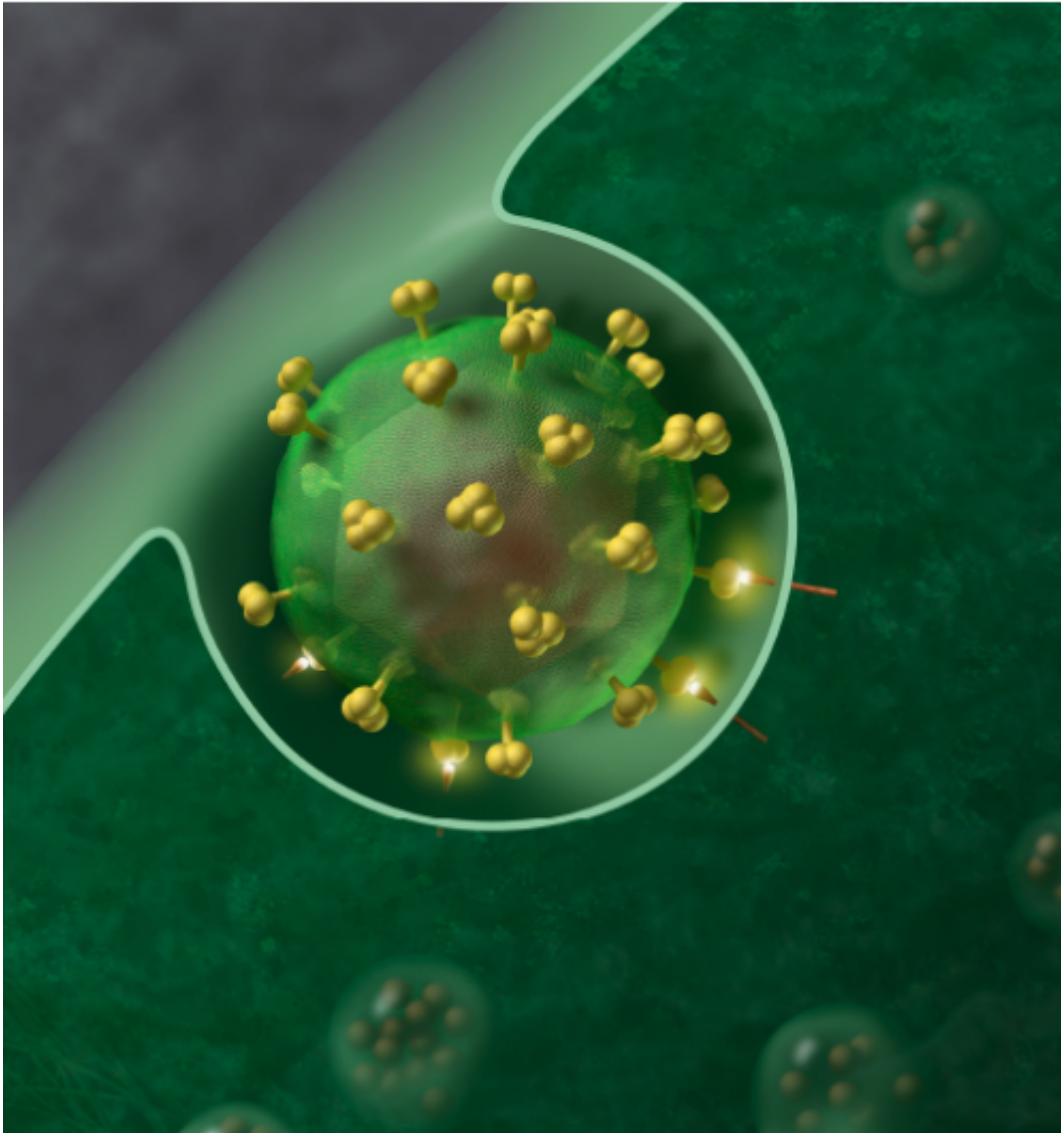


# Restricting HIV-1 infection

September 4 2017, by Leigh Macmillan

---



HIV-1 Virus. Credit: J Roberto Trujillo/Wikipedia

The HIV-1 capsid protein (CA) interacts with viral factors that support infection and host factors that restrict it. The host protein cyclophilin A (CypA) binds to CA and enhances the action of host restriction factors that block HIV-1 infection.

Christopher Aiken, Ph.D., and colleagues investigated how CypA potentiates the action of the restriction factor TRIM5alpha in African green monkey cells. They did not find evidence of a role for CypA in promoting binding of TRIM5alpha to the viral capsid or inhibiting reverse transcription of the [viral genome](#).

Instead, the investigators observed a CypA-dependent reduction in the accumulation of nuclear HIV-1 DNA, suggesting that CypA promotes TRIM5alpha inhibition of HIV-1 nuclear import. They reported their findings in the journal *PLOS ONE*.

The authors propose that CypA uses a common mechanism involving interactions of the virus with nuclear pore components to potentiate restriction of HIV-1 infection by TRIM5alpha and other capsid-targeting inhibitors.

**More information:** Mallori Burse et al. Cyclophilin A potentiates TRIM5 $\alpha$  inhibition of HIV-1 nuclear import without promoting TRIM5 $\alpha$  binding to the viral capsid, *PLOS ONE* (2017). [DOI: 10.1371/journal.pone.0182298](#)

Provided by Vanderbilt University

Citation: Restricting HIV-1 infection (2017, September 4) retrieved 28 June 2024 from <https://phys.org/news/2017-09-restricting-hiv-infection.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.