 articles) – Page 5
Novel Applications (2 articles) – Page 6
Organizations (4 articles) – Page 6
Personalized Medicine (2 articles) – Page 7
Platform Technologies (10 articles) – Page 8
Research Advancements (17 articles) – Page 10
Research Tools (6 articles) – Page 13
Strategic Relationships (1 article) – Page 15

For a brief explanation of how we categorize the articles, please see "Express Guide to Monthly Web Articles at: http://www.techmanage.net/expressguide_articles

AGRI-BIOTECH

Ed Hayward

Boston College

30-Jun-10

A cluster of carbon nanotubes coated with a thin layer of protein-recognizing polymer form a biosensor that uses electrochemical signals to detect minute amounts of proteins. Potential new diagnostic tool for the detection of a range of illnesses.

http://www.bc.edu/offices/pubaf/news/Biosensor2010_0628.html

DRUG DELIVERY

Subcategory: Nanotechnology

Scientists Design New Delivery Device for Gene Therapy

The Ohio State University

06-Jul-10

A nanoparticle non-viral vector is able to deliver DNA deeply enough into a cell to allow genetic material to be activated, a critical step in gene therapy. This vector is between 2 ½ and 10 times more effective than other experimental materials.

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

Subcategory: Proteomics

Supercharged Proteins Enter Biology's Forbidden Zone

Biology News

14-Jul-10

Proteins attached to molecules of "supercharged" green fluorescent protein that is given a very high positive charge can deliver drugs to cell interior. The hybrid proteins get pulled inside cells by negatively charged molecules called proteoglycans.

http://www.biologynews.net/archives/2010/07/14/supercharged_proteins_enter_biology_forbidden_zone.html

INDUSTRY

Subcategory: Bioethics

Replicating Success; Academic Fraud in China

Economist

22-Jul-10

Poor peer-review mechanisms, misguided incentives and a lack of checks on academic behavior all allow fraud to be more common in China than elsewhere. Discusses implications of China's widespread academic misconduct. Comments interesting as well.

<http://www.economist.com/node/16646212>

A New European Code of Conduct for Research Integrity

European Science

20-Jul-10

New European Code of Conduct for Research Integrity offers a reference point for all researchers, complementing existing codes of ethics,

Subcategory: Academia/Laboratories

Expanding Safety Training

Jyllian N. Kemsley Chemical & Engineering News 28-Jun-10

Approved undergraduate chemistry programs should promote a safety-conscious culture in which students understand the concepts of safe laboratory practices and how to apply them, new guidelines say. Also cover disposal techniques, emergency processes.

<http://pubs.acs.org/cen/coverstory/88/8826cover.html>

Best Places to Work 2010: Academia - Top 10 International Academic Institutions

The Scientist 01-Jul-10

Pie chart segments data on "Best Places to Work 2010: Academia" for institution type by gender: government, research institute, hospital, medical school, university, other. Charts on time in current position, area of work responsibility.

<http://www.the-scientist.com/fragments/bptw/2010/academia/bptw-academia-charts.jsp>

Best Places to Work 2010: Academia - Top 40 US Institutions

The Scientist 01-Jul-10

List with interactive ranking for 2009 and 2010 values of strengths and weaknesses. Princeton ranks first in both years.

<http://www.the-scientist.com/fragments/bptw/2010/academia/bptw-academia-top30.jsp>

Subcategory: Oncology

Pedagogy On Platinum Drugs

Ann Thayer Chemical & Engineering News 28-Jun-10

Thayer provides a descriptive timeline of platinum-based drugs, from a 1965 report on the effect of platinum on bacteria through loss of Oxaliplatin patent protection in 2013.

<http://pubs.acs.org/cen/business/88/8826bus1c.html>

PERSONALIZED MEDICINE

Subcategory: Oncology

Cancer Stem Cells are Not One Size Fits All, Lung Cancer Models Show

Children's Hospital Boston 01-Jul-10

Cancer stem cells vary from tumor to tumor, according to tumor's genetic signature. Researchers may combine stem cell biology with genetic typing to identify what drives cancerous behavior of each patient's tumor, develop new therapeutic targets.

<http://www.childrenshospital.org/newsroom/Site1339/mainpageS1339P1sublevel640.html>

Fine-tuning Cancer Treatments

To Fight Drug-Resistant MRSA, Algorithm Predicts Bacteria's Future
Tech News Ninja 20-Jul-10

Algorithm helps researchers find DHFR mutation candidates able to block new antibiotics. Knowledge could be incorporated into drug-design strategy: anticipate how bacteria would mutate to fight antibiotics, design antibiotics around predicted mutations.

