New Drug Fights HIV and Many Other Viruses

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Researchers found a new antiviral drug that appears to effectively target not only HIV, but also Ebola, influenza and Rift Valley fever, according to a study published online January 28 in the *Proceedings of the National Academy of Sciences*.

Researchers have been increasingly focused on finding antibiotics called “broad spectrum” antibiotics, which are effective against many different types of bacteria. Thus far, however, few broad spectrum antivirals have been discovered. Most available antiviral drugs tend to be effective against only one disease or a particular family of viruses.

LJ001, discovered by researchers at the University of California in Los Angeles (UCLA), the University of Texas at Galveston, Harvard University, Cornell University and the Army Medical Research Institute of Infectious Diseases, may be one such broad spectrum antiviral. Derived from an acidic chemical called rhodanine, it was uncovered by sifting through a library of more than 30,000 compounds.

LJ001 appears, thus far, to be effective against a host of viruses, including HIV, influenza A and Ebola. UCLA will patent the compound.

As the researchers were testing LJ001, they realized it was effective only against viruses with fatty membranes that interact with human cells. LJ001 also appears harmful to cell membranes, but cell membranes can repair themselves while viral membranes cannot. In turn, the researchers believe the compound could be safe for humans, while still effective at killing viruses.

Though LJ001 is nontoxic at doses that kill viruses in animals, more testing will be needed to determine whether it’s safe for humans. The researchers also haven’t yet determined exactly how the compound is able to deactivate the viral membrane.