

Discovery Could Lead to a New Animal Model for Hepatitis C

January 30, 2009. Rockefeller University scientists have identified a protein that allows the hepatitis C virus to enter mouse cells, a finding that represents the clearest path yet for developing a much-needed vaccine as well as tailored treatments for the 170 million people across the globe living with the tenacious, insidious and rapidly changing virus.

During its career, the potentially fatal hepatitis C virus has banked its success on a rather unusual strategy: its limitations. Its inability to infect animals other than humans and chimpanzees has severely hampered scientists in developing a useful small animal model for the disease.

But now, in a breakthrough to be published in the January 29 advance online issue of *Nature*, Rockefeller University scientists have identified a protein that allows the virus to enter mouse cells, a finding that represents the clearest path yet for developing a much-needed vaccine as well as tailored treatments for the 170 million people across the globe living with the tenacious, insidious and rapidly changing virus.

By using a genetic screen, the group, led by Charles M. Rice, head of the Laboratory of Virology and Infectious Disease, identified a human protein, called occludin, that makes mouse cells susceptible to the virus. The discovery means that scientists now have the complete list of cellular factors — a total of four — that are required for the virus to enter nonhuman cells.

The hepatitis C virus exclusively targets human liver cells, suggesting that these cells express genes that allow uptake of the virus, genes that are not expressed in other human and nonhuman cells, explains Rice. In past years, three proteins — CD81, CLDN1 and SR-BI — were identified as having key roles in shuttling the virus into cells, but something was clearly missing. Rice's group found that even when they engineered mouse cells to overexpress all three proteins, the cells still denied the virus entry.

The discovery of occludin, however, has changed that. When Rice and his colleagues engineered mouse and human cell lines to express all four proteins, they showed that each cell line became infectible with the virus. To further establish occludin's role as a required entry factor, the group showed that human liver cells naturally express high levels of occludin, and that by silencing its expression, they could give these once highly susceptible liver cells the ability to completely block infection.

Since mice and humans each have a species-specific version of the four factors, the group used hamster cells to see which combination of factors did the best job at making the cells infectible. They found that in the case of two of the proteins, occludin and CD81, only the human versions worked; for SR-BI and CLDN1, the human and mouse versions did an equally good job. These experiments not only suggest that there may be more than one potential animal model, but also that there are several specific combinations of entry factors that could generate them.

"This work provides a clear foundation upon which we can now begin to construct an animal model for the uniquely human pathogen," says Rice. "This is only a first step but in terms of creating an animal model for hepatitis C, it's a big leap forward."

http://www.innovations-report.com/html/reports/life_sciences/discovery_lead_a_animal_model_hepatitis_c_126372.html

Pet Care on a Budget

With the economy stumbling, the prospect of hundreds of dollars a year in cat care may seem daunting. But don't worry: There are plenty of ways to defray the cost of owning a cat without compromising your pet's well-being.

In fact, some of the most effective strategies will actually benefit your cat. As Jodi Korich, DVM, director of Partners in Animal Health at Cornell University's College of Veterinary Medicine explains, "One of the best ways to save money on your pet's health is to pay attention to early disease detection and preventive health care." Just like oil changes and preventive maintenance result in fewer repair bills for your car, she says, regular check-ups and early intervention will save you money in the long run.

Why Dental Care is So Important

Dental hygiene tops Dr. Korich's list of money-saving health care. Dental disease is the most common malady cats suffer, afflicting fifty percent of all cats. Learning to brush your cat's teeth at home can make a tremendous difference in your cat's oral health. While it's not easy to become an expert at cat-brushing, it costs little and can save a lot.

Early intervention is equally important. Because you know your cat better than anyone, you're in the best position to spot subtle changes that might indicate a medical problem. Don't ignore something small in the hopes that it will go away because the cost of a cure gets larger the bigger the problem gets. Make it a habit to examine your cat weekly for things like missing hair, skin bumps, tearing eyes or excessive drooling. Keep an eye out for changes in your cat's routine, such as a change in appetite or bowel habits.

Dr. Korich calls vaccinations the "ultimate in preventive medicine." Fatal diseases like feline leukemia can cost \$1,000 to treat — versus less than \$20 for the vaccine to prevent it. And since some vaccines can now be given every three years instead of annually, you may be able to save money on the vaccinations too.

Ask your vet's office if they offer payment plans or pet insurance. Depending on your cat's health care needs, such plans can offer significant savings. One local animal hospital offers a membership plan that's pay-by-the-month and includes vaccinations and an annual exam, saving you money and easing your monthly cash flow.

Another good way to avoid additional vet bills is to take care of your cats' nails yourself. Since professionals recommend trimming your cats' nails every two weeks or so, doing it yourself can add up to a lot of savings over the course of a year.

