

Scientists make HIV strain that can infect monkeys

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By Will Dunham

WASHINGTON (Reuters) - Scientists have created a strain of the human AIDS virus able to infect and multiply in monkeys in a step toward testing future vaccines in monkeys before trying them in people, according to a new study.

This strain of HIV, the human immunodeficiency virus, was developed by altering a single gene in the human version to allow it to infect a type of monkey

called a pig-tailed macaque, the researchers said on Monday.

The genetically engineered virus, once injected into this monkey, proliferates almost as much as it does in people, but the animal ultimately suppresses it and the virus does not make it sick, they said.

The strain is called simian-tropic HIV-1, or stHIV-1.

Researchers hope to be able to test possible new AIDS drugs and vaccines in monkeys before trying them in people.

There is a "cousin" virus to HIV called SIV, or simian immunodeficiency virus, that causes a disease similar to AIDS in certain types of monkeys.

But this monkey AIDS virus is not identical to the one that infects people and is not a perfect substitute for testing drugs and vaccines against HIV.

"If our research is taken further, we hope that one day perhaps in the not-too-distant future, we'll be able to make vaccines that are intended for use in humans and the very same product will be able to be tested in animals before human trials," Paul Bieniasz of the Rockefeller University in New York, one of the researchers, said in a telephone interview.

Scientists have struggled to create an AIDS vaccine.

"If you make a drug that's effective against HIV, sometimes it works against SIV and sometimes it doesn't. So that basically devalues SIV as an animal model for doing experiments involved with developing drugs," Bieniasz said.

"Now if you want to develop a vaccine, essentially what you have to do is to make a parallel

vaccine for HIV and for SIV. You can test the SIV vaccine in animals and then have to make the leap of faith that the same approach would work equivalently in humans."

Writing in the journal *Proceedings of the National Academy of Sciences*, the scientists said in making the genetically engineered virus they removed the HIV version of a gene, known as *vif*, and inserted the SIV version. This gene acts to thwart proteins made by the monkey that that kill viruses.

Bieniasz said the scientists may need to make additional changes in the stHIV-1 to make it better for testing vaccines.

The genetically engineered virus infects the monkeys and during the early course of infection is a reasonably good mimic of what happens in HIV-infected people, Bieniasz said.

But after initially spreading in the monkey's body, the animal succeeds in suppressing the virus -- not completely clearing the virus but driving it to very low levels.

"The slight problem is the monkeys don't go on to develop AIDS, they don't get sick," Bieniasz said.