



BioTechCircle News®

January 2010

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In this articles section: links to 62 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.

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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

<http://newscenter.lbl.gov/news-releases/2010/01/27/microbes-produce-biofuels/>

Boeing's Biofuel-Powered Hydroplane

Joel Hans

IMPO

04-Feb-10

Boeing's racing hydroplane uses a 50/50 blend of sustainable biofuel and jetfuel, and while the eco-friendly fuel costs a bit more, Boeing is sure that once more people adopt the technology, prices will plummet. Video.

<http://www.impomag.com/scripts/ShowPR~RID~13093.asp?wnnvz=1745.01290039784>

Fundamentals of a Sustainable U.S. Biofuels Policy

James Baker Institute

14-Jan-10

Is ethanol a green fuel or just greenwash? Links to downloadable PDF files: "Policy Report 43: Fundamentals of a Sustainable U.S. Biofuels Policy" and the research paper "Fundamentals of a Sustainable U.S. Biofuels Policy."

<http://www.bakerinstitute.org/news/the-fundamentals-of-a-sustainable-u.s.-biofuels-policy>

BIOBUSINESS MANAGEMENT

Subcategory: Miscellaneous

Tech Sector Expected To Recover In 2010

Barbara Ortutay

Manufacturing.net

12-Jan-10

The tech downturn is over and a recovery is on the way after a "dismal" 2009, as companies resume spending on computers and software, according to Forrester, Gartner, IDC analyses.

<http://www.manufacturing.net/article.aspx?id=235410&wnnvz=1750.01276921985>

Subcategory: Patent/Intellectual Property Issues

Patent Rankings Out, US. Performance Ticks up

R & D Magazine

12-Jan-10

The 2009 Top Patentees analysis by Thomson Reuters shows an increase in patent activity by U.S. firms. IBM is joined by an increasingly larger number of U.S.-based companies in the list of top 25 patent assignees.

<http://www.rdmag.com/News/2010/01/Policy-and-Industry-Patent-rankings-out-US-performance-ticks-up/?wnnvz=1737.01277131314>

Table of top 25 firms.

Subcategory: Personalized Medicine

Making Personalized Medicine Pay

John Carey

Business Week

21-Jan-10

Personalized drug treatments appears more realistic as pharmacy benefit managers (PBMs) such as Medco and CVS Caremark (CVS) have entered the market. Patients want to get the right drug, and payers are willing to pay if they get a benefit.

DRUG DELIVERY

Subcategory: Ophthalmic

Researchers Develop New Tool for Gene Delivery

Newswise

27-Jan-10

A peptide called PEG-POD provides a vehicle for therapeutic genes and may help researchers develop therapies for degenerative eye disorders such as retinitis pigmentosa and age-related macular degeneration.

<http://www.newswise.com/articles/researchers-develop-new-tool-for-gene-delivery>

Subcategory: Topical

Fake Skin Patches Could Deliver Helpful Genes

Jessica Hamzelou

New Scientist

11-Jan-10

Gene for atrial natriuretic peptide (ANP), naturally released by cells in the heart, was introduced into cultured fibroblasts and keratinocytes (principal cells of skin) and grafted the skin onto backs of mice, effectively reducing blood pressure.

<http://www.newscientist.com/article/dn18368-fake-skin-patches-could-deliver-helpful-genes.html>

INDUSTRY

Subcategory: Environment

Climate Change Authority Admits Mistake

Kevin Bullis

Technology Review

21-Jan-10

Bullis describes how erroneous conclusions on the impact of global warming were published by the Intergovernmental Panel on Climate Change (IPCC), a widely respected organization established by the United Nations; reports on recommended process changes.

<http://www.technologyreview.com/business/24389/>

Subcategory: Forensics

Fake Pharmaceuticals

Sarah Everts

Chemical & Engineering News

04-Jan-10

Describes drug counterfeiter tactics and the efforts of international police, pharmaceutical companies, customs officials, scientists, and health and regulatory agencies as they collaborate to track down fake medicines and those who profit from them.

<http://pubs.acs.org/cen/science/88/8801sci1.html>

Subcategory: Miscellaneous

Describes a crucial step in creating genetic sensors that might one day provide humans with advance information about temperature, poisons and other potential hazards in the environment by monitoring changes in a bacterium's blinking rates. Video.

<http://ucsdnews.ucsd.edu/newsrel/science/01-10GeneticClock.asp>

Subcategory: Nanotechnology

Stopping Bacterial Infections with Biochemical 'Nanofactories' Instead of Antibiotics

Nano Werk 27-Jan-10

New research shows bacterial infections could be prevented by using tiny biochemical machines, nanofactories, that can confuse bacteria and stop them from spreading, without the use of antibiotics.

