

A Cure for HIV Could Be All in the 'Mix'

ScienceDaily (Aug. 19, 2010) — Current HIV treatments do not eradicate HIV from host cells but rather inhibit virus replication and delay the onset of AIDS. However, a new research study published in BioMed Central's open access journal, *AIDS Research & Therapy* describes an innovative approach to eliminate HIV in host by targeted killing of only HIV infected cells. This approach if successful could lead into an anti-HIV therapy that will eradicate the virus.

On infection, HIV spreads through the human body after the viral DNA is incorporated into the genome of host cells. Highly Active Anti-Retroviral Therapy (HAART) works by blocking HIV replication at various steps but does not eliminate the infected cells.

Professors Abraham Loyter, Assaf Friedler and their colleagues at Hebrew University, Jerusalem, focussed on the elimination of infected cells. Prof. Loyter contends that while HIV integrates its DNA into the human genome, it only inserts enough DNA to replicate yet avoids host genome instability leading to programmed death of the infected cells (apoptosis).

Dr. Loyter and his team sought to induce increased integration of HIV DNA into human genome that could lead to apoptosis. Toward that goal, they developed peptides (called "mix") that can penetrate into infected cells and stimulate the activity of the viral integrase. The stimulation of the viral integrase resulted in an increase in the number of the viral DNA molecules integrated into the infected cells that lead the infected cells into "panic mode," causing self-destruction.

Dr Loyter said: "Whilst this research is promising, a major caveat with these studies is that they are preliminary. So far these experiments have only been shown to 'cure' HIV from small dishes of cultured cells in the authors' laboratory, but the findings are an exciting development in the quest to eradicate this devastating global pandemic."

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Journal Reference:

- . Aviad Levin, Zvi Hayouka, Assaf Friedler and Abraham Loyter. **Specific eradication of HIV-1 from infected cultured cells.** *AIDS Research and Therapy*, 2010; (in press) [[link](#)]

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