Feed for Best Health

You don't need to spend extra money on vitamins and supplements (unless prescribed by your vet) if you choose a well-balanced commercial cat food. And make sure you're giving your cat the appropriate serving of cat food for its size and age. Keeping your cat at its ideal weight will prolong its life as well as save you money in grocery bills.

If you're currently using a premium cat food, consider switching to a slightly less expensive brand or to a dry food that comes packaged in bulk. Be sure to make any change gradually, starting with a little of the new food and shifting the proportions over the course of a week. Dry food can be moistened with water to make the adjustment easier.

Litter can be another grocery bill buster. Choosing a less expensive brand is one solution; or you can stock up on litter when you find it on sale. Since cats are not always keen to switch litters, mix in some of the new litter with the old gradually, so that your cat gets used to the difference in texture and smell.

Because the number of cats owned in this country is counted in the tens of millions, cat products are a big business. But before you reach for that cat fountain, ask yourself whether you can do without or make your own. Rather than buying cat bathing wipes, try a warm, damp washcloth to clean your cat instead. Instead of investing in hair removal tape for your couch, brush your cat and vacuum more often. Or lay a washable cloth on the spot where your cat prefers to lounge.

Don't buy expensive toys that your cat might not like — make your own. Because feline eyes focus best on movement rather than detail, cats are just as happy to bat at a homemade toy as at a \$20 colored toy. A balled-up piece of paper costs nothing and can give your cat hours of delight. Cats especially like the faint skittering noises wadded paper makes across a bare floor, reminiscent of the sound of prey. Another popular homemade toy is a knotted sock tied to a string (though be careful your cat doesn't try to eat the string itself). A cardboard toilet paper roll is amusing to many cats.

Last but not least, make sure your cat gets the exercise it needs to keep trim and content. Spend time playing with your cat. This costs nothing, and since a happy cat is a healthy cat, you, your cat and your pocket book will all benefit.

By Linda Beltz Glaser http://www.catwatchnewsletter.com/issues/13_2/features/140870-1.html

Hollywood Celebrities Lose Battle Over Zoo's Elephant

Cher, Bob Barker, and Lily Tomlin were among Hollywood celebrities at a Los Angeles City Council meeting in downtown LA, urging council members to stop completion of the LA Zoo \$42 million Pachyderm Forest, an elephant habitat at the zoo, and transfer the lone elephant to an animal sanctuary.

Cher was quoted as saying because it's always been done this way and there have always been elephants at the city zoo, doesn't make it right. Cher continued, "We've had other things that we're ashamed of. We've had slavery, you know, it wasn't right."

The LA Zoo won the debate. Quote of the day belongs to zookeeper Joshua Sisk: "No disrespect to Bob Barker, Halle Berry, Cher or any of these people but if you want to know about acting or game shows, talk to the celebs," he said. "If you want to talk about animal care, talk to the professionals."

Source: Access Hollywood

News from the United Horseman Front

In a significant victory for horses and the horse industry, the National Conference of State Legislatures (NCSL) overwhelmingly passed a resolution urging Congress to recognize the need for humane horse processing facilities in the United States, and to oppose any federal legislation that would restrict those facilities or related sale and transport of horses. The vote, spearheaded by Rep. Sue Wallis of Wyoming and Rep. Dave Sigestead of South Dakota, took place at the annual NCLS forum December 11-13 in Atlanta, GA. The NCLS is a bi-partisan organization that represents legislators and legislative staff from all 50 states, and is a respected voice for state government before Congress and federal agencies. Read the [NCSL News Release Here](#) and the [NCSL Horse Industry Policy Resolution Here](#). Reps. Wallis and Sigestead extended particular appreciation to Dr. Patricia Evans of Utah State University for her work on the unintended consequences of the ban on horse processing; former U.S. Senator Conrad Burns; and Ashton Graham, a graduate student from New Mexico State University, who presented a paper entitled "Wild Horses and Federal Tax Dollars." <http://www.unitedhorsemensfront.org/>

Pit Bulls and Rotties Lose to Lancaster CA Stupidity

The recently passed ordinance requires spaying and neutering of all varieties of pit bulls and Rottweilers, including mixed breeds that have "predominant physical characteristics" of those breeds.

The City's Mayor openly admits this ordinance was enacted as a tool against rising gang problems and has no problem violating the rights of his constituents or of innocent dogs. Mayor R. Rex Parris said in a recent interview, "I want gangs out of Lancaster. I want to make it uncomfortable for them to be here. Anything they like, I want to take it away from them. I want to deliberately harass them." Parris continued, "Even if people who are not gangbangers have their pit bulls taken away, it means that these beasts are off the streets," Parris said. "And they are indeed beasts."