<http://technewsninja.com/2010/07/to-fight-drug-resistant-mrsa-algorithm-predicts-bacterias-future-mutations/>

Vitamin B3 as a Novel Approach to Treat Fungal Infections
University of Montreal 08-Jul-10

C. albicans yeast is the leading cause of hospital-acquired infections; has high mortality rates. Enzyme Hst3 is essential to its growth, survival. Inhibition of Hst3 with nicotinamide, a form of vitamin B3, strongly reduced yeast's virulence in mice.

http://www.irc.umontreal.ca/PR_Raymond_NatureMed_Juillet10_EN.htm

How Cranberry Juice Fights Bacteria at the Molecular Level
Wocester Polytechnic Institute 15-Jul-10

Mechanical forces involved in the attachment of the virulent E. coli to human urinary tract cells are measured, shows how the attachment force is reduced in the presence of cranberry juice. May lead to new drugs, infection-resistant medical devices.

<http://www.wpi.edu/news/20101/2010cran.html>

Subcategory: Miscellaneous

Top 7 From F1000
The Scientist 01-Jul-10

Briefly describes the top 7 advances compiled by Facility of 1000 Biology, designating itself as "the expert guide to the most important advances in biology."

<http://www.the-scientist.com/2010/7/1/24/1/>

Subcategory: Neurology

In the Brain, Many Genes Biased Toward One Parent's Influence
Howard Hughes Medical Institute 08-Jul-10

For more than 1,300 genes active in the brain, there is a significant bias for which copy is active: from the mother or from the father. Bias may shift through the animal's life, may differ depending on the region of the brain, whether male or female.

<http://www.hhmi.org/news/dulac20100708.html>

Popular Target of Experimental Drugs Boosts Memory, Too
Howard Hughes Medical Institute 11-Jul-10

SIRT1, a protein already a target of research drugs to extend life, is now known to play a key role in learning, memory; target for neurological

disorders that include cognitive impairments. See also

<http://web.mit.edu/newsoffice/2010/sirtuins-0714>

<http://www.hhmi.org/news/tsai20100711.html>

Mount Sinai Study Shows That Major Alzheimer's Risk Gene Causes Alterations in Shapes of Brain Protein Deposits

Mount Sinai School of Medicine

14-Jul-10

Describes a newly discovered class of biomarkers to determine if the shape of brain protein deposits is different in people with Alzheimer's who have the highest-risk gene type than in those with the condition who have a neutral risk gene type.

<http://www.mssm.edu/about-us/news-and-events/mount-sinai-study-shows-that-major-alzheimers-risk-gene-causes-alterations-in-shapes-of-brain-protein-deposits>

Single Gene Could Be Key to a Baby's First Breath

Catherine de Lange

New Scientist

23-Jul-10

Teashirt 3 gene (Tshz3) seems to be essential for a key component of the complex neural networks that regulate breathing. Finding may permit development of diagnostic tests, therapeutic interventions for sudden infant death syndrome and sleep apnea. <http://www.newscientist.com/article/dn19218-single-gene-could-be-key-to-a-babys-first-breath.html>

Brain Training Improves Visual Memory

University of California San Francisco

14-Jul-10

Practicing simple visual tasks can improve the accuracy of short-term, or "working" visual memory. Other interventions might further improve brain function in aging people, the scientists say.

<http://www.universityofcalifornia.edu/news/article/23714>

Subcategory: Obstetrics/ Gynecology

Delivery Method Influences Microbial Communities in Newborns

Howard Hughes Medical Institute

29-Jun-10

Babies delivered via Cesarean section harbor a different ecosystem of bacteria than babies born vaginally. Could be why C-section babies experience higher rates of allergies, asthma, and infections with methicillin-resistant Staphylococcus aureus.

<http://www.hhmi.org/news/knight20100629.html>

Male Fetuses Ignore Their Stressed-out Mothers

Wendy Zukerman

New Scientist

20-Jul-10

Male fetuses ignore their mothers' response to stress, continue to grow; females are very sensitive to it. As smaller fetus copes better with adversity in the womb, the finding could lead to better treatments for male fetuses at risk of premature birth.

