



Latest News

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New discovery leaves blood-doping athletes scratching their heads

Hair Follicles Can Manufacture Blood-Doping and Life-Saving Substance, Erythropoietin

Bethesda, MD—A stunning discovery by German scientists may make blood doping and the treatment of severe anemia as easy as washing your hair. In the October issue of *The FASEB Journal*, researchers show that the estimated 100,000 hair follicles on each person's head have the potential to become erythropoietin (EPO) factories. EPO, the hormone primarily responsible for the creation of red blood cells, is used illegally to enhance athletic performance and is used legally to treat severe anemia associated with kidney failure and chemotherapy. [\[View Release\]](#)

Scientists at Penn Veterinary Medicine School Report New Strategy to Create Genetically Modified Animals

PHILADELPHIA— Researchers at the University of Pennsylvania School of Veterinary Medicine have demonstrated the potential of a new strategy for genetic modification of large animals. The method employs a harmless gene therapy virus that transfers a genetic modification to male reproductive cells, which is then passed naturally on to offspring. The findings, available online in *The FASEB Journal* and in the February 2008 print edition, are the first report of transgenesis via germ cell transplantation in a non-rodent species, a promising approach to germ line genetic modification. It also demonstrates that germline transduction and germ cell transplantation in large animals provides an approach that is potentially less costly than microinjection and cloning, the traditional methods used to generate transgenic large animal models for biomedical research. [\[View Release\]](#) [\[View PDF\]](#)

A better way to make a muscle?

New revelations about how muscle tissue forms could help scientists develop more effective strategies for therapeutic tissue replacement

Even the mightiest individuals are vulnerable to muscle loss, whether from severe injury, old age, or as a byproduct of disease, and many scientists see the engineering of replacement muscle as a promising solution. A new study in *The FASEB Journal* sheds new light on more effective strategies for therapeutic tissue replacement. [\[View Release\]](#) [\[View PDF\]](#)

Genetic Variant Linked to Odor Perception

Duke University Medical Center researchers demonstrated that genetic variants of odor receptors within the nose determine how a particular odor is perceived. The researchers, led by Duke's Hiroaki Matsunami, Ph.D., assistant professor of molecular genetics and microbiology, published the results of their experiments early online Sept. 16 in the journal *Nature*. The researchers focused on two chemicals – androstenone and androstadienone – that are created naturally by the body during the breakdown of the male sex hormone testosterone and are excreted in sweat and urine. Other members of the team were Qiuyi Chi from Duke and Andreas Keller and **Leslie Vosshall** of Rockefeller. [\[View Release\]](#) [\[View PDF\]](#)



Molecular probe 'paints' cancer cells in living animals, Stanford researchers find

STANFORD, Calif. — Researchers at the Stanford University School of Medicine have developed a molecular probe that sets aglow tumor cells within living animals. Their goal is to use the probe to improve the diagnosis and treatment of cancer and other diseases. The probe's main ingredient is a molecule that labels active proteases—protein-destroying enzymes—that run amok in cancerous cells. The molecule is normally invisible to the naked eye but it carries a fluorescent tag that lights up when it binds to the protease. The tag beams out near-infrared light that passes through skin and is detectable with a special camera. The use of the imaging technique in mice is described in a study published in the Sept. 9 advance online issue of *Nature Chemical Biology*. Contributors to this study are Galia Blum, PhD, a postdoctoral scholar in the laboratory of Matthew Bogoy, PhD, assistant professor of pathology, **Helen Blau**, PhD, professor of microbiology and immunology; Milton Merchant, a Blau lab technician; and Georges von Degenfeld, MD, PhD, a former researcher in Blau's laboratory, now at Bayer Healthcare in Wuppertal, Germany. [\[View Release\]](#) [\[View PDF\]](#)

