

Ancestor of HIV in primates may be surprisingly young

May 1 2009

The ancestors of the simian immunodeficiency viruses (SIVs) that jumped from chimpanzees and monkeys, and ignited the HIV/AIDS pandemic in humans, have been dated to just a few centuries ago. These ages are substantially younger than previous estimates, according to a new study from The University of Arizona in Tucson, published May 1st in the open-access journal *PLoS Computational Biology*.

SIV has crossed over from [chimpanzees](#) and sooty mangabeys to humans at least eleven times, giving rise to several HIV lineages. Although HIV is a virulent pathogen in humans, SIV rarely causes disease in these species or the dozens of other African primate species it naturally infects. That these non-human primates typically remain unaffected after virus exposure has led to the hypothesis that there had been millions of years of coevolution between SIVs and their primate hosts.

The researchers, Joel Wertheim and Dr. Michael Worobey, estimated a rate of virus evolution using viral genetic sequences that had been isolated from infected humans, chimpanzees, and sooty mangabeys between 1975 and 2005. They inferred that the viruses currently circulating in sooty mangabeys and in chimpanzees evolved from ancestors dating to 1809 (1729) and 1492 (1266), respectively.

Surprisingly, the independently estimated 'molecular clock' of the monkey viruses was virtually identical to the famously swift rate at which mutations accumulate in HIV genomes.

The authors note that unaccounted-for biases could be masking a deeper age of SIV. They suggest that if these biases do exist, their causes need to be investigated because they might also affect the ability to properly estimate the age of HIV and other viruses.

The authors have declared that no competing interests exist.

More information: Wertheim JO, Worobey M (2009) Dating the Age of the SIV Lineages That Gave Rise to HIV-1 and HIV-2. *PLoS Comput Biol* 5(5): e1000377. doi:10.1371/journal.pcbi.1000377, [dx.plos.org/10.1371/journal.pcbi.1000377](https://doi.org/10.1371/journal.pcbi.1000377)

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Citation: Ancestor of HIV in primates may be surprisingly young (2009, May 1) retrieved 28 April 2024 from <https://medicalxpress.com/news/2009-05-ancestor-hiv-primates-surprisingly-young.html>

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