

Roots of AIDS Virus May Be Ancient

September 17, 2010 11:15 AM Keith Brannon

kbrannon@tulane.edu

The HIV-like virus that infects monkeys is thousands of years older than previously thought, according to a new study led by researchers from Tulane University.

Simian immunodeficiency virus (SIV), which is the ancestor to the human immunodeficiency virus (HIV), is between 32,000 and 75,000 years old and may even be more than a million years old, according to genetic analysis of SIV strains found in monkeys on Bioko, an island off the coast of Africa.

The research, which appears in the current issue of *Science*, calls into question theories that the virus is only a few hundred years old, says virologist Preston Marx of the [Tulane National Primate Research Center](#) who led the study in conjunction with Michael Worobey, evolutionary biologist at the University of Arizona.



Tulane virologist Preston Marx explains how a small island off the coast of Africa helped scientists unlock the genetic clues to reveal the ancient age of SIV, the simian ancestor to the virus that causes AIDS. View the video produced by Keith Brannon.

Marx tested DNA samples from monkey populations that had been isolated for thousands of years on Bioko, a former peninsula that separated from mainland Africa after the Ice Age more than 10,000 years ago. Researchers found four different strains of SIV that were highly genetically divergent from those found on the mainland.

They compared DNA sequences of the viruses with the assumption that they were tracking how both evolved over 10,000 years. The computer modeling showed the rate of mutation to be much slower than previously thought, indicating that virus would have to be between 32,000 and 75,000 years old to have evolved to its current state.

The research has implications for HIV. Simian immunodeficiency virus, unlike HIV, does not cause AIDS in most of its primate hosts. If it took thousands of years for SIV to evolve into a primarily non-lethal state, it would likely take a very long time for HIV to naturally follow the same trajectory, [Marx](#) says.

Other Tulane co-authors of the study include Meredith Hunter, lab manager at the Tulane National Primate Research Center; Clint Coleman, post-doctoral fellow at the Tulane Cancer Center; and researchers Paul Telfer, Michael J. Metzger and Patricia Reed.