<http://www.nanowerk.com/news/newsid=14552.php>

Subcategory: Proteomics

Crash-Test Reveals DNA Traffic Control

Michael E. O'Donnel Howard Hughes Medical Institute 29-Jan-10

Research reveals new details about the “rules of the road” that help ensure that cells make accurate copies of their genetic material, which is essential for producing healthy new cells.

<http://www.hhmi.org/news/odonnell20100129.html>

In New Way to Edit DNA, Hope for Treating Disease

Nicholas Wade The New York Times 28-Dec-09

Wade describes the zinc finger approach, a powerful new technique for editing the genetic text, which could provide a general method for generating new crop plants, treating many human diseases, and even making inheritable changes in human sperm or eggs.

http://www.nytimes.com/2009/12/29/health/research/29zinc.html?_r=1

Interactive Feature: Molecular Origami

Wyss Institute 28-Jan-10

Scientists have built complex, 3-D structures out of DNA. Tiny forms of artificially folded DNA could be used as cogs in a machine for molecular manufacturing, optical reporters for bioimaging, or carriers for delivery of cancer drugs deep inside the body.

<http://wyss.harvard.edu/viewpage/m-o/interactive-feature-molecular-origami>

Subcategory: Virology

I, Virus: Why You're Only Half Human

Frank Ryan New Scientist 29-Jan-10

The virus-like components of the human genome amount to almost half of our DNA. Ryan explores the questions: How does this viral DNA come to

be there? What role has it played in our evolution, and what is it doing to our physiology.

<http://www.newscientist.com/article/mg20527451.200-i-virus-why-youre-only-half-human.html>

RESEARCH ADVANCEMENTS

Subcategory: Geriatrics

Young Blood Reverses Signs of Aging in Old Mice

Emily Singer

Technology Review

27-Jan-10

An unspecified factor in the blood of young mice can reverse signs of aging in the circulatory system of older ones. Finding provides hope that some aspects of aging, such as the age-related decline in the ability to fight infection, might be avoidable.

<http://www.technologyreview.com/biomedicine/24421/page1/>

Subcategory: Immunology/ Infectious Diseases

New Vaccine Method Is Cheaper and More Effective

Krishna Ramanujan

Cornell University

25-Jan-10

Researchers substitute aluminum hydroxide with a new adjuvant called ClyA, which can be produced and fused with any desired protein within genetically engineered Escherichia coli bacteria. A simple centrifuge is used for purification, reducing costs.

<http://www.news.cornell.edu/stories/Jan10/VaccineDelivery.html>

The Maverick Bacterium

Pascale Cossart

The Scientist

01-Jan-10

Once Listeria enters a cell, it surrounds itself with the host cell's actin proteins and bursts through the plasma membranes directly into the neighboring cell, thus avoiding extracellular space and triggering the host's immune system.

<http://www.the-scientist.com/2010/1/1/38/1/>

Researchers Trace HIV Mutations that Lead to Drug Resistance

Susan Brown

University of California San Diego

11-Jan-10

Researchers compared sequences of HIV taken from patients treated with specific drugs to those from untreated patients. Using a statistics screen, they identified clusters of mutations that seemed to be working together to help the virus escape treatment.

<http://ucsdnews.ucsd.edu/newsrel/science/01-10HIV.asp>

Viruses 'Can Spread Faster than Previously Thought'

Wellcome Trust

22-Jan-10

Some viruses could spread faster than previously thought, causing the host cell to push out tentacle-like projections that drive the virus particles

away and towards other cells that they can infect. Could provide new targets for antiviral drugs. Videos.

<http://www.wellcome.ac.uk/News/2010/News/WTX058283.htm>

Subcategory: Miscellaneous

Haste Makes Waste: Cutting Speed Boosts Drivers' Life Expectancy

R & D Magazine

01-Feb-10

Every hour spent behind the wheel represents a 20-minute loss in life expectancy because of the risk of being involved in a fatal motor vehicle accident. Researchers calculate that even a slight reduction in speed by the average driver could save lives.

<http://www.rdmag.com/News/FeedsAP/2010/02/life-sciences-haste-makes-waste-cutting-speed-boosts-drivers-life/>

Subcategory: Neurology

The Comedy Circuit: When Your Brain Gets the Joke

Daniel Elkan

New Scientist

01-Feb-10

Jokes activate regions of the frontal, cingulate cortex (linked with association formation, learning, decision-making) and the anterior cingulate cortex and the frontoinsula cortex, only present in humans and in less developed form, in great apes.