Stanford/Packard scientists speed healing of bone damage

STANFORD, Calif. — Blocking a naturally occurring inhibitor of bone formation accelerates healing of skull defects in mice, say researchers at the Stanford University School of Medicine and Lucile Packard Children's Hospital. The finding advances the understanding of how the skeleton develops and opens new therapeutic avenues for many of the disorders that are expected to afflict aging baby boomers. In addition to first author Derrick Wan, corresponding author Michael Longaker's Stanford collaborators include Jason Pomerantz, Jae-Beom Kim, and **Helen Blau**. These authors also collaborated with researchers at UCLA. [\[View Release\]](#) [\[View PDF\]](#)

News Archive

August 2007

Scientists discover important beauty secret for balanced skin color and tone

New article in The FASEB Journal shows keratinocytes influence skin color and tone

In the timeless quest for healthier, younger looking skin, scientists from the University of Cincinnati and Tokyo Medical University have made an important discovery toward manipulating skin tone and color. The implications of this research range from helping doctors develop more natural looking bioengineered skin grafts to helping cosmetics companies develop new products for achieving the "perfect" sunless tan. The research study, published in the September print issue of *The FASEB Journal*, shows for the first time how to manipulate skin color and tone using cells previously thought to play no significant role in this function. [\[View Release\]](#)

New cause of Tamoxifen resistance in breast cancer cells discovered

Scientists from the Lombardi Comprehensive Cancer Center announced today the discovery of a new mechanism of resistance to endocrine or anti-hormonal therapies, such as Tamoxifen and Faslodex. This research may allow oncologists to screen women for responsiveness to these treatments, and provides a much-needed clue to reversing resistance. In a paper published online in *The FASEB Journal* on July 27, Clarke and his colleagues at the Lombardi Comprehensive Cancer Center (part of Georgetown University Medical Center) found that over-expression of the spliced variant of the gene in estrogen receptor-positive breast cancer cells led to reduced sensitivity to Tamoxifen and Faslodex. [\[View Release\]](#) [\[View PDF\]](#)

Charlie Rose to emcee first Prix Galien USA award ceremony

Will recognize top U.S. achievements in pharmaceutical science

NEW YORK--(BUSINESS WIRE)--Prix Galien USA today announced that Emmy Award winner Charlie Rose will emcee the first Prix Galien USA Award Ceremony in New York on September 25, 2007, to recognize outstanding scientific achievements in the pharmaceutical and biotechnology industries. "We're especially pleased Charlie Rose will emcee the award ceremony," said **Gerald Weissmann**, Prix Galien USA Committee Chair and Editor-in-Chief of *The FASEB Journal*. "The Charlie Rose Show is an American institution. He has a great interest in science and is currently producing a 12-part television series on scientific research in human health." The Prix Galien award originated in 1970 by French pharmacist Roland Mehl as a means to give recognition to outstanding pharmaceutical accomplishments. Since then, the award, named after Galen, the Greek father of medicine and pharmacology, has become one of the most coveted honors in the biomedical industry in Europe and Canada. It has been called "the Nobel Prize of pharmaceutical

science.” [\[View Release\]](#) [\[View PDF\]](#)

July 2007

Under magnetic force, nanoparticles may deliver gene therapy

New delivery system might also carry drugs or cells to targeted sites

After binding DNA segments to tiny iron-containing spheres called nanoparticles, researchers have used magnetic fields to direct the nanoparticles into arterial muscle cells, where the DNA could have a therapeutic effect. Although the research, done in cell cultures, is in early stages, it may represent a new method for delivering gene therapy to benefit blood vessels damaged by arterial disease. The proof-of-principle study, performed on vascular cells in culture, appears in the August issue of *The FASEB Journal*. [\[View Release\]](#) [\[View PDF\]](#) [\[View Image\]](#)

New target for HIV/AIDS drugs and vaccines discovered

Article in The FASEB Journal shows how HIV delivers a one-two punch to cells of the innate immune system

