***Comparative Research One Health News Bits***

Dec 9, 2012

[**Snake venom could be source of new human medicines**](http://www.bbc.co.uk/news/health-19634621)

Venom from some snakes may be useful in developing new treatments for people with certain cardiovascular and neurological diseases, according to new research. The study found that some lizards and snakes "reclaim" toxins, using them constructively in other areas of their body. "The venom gland of snakes appears to be a melting pot for evolving new functions for molecules," said researcher Nicholas Casewell. (9/18)

[**Agricultural animals are essential to humans in many ways**](http://www.journal-advocate.com/sterling-lifestyle-columnists/ci_21602594/jedlicka-science-animals)

In addition to serving as a source of food, animals such as pigs are useful to humans in many other ways, contributing to human medical products, including heparin, insulin and estrogen, while the skin of pigs often helps human burn patients and swine heart and artery tissue are important for treating people with cardiovascular problems. "Animal agriculture is all around you and in everything you do," writes Colorado State University extension agent Megan Jedlicka. (9/22)

[**CVM Neurobiologist maps area of the brain associated with affective aggression in mice**](http://blogs.cvm.ncsu.edu/2012/09/05/cvm-neurobiologist-maps-areas-of-the-brain-associated-with-affective-aggression-in-mice/)

A North Carolina State University College of Veterinary Medicine researcher has created a roadmap to areas of the brain associated with affective aggression in mice. This roadmap may be the first step toward finding therapies for humans suffering from affective aggression disorders that lead to impulsive violent acts. Affective aggression differs from defensive aggression or premeditated aggression used by predators, in that the role of affective aggression isn’t clear and could be considered maladaptive. (9/5)

[**Salamanders studied for clues to tissue regeneration**](http://www.redorbit.com/news/science/1112701398/tissue-regeneration-study-looks-to-salamanders-092512/)

Studying the genes of the Mexican aquatic salamander known as axolotl, researchers found important clues about tissue regeneration including two proteins that inhibit transposable elements, migrating DNA sequences that interfere with regeneration, thus promoting tissue regeneration. "What we learn may eventually lead to new methods for treating human conditions, such as wound healing and regeneration of simple tissues," said senior author Tony Hunter. The researchers note that limb regeneration is complex and may not be possible in humans, but understanding the process could lead to breakthroughs in the treatment of human degenerative diseases. (9/26)

[**Engineers hope to apply lessons from animals to electronics**](http://gigaom.com/2012/09/27/how-e-readers-can-be-more-like-animals/)

Animals such as squid and octopus change color in much the same way as devices such as e-readers, according to a recent study. Although the gadgets are faster, animals can manipulate their skin to match the texture of surroundings, something engineers hope to emulate in devices. (9/27)

[**Study: Camel antibodies penetrate the blood-brain barrier**](http://www.sciencedaily.com/releases/2012/10/121001125243.htm)

New research has uncovered a novel class of antibodies in camelids that has the ability to naturally penetrate the blood-brain barrier and target specific cells, according to the authors. The findings may lead to new therapies for people with brain disorders such as Alzheimer's disease. "Camels may be most famous for helping people travel to the outermost reaches of the desert, but soon they could be also known for helping us reach the innermost parts of our brains," said physician Gerald Weissmann, editor of The FASEB Journal, where the paper was published. (10/1) <http://www.sciencedaily.com/releases/2012/10/121001125243.htm>

[**Black mamba venom contains potent pain killing compounds**](http://news.nationalgeographic.com/news/2012/10/121003-morphine-painkillers-black-mamba-snakes-health-science/)

Venom from one of the world's most poisonous snakes, the black mamba, contains strong painkilling compounds known as mambalgins, according to research from France's Institute of Molecular and Cellular Pharmacology. The compounds are similar in potency to opiates such as morphine but lack the risk of respiratory side effects. With time and more research, scientists hope the compounds can be used to help alleviate pain in humans. (10/3)<http://news.nationalgeographic.com/news/2012/10/121003-morphine-painkillers-black-mamba-snakes-health-science/>