<http://www.newscientist.com/article/mg20527451.400-the-comedy-circuit-when-your-brain-gets-the-joke.html>

Subcategory: Oncology

First Cancer Genome Sequences Reveal How Mutations Lead to Disease

Ian Sample

Guardian.Co. UK

16-Dec-09

By comparing the genetic makeup of diseased and healthy cells from 2 men with cancer, scientists created catalogs of all the mutations found only in the cancerous tissues. 23,000 mutations were exclusive to the diseased cells of the lung cancer patient.

<http://www.guardian.co.uk/science/2009/dec/16/cancer-genome-sequences-genetic-mutations>

Giving Cells a Fresh Start

Yi Zhang

Howard Hughes Medical Institute

06-Jan-10

Thought to help genetically reprogram fertilized eggs as part of normal development, an enzyme that can effectively wipe a cell's developmental slate clean may help scientists create stem cells and arrest the growth of cancers.

<http://www.hhmi.org/news/zhang20100106.html>

Mutations in Different Cells Cooperate to Set the Stage for Cancer

Tian Xu

Howard Hughes Medical Institute

13-Jan-10

Distinct cancer-causing mutations in neighboring cells have been shown to

cooperate to produce tumors. Stress can help tumor development by activating the JNK stress signaling process, which is activated when tissues are wounded or inflamed.

<http://www.hhmi.org/news/xu20100113.html>

Cancer Cells Co-opt Fat Metabolism Pathway to Become More Malignant

Keith McKeown

Scripps Research Institute

05-Jan-10

An enzyme that normally helps break down stored fats has been found to go into overdrive in some cancer cells, making them more malignant. Suggests an explanation for the reported link between obesity and cancer. May provide a new target for treatment.

<http://www.scripps.edu/news/press/20100107.html>

Monitoring Cell Death Could Help Cancer Treatment

Lauren Gravitz

Technology Review

01-Feb-10

An imaging marker, used with PET scans, indicates the presence of dying cells. Technique drastically speeds up the process of determining whether a treatment is unsuccessful, thus allowing oncologists to prescribe a new course of action more quickly.

<http://www.technologyreview.com/biomedicine/24435/>

Subcategory: Ophthalmology

Double Agent Cells Impact Vision

Laboratory Equipment

03-Feb-10

Scientists have identified a double agent in the eye that, once triggered, can morph from neuron protector to neuron killer. Discovery has significant health implications since the neurons killed through this process results in vision loss and blindness.

<http://www.laboratoryequipment.com/News-double-agent-cells-protect-vision-020310.aspx>

Subcategory: Rheumatology

UW-Madison Scientists Create Super-strong Collagen

Nicole Miller

University of Wisconsin

11-Jan-10

Scientists create the strongest form of collagen known to science, a stable alternative to human collagen that could one day be used to treat arthritis and other conditions that result from collagen defects.

<http://www.news.wisc.edu/17525>

RESEARCH TOOLS

Subcategory: Computing Systems

Biology and the Foundations of Information Theory

TS-Si News Service

30-Jan-10

There are applications for information theory in many areas, including neurobiology, the evolution and function of molecular codes, model selection, statistical inference, and other scientific disciplines. Reviews pioneering work in information coding.

<http://ts-si.org/horizons/22499-biology-and-the-foundations-of-information-theory.html>

Subcategory: Evolution Research

Y Chromosomes Evolving Rapidly

Anne Trafton MIT News 14-Jan-10

Research findings comparing human and chimpanzee Y chromosome sequences offer the first evidence that a Y chromosome as evolutionarily old as the human Y is in fact still evolving.

<http://web.mit.edu/newsoffice/2010/y-chromosome-0114.html>

Horizontal and Vertical: the Evolution of Evolution

Mark Buchanan New Scientist 26-Jan-10

At the root of a new idea on evolution is overwhelming recent evidence for horizontal gene transfer, in which organisms acquire genetic material "horizontally" from other organisms around them, rather than vertically from their parents or ancestors.

<http://www.newscientist.com/article/mg20527441.500-horizontal-and-vertical-the-evolution-of-evoluti>

Scripps Research Scientists in Florida Show "Lifeless" Prions Capable of Evolutionary Change and Adaptation

Keith McKeown Scripps Research Institute 30-Dec-09

Prions can develop large numbers of mutations at the protein level; through natural selection these mutations can eventually bring about such evolutionary adaptations as drug resistance, a phenomenon previously known to occur only in bacteria and viruses.

<http://www.scripps.edu/news/press/123109.html>

Should Evolutionary Theory Evolve?

