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## BioTechCircle News®

**October 2007**

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Featured October article – sometimes you’ve just got to have some fun!

**'Most Bizarre' Nanotechnology Image**

Shows some prize-winning micrographs and provides links to rules for 2008 contest. Prize categories: grand prize; most bizzare; best: electron, ion, photon and scanning probe micrographs and video.

<http://www.nanowerk.com/news/newsid=2840.php>

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**In this articles section: links to 49 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 (1 article) – Page 2  
Biobusiness Management (6 articles) – Page 2  
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## AGRI-BIOTECH

### *Subcategory: Drug Discovery*

#### **Liquid Gold Mine**

Lisa Jarvis

Chemical & Engineering News

08-Oct-07

Scientists are launching a concerted "marine bioprospecting" effort. They have begun filing through the 4,000 marine invertebrates, 200 types of fish, 150 macroalgae, and 250 microalgae estimated to be thriving in Norwegian coastal waters.

<http://pubs.acs.org/cen/business/85/8541bus1.html>

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## BIOBUSINESS MANAGEMENT

### *Subcategory: Government/ Approvals*

#### **Protein Therapeutics and the Regulation of Quality: A Brief History**

Steven Kozlowski

BioPharm International

01-Oct-07

Reviews how regulatory agencies have evolved in response to the need to define quality standards. Timeline from the first accurate model of DNA suggested in 1953 to the draft Guideline for Industry: Pharmaceutical Quality System in 2007.

<http://www.biopharminternational.com/biopharm/GMPs%2FValidation/Article/detail/462759>

#### **Firms Unprepared as First Reach Deadline Looms**

Chemistry World

31-Oct-07

Firms must act now if they are to hit the November 2008 deadline to pre-register substance under Reach, the new European chemicals legislation, industry compliancy experts have warned.

<http://www.rsc.org/chemistryworld/News/2007/October/31100701.asp>

#### **Small World, Big Dreams**

Ted Agres

Drug Discovery & Development

01-Oct-07

The FDA's Nanotechnology Task Force says the FDA should improve its scientific knowledge about nanoscale materials and determine whether it has the necessary tools to describe and evaluate their use.

Does not recommend mandatory labeling.

<http://www.ddmag.com/FDA-nanotechnology.aspx>

### *Subcategory: Miscellaneous*

#### **Living at the Extremes in the Information Age**

Paul Bleicher

Applied Clinical Trials

01-Oct-07

Bleicher reviews a recent book, "The Black Swan, The Impact of the Highly Improbable." Says it is a reminder to observe, question, and observe more, taking action based on observations.

<http://www.actmagazine.com/appliedclinicaltrials/Technology+Viewpoint/Living-at-the-Extremes-in-the-Information->

### **The Future of Public Engagement**

Matthew C. Nisbet & The Scientist  
Dietram A. Scheufele

01-Oct-07

Why scientists must learn to focus on presenting, or "framing," their messages in ways that connect with diverse audiences, remain true to the underlying science, but tailor messages in ways that make them relevant and meaningful.

<http://www.the-scientist.com/2007/10/1/38/1/>

### *Subcategory: Personnel Issues*

### **For the Hottest Jobs, Go Regulatory**

Kelly Rae Chi The Scientist

01-Oct-07

Chi discusses the most in-demand jobs in science, and explains how to get a piece of the action. Reports salary data.

<http://www.the-scientist.com/article/home/53651/>

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## **CLINICAL TRIALS**

### *Subcategory: Government/ Approvals*

### **Compassionate Use Guideline Finalized**

Peter O'Donnell Applied Clinical Trials

01-Sep-07

There is a widespread feeling that the new rules adopted by the EU for compassionate use of medicines do not go far enough, as factors create "an unacceptable lottery" dependent on the measures taken by individual EU member states.

<http://www.actmagazine.com/appliedclinicaltrials/View+from+Brussels/Compassionate-Use-Guideline-Finalized/ArticleStandard/Article/detail/453242>

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## **DRUG DELIVERY**

### *Subcategory: Vectors*

### **Can RNAi Deliver?**

Mohammad Azab Drug Discovery & Development

01-Oct-07

RNAi has great promise as a therapeutic but biological hurdles must be

overcome before the dream is realized. Reviews problems and solutions for delivery systems.

<http://www.dddmag.com/Article.aspx?id=6572>

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## INDUSTRY

### *Subcategory: Financial Management (not funding)*

#### **Unrest in the ACS**

Andrea Gawrylewski                      The Scientist                      01-Oct-07

Reports on controversy raised by anonymous e-mail drawing attention to high executive pay, compensation tied to profitability of publishing divisions (American Chemical Society publishes 36 journals) and stance against open access of published material.