Researchers from Rome, Italy, describe a finding in the August 2007 print issue of *The FASEB Journal* that could lead to new drugs to fight the HIV/AIDS virus, as well as new vaccines to prevent infection. It has been known that HIV proteins disable the antibody-forming part of the immune system (the “homeland defense” or acquired immune system). In this report, researchers demonstrate for the first time how the HIV-1 Nef viral protein delivers a one-two punch to the body’s innate immune system (our “early warning system” composed of dendritic and natural killer cells). First, Nef hijacks dendritic cells (DCs) to upset the function of natural killer (NK) cells. Second, after blocking this first line of defense against the immune system, Nef uses DCs and NK cells to create a microenvironment that actually makes it easier for HIV/AIDS to replicate. [\[View Release\]](#) [\[View PDF\]](#)

June 2007

Gene deficiency is a protective barrier to obesity

CD38 plays a role in regulating body weight and obesity

A search for the molecular clues of longevity has taken Mayo Clinic researchers down another path that could explain why some people who consume excessive calories don't gain weight. The study, which was done in laboratory mouse models, points to the absence of a gene called CD38. When absent, the gene prevented mice on high-fat diets from gaining weight, but when present, the mice became obese. The findings were published ahead of print this month in *The FASEB Journal*, and the study will appear in the *Journal's* November 2007 print issue. [\[View Release\]](#) [\[View PDF\]](#)

Fat fish put obesity on the hook

Research published in The FASEB Journal should facilitate new obesity treatments

Everyone knows that eating lean fish helps slim waistlines, but researchers from the Center for the Study of Weight Regulation and Associated Disorders at Oregon Health and Science University in Portland, OR, have found a new way fish can help eliminate obesity. In a study to be published in the July 2007 print issue of *The FASEB Journal*, researchers describe the first genetic model of obesity in a fish. Having this model should greatly accelerate the development of new drugs to help people lose weight and keep it off. [\[View Release\]](#) [\[View Fact Sheet\]](#) [\[View Images\]](#)

Keep in the PINK to avoid Parkinson's

New Research in The FASEB Journal explains the link between diabetes and Parkinson's disease

Keeping fit and avoiding diabetes could also help to protect you from Parkinson’s disease. A team of scientists at Heriot-Watt University in Edinburgh have discovered a mechanism linking the development of Parkinson’s disease to people who have already developed Type II Diabetes. In the study to be published in the November 2007 print issue of *The FASEB Journal* the Heriot-Watt team describe the biochemical changes brought about by diabetes switching off the PINK1 gene; the loss of function of this gene is a known cause of Parkinson’s disease. [\[View Release\]](#) [\[View PDF\]](#)

May 2007

Stanford scientists score a hit in "Scar Wars"

Study in The FASEB Journal provides new insight into the pathophysiology of scarring and provides the first animal

model of scar research

When Geoffrey Gurtner worked as a surgery resident at Boston Shriners's Hospital, he regularly treated children with disfiguring burns over their faces and bodies. These young patients would undergo 60 to 70 operations and, in the end, still look horrendous. In a study to be published in the October 2007 issue of *The FASEB Journal*, Gurtner and colleagues provide new insight into the pathophysiology of scarring and take the first step in an ongoing, multidisciplinary attempt to battle disfiguring scarring—dubbed “Scar Wars.” The study also provides the first animal model for scar research. [\[View Release\]](#) [\[View PDF\]](#)

April 2007

Scientists find new agent to fight genetic disorders: Zorro-Locked Nucleic Acid

New Study in The FASEB Journal describes how Zorro-LNA "turns off" harmful genes

A study to be published in the June 2007 issue of *The FASEB Journal* describes a new agent, called “Zorro-LNA,” which has the potential to stop genetic disorders in their tracks. In the study, researchers from the Karolinska Institute in Stockholm, Sweden, describe how they developed Zorro-LNA to bind with both strands of a gene's DNA simultaneously, effectively disabling that gene. This development has clinical implications for virtually every human condition caused by or worsened by dominant defective genes. Examples include: Huntington's disease, familial high cholesterol, polycystic kidney disease, some instances of glaucoma and colorectal cancer, and neurofibromatosis, among others. [\[View Release\]](#) [\[View Fact Sheet\]](#)