<http://www.newscientist.com/article/dn19195-male-fetuses-ignore-their-stressedout-mothers.html>

Subcategory: Oncology

Mechanism for Link Between High Fat Diet and Risk of Prostate Cancer and Disorders Unveiled

Science Daily

16-Jul-10

A high fat diet results in activation of NF- κ B (nuclear factor kappa B) in the abdominal cavity, thymus, spleen, and prostate. Can lead to benign prostatic hyperplasia, prostatitis, and cancer of the prostate.

<http://www.sciencedaily.com/releases/2010/07/100714151751.htm>

Subcategory: Ophthalmology

Gene Therapy for Eye Diseases

Karen Weintraub

Technology Review

15-Jul-10

Eyes have been an early target for gene therapy because they are small: they require relatively little active dose, they are self-contained, and because the tools of eye surgery have advanced enough to make the treatments possible.

<http://www.technologyreview.com/biomedicine/25810/>

Subcategory: Wound/Tissue Repair

Brookhaven Lab and BioSET, Inc., Patent Improved Growth Factor

Brookhaven National Laboratory

13-Jul-10

Describes 2nd-generation technology for designing synthetic peptides that are important for tissue regeneration. These bioactive peptides are designed to communicate growth signals to cells of damaged tissue in order to foster efficient, rapid healing.

http://www.bnl.gov/bnlweb/pubaf/pr/PR_display.asp?prID=1158&template=Today

RESEARCH TOOLS

Subcategory: Computing Systems

Computer Automatically Deciphers Ancient Language

MIT News

30-Jun-10

In addition to helping archeologists decipher the eight or so ancient languages that have so far resisted their efforts, computer system could also help expand the number of languages that automated translation systems like Google Translate can handle.

<http://web.mit.edu/newsoffice/2010/ugaritic-barzilay-0630>

Cell Signaling Classification System Gives Researchers New Tool

R & D Magazine

06-Jul-10

Describes how knowledge of biological systems that allow bacteria to navigate in the environment can be derived by computational interrogation of genomic sequences. The results have implications for areas ranging

from medicine to bioenergy.

<http://www.rdmag.com/News/2010/07/Information-Tech-Biotechnology-Cell-signaling-classification-system-gives-researchers-new-tool/>

Subcategory: Evolution Research

Frog Species Are Hopping Into Extinction Before They're Even Discovered

Andrew Moseman

Discover

20-Jul-10

Scientists tested the DNA of the amphibians they studied, identifying 11 new species that had escaped notice because of their striking physical resemblance to other species. However, 5 of the newly discovered amphibians are already extinct in the area.

<http://blogs.discovermagazine.com/80beats/2010/07/20/frog-species-are-hopping-into-extinction-before-theyre-even-discovered/>

Subcategory: Genomics

Genetic Tests Get Bad Grades

Emily Singer

Technology Review

23-Jul-10

Lawmakers and direct-to-consumer genetic testing companies maintain that genetic testing has a strong potential future in medicine, despite evidence that 10 of the 15 companies engaged in fraudulent or deceptive marketing.

<http://www.technologyreview.com/biomedicine/25853/>

Subcategory: Imaging

Energy Secretary Chu Advances Nano Science in Spare Time

Seth Borenstein

R & D Magazine

08-Jul-10

Describes Energy Secretary's system for optical microscopes, using existing technology, to see objects such as molecules, parts of cells as small as half a nanometer (the distance separating molecules). It's result of Dr. Chu's version of "vegging out."

<http://www.rdmag.com/News/2010/07/Information-Tech-Nanotechnology-Energy-Secretary-Chu-advances-nano-science-in-spare-time/>

Subcategory: Lab-on-a-chip/ DNA Chips/

Nanosopic Beads to Speed Up Drug Discovery

Drug Discovery & Development

16-Jul-10

Lab-on-Bead uses tiny beads studded with "pins" that match a drug to a disease marker in one step; an infinite number of prospects for treatments can be tested all at once. May speed drug discovery by 10,000, cutting out years of testing and re-testing.

<http://www.ddmag.com/news-Nanosopic-Beads-to-Speed-Up-Drug-Discovery-71510.aspx>

STRATEGIC RELATIONSHIPS

Subcategory: Oncology

Collaboration Yielded A New Class Of Cancer Drugs

Ann Thayer

Chemical & Engineering News

28-Jul-10

Thayer provides historical background on how an academic research institute, metals producer, and a pharmaceutical firm created next-generation platinum compounds for inhibiting cell division in cancer cells that have fewer toxic side effects.

<http://pubs.acs.org/cen/business/88/8826bus1b.html>

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