<http://www.the-scientist.com/news/home/53719/>

### *Subcategory: Miscellaneous*

#### **Laboratory Web Site and Video Awards**

The Scientist                      01-Oct-07

See 60 laboratory sites nominated for the best life science lab Web sites. Voting opens on November 20, 2007.

<http://www.the-scientist.com/nomination/display/1/>

#### **Arthur Kornberg Dies**

Alison McCook                      The Scientist                      29-Oct-07

Describes the work of legendary biochemist who won the 1959 Nobel Prize in Physiology or Medicine for illuminating how DNA is assembled.

<http://www.the-scientist.com/news/home/53796/>

### *Subcategory: Proteomics*

#### **The Evolution of Protein Expression and Cell Culture**

Sanjeev Ahuja , Antonio R.                      BioPharm International                      01-Oct-07  
Moreira

presents an overview of how protein expression and cell culture have evolved over the last 20 years and highlights the emerging areas for development in fields such as protein expression systems, cell culture technologies and analytical characterization.

<http://www.biopharminternational.com/biopharm/Upstream+Processing/Article/detail/462760>

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## INVESTMENTS/ GOV. SUPPORT

### *Subcategory: Federal*

## UNC Awarded \$5.6m for Genomics Ethics Center

Triangle Business Journal

10-Oct-07

The new Center for Genomics and Research will study the impact of scientific discoveries on individuals and groups, focusing on studies that affect specific racial, ethnic or other social cohorts.

<http://www.bizjournals.com/triangle/stories/2007/10/08/daily26.html>

### *Subcategory: Miscellaneous*

## Toxicogenomics Target

Cheryl Hogue

Chemical & Engineering News

15-Oct-07

Toxicogenomic technologies examine the effects of chemicals, including pharmaceuticals, at the genetic or metabolic level. The U.S. needs to launch a research initiative on toxicogenomics, the National Research Council advises.

<http://pubs.acs.org/cen/news/85/i42/8542notw2.html>

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## NOVEL APPLICATIONS

### *Subcategory: Computing Systems*

## Biological Networks

Fred Hapgood

CIO

14-Oct-07

Biology's large networks, such as protein cascades, gene switching networks and intercellular networks such as the nervous system are beginning to be used to model information technology network architectures.

[http://advice.cio.com/fred\\_hapgood/biological\\_networks?source=nlt\\_cioinsider](http://advice.cio.com/fred_hapgood/biological_networks?source=nlt_cioinsider)

### *Subcategory: Energy/ Fuel*

## Turning Water Into Fuel

Mitch Jacoby

Chemical & Engineering News

08-Oct-07

Researchers report that titanium disilicide (TiSi<sub>2</sub>), an abundant and inexpensive semiconductor, separates water into hydrogen and oxygen when reactors containing the powdered catalyst are illuminated with simulated sunlight.

<http://pubs.acs.org/cen/news/85/i41/8541notw4.html>

### *Subcategory: Imaging*

## 'Most Bizarre' Nanotechnology Image

NanoWerk

05-Oct-07

Shows some prize-winning micrographs and provides links to rules for 2008 contest. Prize categories: grand prize; most bizzare; best: electron, ion, photon and scanning probe micrographs and video.

## PHARMACEUTICALS

### *Subcategory: Forensics*

#### **Taking Mass Spec Into The Open**

Celia Henry Arnaud                      Chemical & Engineering News                      08-Oct-07

Defending against counterfeits requires analyzing many more tablets than does conventional quality control. Direct ionization methods can be used in the field to monitor the integrity of their drug supplies.

<http://pubs.acs.org/cen/coverstory/85/8541cover.html>

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## PLATFORM TECHNOLOGIES

### *Subcategory: Cardiology/ Vascular Diseases*

#### **Rutgers Biomaterial Debuts in Clinical Trials of New Stent**

Rutgers University                      18-Oct-07

A library of degradable polymers has been developed, comprising 10,000 theoretically possible compositions and applying combinatorial methods to identify the best possible biomaterial. One application: a fully degradable coronary stent.

<http://ur.rutgers.edu/medrel/viewArticle.html?ArticleID=5998>

### *Subcategory: Combinatorial Biology*

#### **All Systems Go**

Economist                      25-Oct-07

Reductionism, the idea that things can best be understood by reducing them to their smallest components, is useful in physics and chemistry. However, a complete understanding of biological processes means putting the bits back together again.