[**Vitamin C blocks bone loss in mice, study says**](http://www.sciencedaily.com/releases/2012/10/121009151258.htm)

Large quantities of vitamin C taken orally promote bone formation in female mice after removal of their ovaries, a procedure known to cause a loss of bone density, according to researchers at Mount Sinai School of Medicine. "This study has profound public health implications and is well worth exploring for its therapeutic potential in people," said lead researcher and physician Mone Zaidi. Additional research may uncover ways of preventing osteoporosis in humans, Dr. Zadi said. (10/9) <http://www.sciencedaily.com/releases/2012/10/121009151258.htm>

[**High protein diet alters intestinal bacterial flora in kittens**](http://www.livescience.com/24174-high-protein-cat-diet.html)

Kittens fed a high-protein diet have lower levels of two beneficial intestinal bacteria, bifidobacterium and lactobacillus, than kittens fed a diet containing balanced amounts of protein and carbohydrates, according to a recent study. A lack of bifidobacterium has been associated with irritable bowel syndrome in people, and lactobacillus may be involved in cholesterol and appetite levels. The findings may help humans because intestinal bacterial populations are similar in humans and cats. (10/22) <http://www.livescience.com/24174-high-protein-cat-diet.html>

[**Agricultural animals are essential to humans in many ways**](http://www.journal-advocate.com/sterling-lifestyle-columnists/ci_21602594/jedlicka-science-animals)

In addition to serving as a source of food, animals such as pigs are useful to humans in many other ways, contributing to human medical products, including heparin, insulin and estrogen, while the skin of pigs often helps human burn patients and swine heart and artery tissue are important for treating people with cardiovascular problems. "Animal agriculture is all around you and in everything you do," writes Colorado State University extension agent Megan Jedlicka. (9/22)

[**CVM Neurobiologist maps area of the brain associated with affective aggression in mice**](http://blogs.cvm.ncsu.edu/2012/09/05/cvm-neurobiologist-maps-areas-of-the-brain-associated-with-affective-aggression-in-mice/)

A North Carolina State University College of Veterinary Medicine researcher has created a roadmap to areas of the brain associated with affective aggression in mice. This roadmap may be the first step toward finding therapies for humans suffering from affective aggression disorders that lead to impulsive violent acts. Affective aggression differs from defensive aggression or premeditated aggression used by predators, in that the role of affective aggression isn’t clear and could be considered maladaptive. (9/5)

[**Salamanders studied for clues to tissue regeneration**](http://www.redorbit.com/news/science/1112701398/tissue-regeneration-study-looks-to-salamanders-092512/)

Studying the genes of the Mexican aquatic salamander known as axolotl, researchers found important clues about tissue regeneration including two proteins that inhibit transposable elements, migrating DNA sequences that interfere with regeneration, thus promoting tissue regeneration. "What we learn may eventually lead to new methods for treating human conditions, such as wound healing and regeneration of simple tissues," said senior author Tony Hunter. The researchers note that limb regeneration is complex and may not be possible in humans, but understanding the process could lead to breakthroughs in the treatment of human degenerative diseases. (9/26)

[**Engineers hope to apply lessons from animals to electronics**](http://gigaom.com/2012/09/27/how-e-readers-can-be-more-like-animals/)

Animals such as squid and octopus change color in much the same way as devices such as e-readers, according to a recent study. Although the gadgets are faster, animals can manipulate their skin to match the texture of surroundings, something engineers hope to emulate in devices. (9/27)

**[Application of new genetic techniques may benefit humans](http://www.nature.com/news/animals-engineered-with-pinpoint-accuracy-1.11506?WT.ec_id=NEWS-20121002)**

Using advancements in genetic engineering, New Zealand scientists created two genetically modified animals that may help with human ailments -- a cow that produces beta-globulin-free milk and a pig that lacks low-density lipoprotein receptors. Beta-lactoglobulin induces an allergic reaction in some people, causing vomiting and diarrhea. In the pigs without LDL receptors, the cholesterol builds up, potentially providing a model of human cardiovascular disease. (10/2) <http://www.nature.com/news/animals-engineered-with-pinpoint-accuracy-1.11506?WT.ec_id=NEWS-20121002>

