Starving HIV of Sugar Halts Virus's Replication

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HIV, which requires considerable sugar stores to replicate in CD4 cells, cannot copy itself once its sugar supply has been cut off, the International Business Times reports. Publishing their findings in PLOS Pathogens, researchers identified, in a laboratory setting, the method by which CD4s deliver the necessary sugar to the virus in the cell and then fashioned a method to switch off that system.

The CD4 cell opens its sugar stores by turning on a component of itself known as phospholipase D1, or PLD1. The investigators constructed a compound to block PLD1 and stop the flow of sugar to the virus, thus starving it to death.

"This compound can be the precursor for something that can be used in the future as part of a cocktail to treat HIV that improves on the effective medicines we have today," corresponding study author Harry Taylor, PhD, a research assistant professor in medicine at Northwestern University Feinberg School of Medicine, said in a press release. "It's essential to find new ways to block HIV growth, because the virus is constantly mutating. A drug targeting HIV that works today may be less effective a few years down the road, because HIV can mutate itself to evade the drug."

The researchers believe that this compound, if tested in humans, will likely prove less toxic than today's antiretroviral arsenal. In their current research, they found that the compound also slowed the abnormal activation of immune cells. The result of such a shift may be a reduction of the chronic inflammatory state that has many harmful effects on the body, such as organ damage.

To read the International Business Times article, click here.

To read the press release, click here.

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