



29 July 2012 | [MP3](#) at voaspecialenglish.com

New Research Hopes to Speed Development of HIV Vaccine

This is the VOA Special English Technology Report.

A team of scientists in the United States has created a new type of mouse that has an immune system similar to that of humans. The scientists hope their research with these mice will speed up development of a vaccine to prevent human immunodeficiency virus, or HIV.

Scientists from the Ragon Institute of Massachusetts General Hospital, Massachusetts Institute of Technology and Harvard are carrying out the new research.

Earlier research has shown that certain individuals with HIV have immune systems that do better at controlling the AIDS virus. These individuals are commonly known as "elite controllers." They often live longer with the virus and have fewer problems early on.

Todd Allen is one of the lead writers of the new study, which was published in Science Translational Medicine.

TODD ALLEN: "Some people are able to control HIV very well, to very low copies. And what we know is that they express a certain type of host genetics that dictate that they target very critical regions of the virus."

By using the new experimental mice, the researchers hope to learn what it is about the immune systems of these "elite controllers" that causes them to deal with the HIV virus better than others.

The "humanized" mice were created using stem cells and tissues from human donors. Some of this tissue was taken from liver and thymus tissue. The thymus is a large gland at the bottom of the throat. It trains T-lymphocytes, or T-cells to attack unwelcome microbes, thereby protecting the body from infection.

When the scientists infected the so-called "humanized" mice with the HIV virus, the T-cell reaction in the mice was the exact same as that of humans.

Earlier research using rhesus monkeys helped scientists understand how the virus

attacks cells. These monkeys were seen as good replacements for humans because they could be easily infected with a primate version of HIV, known as SIV.

However, genetic differences in the two versions of the virus and the immune systems suggested that the monkeys were not the best candidates for HIV research.

Todd Allen says the experiments with the new "humanized" mouse more correctly reflected what happens in humans with the AIDs virus.

TODD ALLEN: "So it allows us to take all the discoveries we've had in studying individuals infected with HIV in the different immune responses and host genetics that correlate with a better outcome, and translate that now into an animal model where we can actually further manipulate that to understand exactly how these individuals are doing that."

Mr. Allen and the other researchers hope further studies with the "humanized" mouse will lead to an HIV vaccine.

And that's the VOA Special English Technology Report, Jessica Berman and June Simms, contributing. I'm Steve Ember.