[http://www.economist.com/science/displaystory.cfm?story\\_id=10018596](http://www.economist.com/science/displaystory.cfm?story_id=10018596)

### *Subcategory: Drug Discovery*

#### **Tagging Natural Products**

Carmen Drahl                      Chemical & Engineering News                      01-Oct-07

Reports a 2-step tagging approach that exploits a natural product's alcohol groups to rapidly discern which chunks of the molecule are important for bioactivity and which are suitable for tagging.

<http://pubs.acs.org/cen/news/85/i40/8540notw4.html>

**Subcategory: Evolution Research**

**Why Can Bats Fly When Mice Can't?**

Emily Singer

Technology Review

11-Oct-07

Nobel laureate's new work stems from belief that a lot of evolution arises from additive mutations rather than loss of properties. A gene is duplicated in the genome, and then one copy evolves a new function while the original gene is left intact.

<http://www.technologyreview.com/Biotech/19522/>

**Subcategory: Gastroenterology**

**Diversity in the Gut**

The Scientist

01-Oct-07

Of the 395 bacterial phylotypes identified in the gut tissue and feces of 3 adult humans, about 80% represented sequences from species that had never been cultivated from human intestinal flora.

<http://www.the-scientist.com/article/home/53643/>

**Subcategory: Genomics**

**Evolution Transforms "Junk" DNA into Genetic Machinery**

Howard Hughes Medical Institute

05-Oct-07

New discovery suggests that regions of the genome formerly presumed to be a genetic junkyard may actually be a hardware superstore, providing components that can be used to evolve new genes or new

<http://www.hhmi.org/news/rubinstein20071004.html>

**Subcategory: Human Diagnostics**

**Using Molecular Pathways to Assess Cancer Patients**

Katherine Bourzac

Technology Review

17-Oct-07

Researchers have created a map of all known protein networks in human cells and shown that it can be used to better assess whether a patient's breast cancer will spread. Technology may be applicable to other cancers and diabetes.

<http://www.technologyreview.com/Biotech/19585/>

**Subcategory: Human Therapeutics**

**Activity Assay Goes for Gold**

Chemistry World

31-Oct-07

An electrochemical biosensor for kinase activity, using gold nanoparticles, could help in the search for new cancer treatments.

[http://www.rsc.org/Publishing/Journals/cb/Volume/2007/12/activity\\_assay\\_goes\\_for\\_gold.asp](http://www.rsc.org/Publishing/Journals/cb/Volume/2007/12/activity_assay_goes_for_gold.asp)

**Subcategory: Imaging**

## **Nanoparticle Reveals Sulfur's Midas Touch**

Chemistry World

18-Oct-07

X-ray crystallography of the inside of a gold nanoparticle sheds new light on one of chemistry's longest-standing questions: how does sulfur bind to gold? Potential applications include molecular electronics, biomedical diagnostics and drug delivery.

<http://www.rsc.org/chemistryworld/News/2007/October/18100702.asp>

### *Subcategory: Immunology/ Infectious Diseases*

## **Win Some, Lose Some**

Economist

25-Oct-07

Cites opposing conclusions from evidence that tumor growth and lack of allergy coincide, illustrating the perils of leaping to conclusions on the basis of incomplete data.

[http://www.economist.com/science/displaystory.cfm?story\\_id=10018573](http://www.economist.com/science/displaystory.cfm?story_id=10018573)

### *Subcategory: Nanotechnology*

## **Membrane Protein Analyzed**

Stu Borman

Chemical & Engineering News

29-Oct-07

G-protein-coupled receptors (GPCRs) are one of the most important families of proteins in the human body and a common target of drugs. Reports on progress in stabilization that could help to analyze them structurally.

<http://pubs.acs.org/cen/news/85/i44/8544notw1.html>

## **Shining a New Light on Nanowires**

Chemistry World

17-Oct-07

Scientists have created tiny solar power cells using silicon nanowires 200 times thinner than a human hair. The cells could provide renewable energy for both nano- and large-scale applications.

<http://www.rsc.org/chemistryworld/News/2007/October/17100702.asp>

## **Cells Surface as Protein Producers**

Chemistry World

26-Oct-07

Protein semisynthesis often uses a split intein, a section of a protein that can excise itself and reattach the remaining portions. Describes the concept adopted in cells to make splicing products of synthetic inteins.

[http://www.rsc.org/Publishing/Journals/cb/Volume/2007/12/Cells\\_surface\\_as\\_protein\\_produce](http://www.rsc.org/Publishing/Journals/cb/Volume/2007/12/Cells_surface_as_protein_produce)

### *Subcategory: Proteomics*

## **Naked Proteomics**

Catherine Shaffer

Drug Discovery & Development

01-Oct-07

Researchers in drug discovery are turning to label-free proteomics

techniques for cleaner, simpler results. Reviews "naked" techniques.  
<http://www.dddmag.com/label-free-proteomics.aspx>

### **New Approach Builds Better Proteins Inside a Computer**

Howard Hughes Medical Institute

17-Oct-07

With the aid of more than 150,000 home computer users throughout the world, researchers have, for the first time, accurately predicted the three-dimensional structure of a small, naturally occurring globular protein using only its amino acid sequence.

