

How HIV keeps hiding

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Researchers have found a way to explain how the human immunodeficiency virus (HIV) can be kept dormant and hidden in immune cells. Their findings, published online by *The EMBO Journal* suggest new potential therapeutic approaches for viral eradication from infected patients.

Current combined antiviral therapies that target essential components of replicating HIV fail to achieve complete eradication of the virus from infected patients. This is due in part to the presence of rare cells harboring silent copies of the HIV virus - a dangerous reservoir of literally "invisible" virus that might potentially reactivate and seed a new infection.

Warner C. Greene and colleagues report on a significant progress towards the understanding of the molecular mechanisms responsible for maintenance of HIV latency. Specifically, the team demonstrate that viral gene expression is actively repressed by the inhibitory NF-kappaB p50 protein. This inhibition is mediated by an enzyme called HDAC1, which is capable of shutting down gene expression in its vicinity. Interestingly, counteracting the inhibitory effect of HDAC1 by pharmacological agents is not sufficient to reactivate dormant HIV. To reach full viral gene expression, additional help by the viral protein Tat is required.

These findings suggest that combination of HDAC inhibitors and Tat might be a potential strategy to awaken dormant HIV and eliminate the latent reservoir of "invisible" virus.

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