

AIDS Vaccine Progress Published in Virology

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A University of Kansas School of Medicine researcher's success developing an AIDS vaccine was reported in the August issue of the peer-reviewed journal *Virology*. Opendra Narayan, DVM, PhD, and his collaborators have successfully prevented AIDS in animal trials using a DNA vaccine.

Narayan, chairman of the department of microbiology, molecular genetics and immunology at the KU School of Medicine and Marion Merrell Dow Foundation Distinguished Professor, has spent years conducting research on the vaccine. He says this evidence that the vaccine is working represents a big step toward clinical trials.

“It is proof that a vaccine can protect animals and the hope is that by extension the vaccine will protect humans,” Narayan said.

ImmunoGenetix Therapeutics, Inc. is the exclusive worldwide licensee of the vaccine.

“These findings from Dr. Narayan's team are very exciting for the company and give us confidence to take the steps toward an Investigational New Drug status and human trials,” said Jim Laufenberg, President and CEO of ImmunoGenetix. Narayan has been a consultant with the Lenexa-based biotechnology company since its founding in 2001. He says that the path to get the vaccine on the market is not a fast one.

“To move from an animal vaccine to humans requires a lot of changes. It

is a very expensive and slow process. Once we complete justification with the FDA, then we'll head to clinical trials," Narayan says.

Narayan uses the simian/human immunodeficiency virus (SHIV), which closely resembles HIV infections in humans, to conduct animal trials. The vaccine takes the blueprint of the virus and deletes the genes that allow it to replicate. Because it is prevented from replicating, the virus can't multiply and cause AIDS once it is in the body.

The DNA vaccine is different from vaccines that use a live virus to develop immunity. Because it uses DNA and not a live virus, there would be no risk for infection. DNA vaccines are also easier to produce and store.

Narayan says the next step in his research is investigating the strength of the immunity created by the vaccine. He says the immunity is there to protect the virus from replicating and causing AIDS, not to protect from infection. Narayan will study whether the animals will have the virus for life but never develop AIDS, or if the immunity is strong enough to completely shed the virus from the body.

While this vaccine is based on the strain of HIV found in the United States, Narayan is also working on vaccines for the strains found in other parts of the world. He is already developing one for the strain found in Africa and Asia, but it hasn't gone on to animal trials yet.

According to UNAIDS, nearly 40 million people worldwide were living with HIV at the end of 2005, when an estimated 4 million people became newly infected with HIV and an estimated 3 million people lost their lives to AIDS.

The International Society for NeuroVirology awarded Dr. Narayan its 2006 Pioneer in NeuroVirology Award to recognize his

accomplishments and contributions to the field during his nearly 40 years of experience. Dr. Narayan was recently named a charter member of the newly created COBRE/INBRE/RCMI review panel at the National Center for Research Resources, a division of the National Institutes of Health.

Source: University of Kansas School of Medicine

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