**[Alzheimer’s-linked proteins found in brains of wild cats](http://abcnews.go.com/blogs/headlines/2012/10/that-cranky-old-cat-may-have-alzheimers/)**

Researchers in Japan identified Alzheimer's-related neurofibrillary tangles and evidence of peptide AB42 in the brains of wild cats. "If we closely compare changes in the brain among many different animals, we may be able to contribute to a study into the mechanism of [Alzheimer's]," said veterinary pathologist James Chambers. Previous research found cognitive impairment in one-third of dogs ages 11 to 12 and more than two-thirds of dogs 15 to 16. In cats, evidence of dementia was seen in 28% of animals 11 to 14 years old. (10/5) <http://abcnews.go.com/blogs/headlines/2012/10/that-cranky-old-cat-may-have-alzheimers/>

**[Mice “sing” like birds and people, research finds](http://www.bbc.co.uk/news/science-environment-19898947)**

Mice may have the brain power needed to adapt the pitch of the ultrasonic "songs" males sing to attract mates, according to new research from Tulane University. Male mice that were housed together demonstrated vocal learning, a rare attribute in the animal world, by matching the pitch of their songs to that of others. The research explored the mechanism through which the mouse brain controls pitch, and scientists say the findings may be useful in studying how anxiety disorders and conditions such as autism affect human communication. (10/10) <http://www.bbc.co.uk/news/science-environment-19898947>

**[Prostate cancer treaetment shows safety in dogs, may help men](http://www.sciencedaily.com/releases/2012/10/121015152017.htm)**

Veterinarian Sandra Axiak-Bechtel, an assistant professor in oncology at the University of Missouri College of Veterinary Medicine, and colleagues have found that radioactive gold nanoparticles are a safe treatment for canine prostate cancer. Prostate cancer develops in dogs in much the same way as in humans, Dr. Axiak-Bechtel said. "Proving that gold nanoparticles are safe to use in the treatment of prostate cancer in dogs is a big step toward gaining approval for clinical trials in men," she said. (10/15) <http://www.sciencedaily.com/releases/2012/10/121015152017.htm>

**[A healthy bond: By improving pain treatment, therapy in dogs, research offers medical insight for humans](http://www.k-state.edu/media/newsreleases/sept12/dog92512.html)**

A Kansas State University professor's research improving post-surgery pain treatment and osteoarthritis therapy in dogs may help develop better ways to treat humans for various medical conditions. From the use of hot and cold packs to new forms of narcotics, James Roush, professor of clinical sciences, is studying ways to lessen pain after surgery and improve care for small animals, particularly dogs. (9/25)

<http://www.k-state.edu/media/newsreleases/sept12/dog92512.html>

**[Mushroom improves canine cancer survival time](http://www.upenn.edu/pennnews/news/compound-derived-mushroom-lengthens-survival-time-dogs-cancer-penn-vet-study-finds)**

Dogs with hemangiosarcoma that were treated with a compound derived from the Coriolus versicolor mushroom had the longest survival times ever reported for dogs with the disease. These promising findings offer hope that the compound may one day offer cancer patients — human and canine alike — a viable alternative or complementary treatment to traditional chemotherapies. (9/10) <http://www.upenn.edu/pennnews/news/compound-derived-mushroom-lengthens-survival-time-dogs-cancer-penn-vet-study-finds>

[**Honeybee bite may be better than its sting, study finds**](http://phys.org/news/2012-10-honeybee-secretion-local-anesthetic.html)

While researchers have long known that honeybees release a substance known as 2-heptanone, they believed the secretion was used as a type of scent marker for bees. However, new research suggests the secretion is actually an anesthetic. The researchers were studying moths whose larvae can decimate beehives when they serendipitously discovered the anesthetic nature of the bees' secretion. The findings may lead to a new local anesthetic for use in human and veterinary medicine. (10/29)

<http://phys.org/news/2012-10-honeybee-secretion-local-anesthetic.html>