Stanford scientists make major breakthrough in regenerative medicine

New study in The FASEB Journal opens the way to healing and organ regeneration

Findings described in a new study by Stanford scientists may be the first step toward a major revolution in human regenerative medicine—a future where advanced organ damage can be repaired by the body itself. In the May 2007 issue of *The FASEB Journal*, researchers show that a human evolutionary ancestor, the sea squirt, can correct abnormalities over a series of generations, suggesting that a similar regenerative process might be possible in people. [\[View Release\]](#) [\[View Fact Sheet\]](#) [\[View Image\]](#)

March 2007

Something fishy in human blood could save lives

New research in The FASEB Journal offers hope for people with liver and kidney damage

Thousands of people with liver and kidney disease die every year from too much ammonia in their blood, and scientists from the United States and Japan have found a possible solution. In the April 2007 issue of *The FASEB Journal* they report that a protein which excretes ammonia through pufferfish gills is similar to human Rh blood proteins. By targeting human Rh proteins, new treatments will help people with damaged livers and kidneys remove toxic ammonia from their bloodstream. [\[View Release\]](#) [\[View Fact Sheet\]](#)



Harvard and U. Pittsburg researchers explain carbon monoxide's anti-inflammatory effects

April is National Donate Life Month: findings described in The FASEB Journal may lead to more successful organ transplants

In a study appearing in the April 2007 issue of *The FASEB Journal*, scientists from Harvard University and the University of Pittsburgh have shown for the first time that the anti-inflammatory effects of carbon monoxide originate within cells' own molecular engines, mitochondria. Specifically, mitochondria react to low levels of carbon monoxide by releasing chemical signals that reduce or shut down the body's inflammatory response, raising the possibility for the development of new anti-inflammatory therapies, one of which may be low levels of inhaled carbon monoxide.. [\[View Release\]](#)



Japanese scientists report success in restoring mental function in Alzheimer disease model

TOKYO (Reuters) - Japanese scientists have developed an oral vaccine for Alzheimer's disease that has

proven effective and safe in mice, the director of a research institute behind the project said on Thursday. The team is preparing to move to small-scale clinical trials in humans, possibly this year, said Takeshi Tabira, director of the National Institute for Longevity Sciences in Aichi, central Japan. [\[View Release\]](#)

Nanoparticles can track cells deep within living organisms

To the delight of researchers at Washington University School of Medicine in St. Louis, living cells gobbled up fluorine-laced nanoparticles without needing any coaxing. Then, because of the unusual meal, the cells were easily located with MRI scanning after being injected into mice. Developed in the laboratories of Samuel A. Wickline, M.D., and Gregory Lanza, M.D., Ph.D., the nanoparticles could soon allow researchers and physicians to directly track cells used in medical treatments using unique signatures from the ingested nanoparticle beacons. In an article that will appear in the June issue of *The FASEB Journal*, lead author Kathryn C. Partlow, a doctoral student in Wickline's lab, describes using perfluorocarbon nanoparticles to label endothelial progenitor cells taken from human umbilical cord blood. Such cells can be primed to help build new blood vessels when injected into the body. The researchers believe nanoparticle-labeled stem cells like these could prove useful for monitoring tumors and diagnosing and treating cardiovascular problems. [\[View Release\]](#)

Humans, flies smell alike, neurobiologists find

The nose knows – whether it's on a fruit fly or a human. And while it would seem that how a fruit fly judges odors should differ from how a human smells, new research from Rockefeller University finds that at the neurobiological level, the two organisms have more in common than one might expect. While it is very easy to ask a person about an odor – how intense it is, what it is similar to – it is slightly harder with an insect. “It is not known in much detail how these insects respond behaviorally to odors,” says Andreas Keller, first author of the paper and a postdoc in the laboratory of Chemers Family Associate Professor **Leslie Vosshall**. Keller designed experiments to look at exactly how a single fly would behave when exposed to different odors. He and **Vosshall** found that both flies and humans judge odor intensity the same way, but differ in their judgment of quality. [\[View Release\]](#)