<http://www.hhmi.org/news/baker20071017.html>

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## **RESEARCH ADVANCEMENTS**

### *Subcategory: Cardiology/ Vascular Diseases*

#### **When 'Good' Cholesterol Goes Bad**

National Institutes of Health

22-Aug-07

New research suggests that some people's HDL is more protective for their hearts than others, and that certain proteins in HDL can exacerbate vessel damage, particularly in people with heart disease.

[http://www.nlm.nih.gov/medlineplus/news/fullstory\\_53879.html](http://www.nlm.nih.gov/medlineplus/news/fullstory_53879.html)

### *Subcategory: Disease Prevention*

#### **Biosensors to Probe the Metals Menace**

The University of Queensland

27-Aug-07

World-first technology warns people if their local water or air is contaminated with dangerous levels of toxic heavy metals and metal-like substances. Next: equate symptoms observed in water microbes with levels of risk to humans, animals.

<http://www.uq.edu.au/news/index.html?article=12818>

### *Subcategory: Genomics*

#### **DNA Backbone Swaps In Sulfur**

Chemical & Engineering News

22-Oct-07

A common artificial DNA modification, phosphorothioation, has been found to occur in nature as well. It is the first known physiological modification of DNA's backbone.

<http://pubs.acs.org/cen/news/85/i43/8543notw6.html>

### *Subcategory: Immunology/ Infectious Diseases*

#### **Scientists Discover a Direct Route from the Brain to the Immune System**

North Shore LIJ Health System

23-Oct-07

Clinical trials are underway to test the theory that stimulation of the

vagus nerve could block a rogue inflammatory response and treat a number of diseases, including life-threatening sepsis.

<http://www.northshorelij.com/body.cfm?id=15&action=detail&ref=968>

### *Subcategory: Metabolism: Obesity, Diabetes*

#### **In Diabetes, a Complex of Causes**

The New York Times

16-Oct-07

A hormone from the skeleton may influence how the body handles sugar. Focusing on the cross-talk between more different organs, cells and molecules represents an important change in understanding how the body handles glucose.

<http://www.nytimes.com/2007/10/16/health/16diab.html?pagewanted=1&r=2&ref=science>

### *Subcategory: Oncology*

#### **How Viruses Contribute to Cancer Theory Proposed**

Drug Discovery & Development

25-Oct-07

Study suggests that viruses may contribute to cancer by causing excessive death of normal cells while selecting and promoting the growth of surviving cells with cancerous traits.

<http://www.dddmag.com/How-Viruses-Contribute-to-Cancer-Theory-Proposed.aspx>

#### **Surveying the Genetic Landscape of Breast and Colon Cancers**

Howard Hughes Medical Institute

11-Oct-07

Study suggests that each breast and colon tumor is unique and may arise through mutations in many different combinations of genes. Studies of 15 important biochemical pathways are already producing new ways to diagnose and treat cancer.

<http://www.hhmi.org/news/vogelstein20071011.html>

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## **RESEARCH TOOLS**

### *Subcategory: Bio Pharma*

#### **Applications of Multivariate Data Analysis in Biotech Processing**

BioPharm International

01-Oct-07

Presents how 4 of the major biotech companies, Amgen, Genentech, Wyeth Biotech, and MedImmune, are using multivariate analysis to solve problems encountered in biotech processing.

<http://www.biopharminternational.com/biopharm/Downstream+Processing/Applications-of-MVDA-in-Biotech-Processing/ArticleStandard/Article/detail/462928>

### *Subcategory: Computing Systems*

#### **A Collaborative Tool Settles Into Drug Research**



Howard Hughes Medical Institute

02-Oct-07

The Science Education Alliance (SEA) will become a national network of scientists and educators who are working collaboratively to develop and distribute new materials and methods to the education community.

<http://www.hhmi.org/news/sea20071002.html>

**NIH and India Partner to Develop Low-Cost Medical Technologies**

National Institute of Health

17-Oct-07

Areas of cooperation include low-cost innovations in X-ray technology; nanotechnology-based biosensors; point-of-care diagnostic technologies; telehealth and telecommunication technologies; and neonatal health technologies.

<http://www.nih.gov/news/pr/oct2007/nibib-17.htm>

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