Bob Grant The Scientist 01-Jan-10

Presents concepts that evolutionary biologists are discussing: evolvability, facilitated variation, multilevel inheritance. Defines each concept, why the Modern Synthesis may be lacking, and the evidence supporting adapting or expanding the theory.

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

UT Arlington Genome Biologist Reports on Surprising Evolutionary Discovery

Cédric Feschotte University of Texas, Arlington 06-Jan-10

Study on the 8% of human DNA that is derived from viruses may show a cause of cell mutation and psychiatric disorders such as schizophrenia and mood disorders. Called endogenization, process occurs repeatedly in

mammals throughout evolution.

<http://www.uta.edu/ucomm/mediarelations/press/2010/01/genome-biologist-reports.php>

Farmers Sow Their Seed from East to West

Wellcome Trust

21-Jan-10

80+% of European Y chromosomes descend from incoming farmers. Most maternal genetic lineages seem to descend from hunter-gatherers, suggesting a reproductive advantage for farming males and thus society development over indigenous hunter-gatherer males.

<http://www.wellcome.ac.uk/News/2010/News/WTX058269.htm>

Subcategory: Gene Sequences

Carbon Nanotubes Show Promise for High-speed Genetic Sequencing

Richard Harth

Arizona State University

01-Jan-10

Discusses DNA translocation for rapid sequencing: a single-stranded ribbon of DNA is threaded through a carbon nanotube, producing voltage spikes that provide information about the passage of DNA bases as they pass through the tube.

<http://www.biodesign.asu.edu/news/carbon-nanotubes-show-promise-for-high-speed-genetic-sequencing>

Subcategory: Imaging

Toxic-free Click Chemistry a First on a Living Organism

R & D Magazine

19-Jan-10

The widely used molecular synthesis technique known as click chemistry has been safely applied to a living organism for the first time, using a unique copper-free (non-toxic) version to create biomolecular probes for in vivo studies of live mice.

<http://www.rdmag.com/News/2010/01/Life-Science-Toxic-free-click-chemistry-a-first-on-a-living-organism/>

Subcategory: Immunology/ Infectious Diseases

New 'Zoom' Tool Tracks MRSA Evolution and Transmission

Wellcome Trust

22-Jan-10

Researchers have developed a new technique that can track with precision the transmission of MRSA, the drug-resistant superbug; can zoom out from one person to another in a hospital to multi-continent transmissions.

<http://www.wellcome.ac.uk/News/2010/News/WTX058278.htm>

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

Innovative New Way to Screen Libraries of 10 Million or More Compounds, Potentially Helping to Speed Drug Discovery

Keith McKeown

Scripps Research Institute

01-Feb-10

New microarray format allows quantitative comparison of binding affinity that can be carried out without tedious re-synthesis of many different

compounds. Screening of libraries of 10 million or more compounds should help speed drug discovery.

<http://www.scripps.edu/news/press/20100201.html>

Subcategory: Nanotechnology

Paper Strips Can Quickly Detect Toxin in Drinking Water

Nicole Casal Moore

University of Michigan

08-Jan-10

A strip of paper infused with carbon nanotubes mixed with antibodies for MC-LR can quickly and inexpensively detect a toxin produced by algae in drinking water. The sensor works by measuring the electrical conductivity of the nanotubes in the paper.

<http://www.ns.umich.edu/htdocs/releases/story.php?id=7481>

STRATEGIC RELATIONSHIPS

Subcategory: Collaboration

Team Wins Key Insights - and Second Place - in DARPA Challenge

John Toon

Georgia Tech

11-Dec-09

Discusses strategy of 2nd-place winner of DARPA Network Challenge aimed at quickly locating 10 red weather balloons tied at locations across the U.S. Georgia Tech team chose to donate prize to American Red Cross rather than distribute among team members.

<http://www.gatech.edu/newsroom/release.html?nid=48132>

THERAPEUTIC CATEGORY

Subcategory: Cell Therapy

Dose of Reality: Beware of Clinics Touting Stem Cell Panaceas

Aaron Rowe

Wired

21-Dec-09

Rowe names unregulated clinics offering stem cell treatments for autism, Parkinson's, multiple sclerosis, heart failure and Down Syndrome and warns why you should be skeptical of their treatment claims.

http://www.wired.com/magazine/2009/12/st_stem_cell/

Subcategory: Disease Prevention

Damning Verdict on Doctor Who Linked MMR and Autism

Andy Coghlan

New Scientist

29-Jan-10

Some parents are still concerned that thimerosal, a mercury-based preservative added to vaccines, causes autism, despite scores of scientific studies clearing the vaccine of any link with the disease.

<http://www.newscientist.com/article/dn18447-damning-verdict-on-doctor-who-linked-mmr-and-autism.html>

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