Pit Bulls Win in Reading PA

The state Supreme Court left the Reading Animal Control Board without the teeth to clamp down on aggressive dog breeds.

The court refused to hear the city's appeal of an earlier ruling that threw out Reading's 10-year-old aggressive breed ordinance, effectively killing the ordinance.

The measure had imposed severe restrictions on dog breeds that bit too many people - an action not taken since 2003. In February, the Commonwealth Court ruled it violated state law banning municipalities from prohibiting or otherwise limiting a specific breed of dog.

Kenneth Steeves Sr., a city resident and pit bull owner who, with another pit bull owner, Stacie Stankiewicz, sued the city in 2000, said it's a relief the case is finally over.

HB 6 Humane Euthanasia in Shelters

Activists wasted no time having the humane euthanasia bill introduced on the second day of the legislative session. HB 6 is sponsored by Rep. Cary Allred (D, Alamance), Rep. Rick Glazier (D, Cumberland), Rep. Ty Harrell (D, Wake) and Rep. Pat McElraft (R, Carteret, Jones).

Activists and supporters continue to circulate misinformation concerning the use of gas chambers and effects on animals. Rep. Allred's misguided quote appeared in several papers: "The lethal injection method is readily available. That way the animal goes to sleep rather than gasping or suffering."

Despite what activists are selling while lobbying for this bill, an injection of sodium pentobarbital is not the most humane method for animals that are unaccustomed to being handled by humans. Activists want you to compare shelter animals to your beloved pets. However, these are not what make up the majority of animals euthanized at shelters. Many have little or no training or socialization, or are aggressive by nature, or are feral with no desire to interact with humans. A trained technician, using a properly designed and maintained chamber may in fact be performing more humane euthanasia than an individual attempting to administer an injection on a highly stressed and fearful animal. Injection also has its limitations; animals with depressed circulatory issues do better with carbon monoxide (CO) as repeated sticks with a needle to find a usable vein are neither acceptable nor humane.

In their 39-page Guideline on Euthanasia the AVMA states, "Acceptable methods are those that consistently produce a humane death when used as the sole means of euthanasia." Listed for both dogs and cats are: barbiturates; inhalant anesthetics; CO₂; CO; potassium chloride in conjunction with general anesthesia.

Carbon Monoxide (CO) is odorless, tasteless and results in rapid (and painless) unconsciousness which is why hundreds of people every year accidentally succumb to carbon monoxide poisoning from faulty home equipment.

No method is more humane than another, especially in all situations. If animal control personnel are properly trained, then humane euthanasia exists. Animal control personnel must have all scientifically approved methods available for their use. The determination of which method to use and when should be theirs based on the situation at hand and not legislated as a concession to activists.

Dog and Cat Relationships

Feuerstein N, Terkel J. Interrelationships of dogs (Canis familiaris) and cats (Felis catus L.) living under the same roof Appl Anim Behav Sci. 2008;113(1-3):150-165.

In the process of domestication, both dogs and cats have undergone genetic changes to adapt to living with humans. However, concerns over the ability of the two species to communicate are based on their separate evolutionary development and their different social structures. In this study, the interrelationships of dogs and cats living together were studied by means of a questionnaire and by direct observation of dog-cat interactions. The study found that dogs and cats have the ability to establish amicable relationships, and the ability is not based on the animal's gender. Adoption of the cat prior to the dog appeared to be conducive to establishing an amicable relationship. It is also helpful if the first encounter takes place before the age of 6 months in cats and 1 year in dogs. *Cat Health News from the Winn Feline Foundation*

California livestock law spurs group to seek protection for state farmers

Oklahoma farm and livestock groups are making a pre-emptive strike against animal rights activists. On the heels of a California initiative passed by voters in November, a handful of farm groups — backed by key lawmakers — are trying to pass a state law that would give the Legislature exclusive right to make laws about farm animal treatment. The California law puts restrictions on the poultry industry, such as giving chickens more living space, and contains other measures related to the confinement of pigs and calves. Oklahoma agriculture groups fear that supporters of the California law, such as the Humane Society of the United States and People for the Ethical Treatment of Animals, will try to put a similar question on Oklahoma's ballot. Similar livestock treatment laws have been passed elsewhere, including Florida and Arizona. Restrictions in such laws result in "a very inefficient way to raise livestock," said Sam Knipp, spokesman for the Oklahoma Farm Bureau, which is spearheading the effort. Livestock is a \$2 billion industry in Oklahoma, and the state is second in the nation in the number of cattle, trailing only Texas. <http://newsok.com>

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