Long-Lasting HIV Nucleoside Analogue in Development

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A research team from the University of Missouri at Columbia is developing a novel nucleoside reverse transcriptase inhibitor (NRTI) that remains active against HIV for days after a single dose, according to a report published online by ScienceDaily. Stefan Sarafianos, PhD, who heads to the MU team, said the compound is more potent and longer-lasting than current NRTIs and may find use not only as a component of antiretroviral (ARV) therapy but also as a preventive microbicide.

“This new compound, EFdA, is 60,000 times more potent than any other drug that is currently being used to treat HIV,” said Sarafianos, assistant professor of microbiology and immunology in the MU School of Medicine and an investigator in the Christopher Bond Life Sciences Center. “This compound has a different chemical makeup than other approved therapies and creates an exceptional amount of antiviral activity. EFdA is activated very quickly and stays long in the body to fight the virus and protect from infection.”

The U.S. Food and Drug Administration has approved eight NRTIs, but the meds can protect cells for only short periods of time. With EFdA, Sarafianos said, patients could be protected for two days instead of few hours and would not need to take the drug as often.

In addition to EFdA’s potential as a therapeutic agent, Sarafianos hopes the experimental NRTI can double as a preventive agent in the form of a gel or cream, providing additional protection during vaginal and anal sex.

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