Biotechnology Study Center Honors Joan V. Ruderman, Salvador Moncada and Charles N. Serhan

On Monday, March 26, The Biotechnology Study Center of NYU School of Medicine will hold its annual awards symposium to honor three outstanding pioneers in biomedical research. The Dart/NYU Biotechnology Achievement Awards recognize the role of pure science in the development of pharmaceuticals, and particularly honor those scientists whose work has led to major advances at the bedside. A traditional Steuben glass sculpture and honorarium accompanies each award. The 2007 awards will be given to Joan V. Ruderman, who has elucidated the most basic of life processes: the cell division cycle; **Salvador Moncada** for his discovery that nitric oxide is both the target and effector of a score of compounds now in the clinic for the treatment of cardiovascular and rheumatic diseases; and **Charles N. Serhan** for leading a worldwide effort to discover new chemical signals that control inflammation and its resolution. [\[View Release\]](#)

How human can a worm be?

Study sheds light on the function of the human protein ataxin-3, which when mutated is linked to Machado-Joseph disease

Several neurodegenerative diseases are linked to the production of mutated proteins, which accumulate in the brain of patients and are believed to lead to the neurons death characteristic of these disorders. Nevertheless, despite this shared mechanism, each of these diseases is unique, as are the brain areas affected, and to understand them is crucial to identify the biological function of the mutated protein behind the disease, something not always easy. But now, an elegant study to be published in the April 2007 issue of *The FASEB Journal* shows how the study of a simpler genetic model - the worm *Caenorhabditis elegans* (*C.elegans*) – was able to give insight into the function of the human protein ataxin-3, which when mutated is linked to Machado-Joseph disease (MJD), a fatal genetic neurodegenerative disorder. [\[View Release\]](#)

Galileo's Gout: Science in an Age of Endarkenment receives critical acclaim

In his incisive new book, *Galileo's Gout: Science in an Age of Endarkenment*, **Gerald Weissmann** explores some of today's toughest and most timely ethical debates – stem cell research, the evolution vs. intelligent

design debate, the efficacy of alternative medical treatments – and puts them in historical context. While timely, this book, a collection of twenty essays, is a deep history of science, written for the general reader and marks the launch of the new publisher, Bellevue Literary Press. [\[View Release\]](#)

February 2007

Researchers help identify how thalidomide causes birth defects

Mystery behind the thalidomide birth defect link possibly solved; new cancer treatments possible

Researchers from the University of Arkansas

for Medical Sciences (UAMS) have identified the molecular trigger for birth defects caused by the drug thalidomide, a discovery that also could lead to new cancer-fighting treatments. The article, “Thalidomide induces limb deformities by perturbing the Bmp/Dkk1/Wnt signaling pathway,” will be published in the May 2007 print issue of *The FASEB Journal*, but it is now available online. [\[View Release\]](#)



The most prestigious international biomedical industry research honor, Prix Galien, expands to U.S.

Prix Galien recognizes outstanding accomplishments of US pharmaceutical and biotechnology companies

Coveted worldwide by pharmaceutical industry researchers and heralded as the "Nobel Prize" for applied medical research and development, Prix Galien is now launching a new award program to recognize US-based scientific innovation in celebration of its 37th anniversary. [\[View Release\]](#)

Discovery of chemical profiles for infectious diarrhoea

Odors from human feces could be used to diagnose diseases quickly

Academics have found, for the first time, smells from healthy faeces and people with infectious diarrhoea differ significantly in their chemical composition and could be used to diagnose diseases quickly, such as *Clostridium difficile* (*C. Diff.*). It is hoped the discovery of these chemical profiles will lead to the development of a device capable of rapid diagnosis at the bedside, saving both time and money. The study, published online in *The FASEB Journal*, is the result of a joint collaboration between Dr Chris Probert, Consultant and Reader in Gastroenterology at Bristol University and Professor Norman Ratcliffe at the University of the West of England. [\[View Release\]](#)

Getting on your nerves... and repairing them

RNAi, a 2006 Nobel Prize molecule, is a new therapeutic target

Here is some news that will certainly get on people's nerves: In a study to be published in the March 2007 issue of *The FASEB Journal*, scientists from East Carolina University report that a key molecular mechanism, RNA interference (RNAi), plays a role in the regeneration and repair of periphery nerves, which are the nerves located outside of the brain and spinal column. This research may lead to new therapies that manipulate RNAi to treat people with damaged nerves resulting from degenerative disorders and injury. [\[View Release\]](#)

Cleveland and Paris scientists reveal secrets of Homer's Cyclops to help people with holoprosencephaly

New study in The FASEB Journal provides hope for detecting, preventing, and treating rare brain defects

Homer's Cyclops might be myth, but a disorder that can cause babies to be born with only one eye is very real. Scientists from Cleveland, Ohio, and Paris, France, reached an important milestone in understanding one of the molecular causes of a rare, but serious birth defect, Holoprosencephaly. In a study to appear in the February issue of *The FASEB Journal*, researchers describe findings that help explain why and how some fetal brains fail to develop two lobes, as well as why and how the related skull and facial defects occur. Using the information from this study, researchers will be able to pursue better approaches toward detecting, preventing, and treating this serious disorder. [\[View Release\]](#)

January 2007

New Year's resolution #1: prevent cancer, use olive oil

Innovative research article in The FASEB Journal suggests olive oil has a significant impact on cancer rates

If you want to avoid developing cancer, then you might want to add eating more olive oil to your list of New Year's resolutions. In a study to be published in the January 2007 issue of *The FASEB Journal*, scientists from five European countries describe how the anti-cancer effects of olive oil may account for the significant difference in cancer rates among Northern and Southern Europeans. [\[View Release\]](#)

December 2006

Researchers discover key mechanism by which lethal Ebola and Marburg viruses cause disease

Discovery is expected to lead to new drugs for treatment of certain viral hemorrhagic fevers in humans and apes

Researchers in the Greene Infectious Disease Laboratory at Columbia University's Mailman School of Public Health, the Centers for Disease Control and Prevention, and the Caribbean Primate Research Center have discovered a key mechanism by which the Filoviruses, Ebola and Marburg, cause disease. The identification of an amino acid sequence in Filoviruses that results in the rapid depression of immunological response is described in the December 2006 issue of *The FASEB Journal*. Using this information, researchers can begin to develop new drugs to stop these devastating diseases. [\[View Release\]](#)

November 2006

It's in your head: the brain's own globin defends you from shock and stroke

New article in The FASEB Journal provides details of a new protein: neuroglobin

The next generation of treatments for shock or stroke could be based on a protein that is already in our heads – neuroglobin. In a review article to be published in the November issue of *The FASEB Journal*, scientists from University of Rome describe this protein, which may be the key to unlocking new therapies to minimize brain damage and improve recoveries for patients. [\[View Release\]](#)

October 2006

Fighting cancer with aspirin?

Research in The FASEB Journal provides clues for new cancer drugs

When looking for new weapons in the war on cancer, scientists should turn to their medicine cabinets for an age-old remedy— aspirin. According to scientists at Newcastle University (UK), aspirin has cancer-fighting effects that extend beyond already understood Cox inhibitors. This finding, which appears in the October 2006 issue of *The FASEB Journal*, provides important clues to how aspirin works in cancer and in inflammation: aspirin reduces the formation of blood vessels that fuel developing tumors. Without new blood vessels (formed through a process called angiogenesis) tumors cannot grow beyond the size of a pea. With this information, researchers can pursue new lines of investigation that could ultimately yield an entirely new type of cancer-fighting drug. [\[View Release\]](#)

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