

# New ways to pressure HIV

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Two new studies showing that protein bits produced by unusual "reading" of the HIV genome can induce immune responses will appear online in the *Journal of Experimental Medicine* on Jan. 11.

Small, compact RNA viruses like HIV make the most of their limited genomes by stuffing genes that direct protein production into several different reading frames and orientations. When teams—led by Berger et al. at the Ragon Institute of MGH, MIT, and Harvard; and Bansal et al. at the University of Alabama—examined viral genomes in groups of HIV-infected individuals, they found an accumulation of genetic variations specifically in unusual reading frames and orientations. This finding suggested that mutations in these reading frames may have been caused by pressure from the hosts' immune systems.

The notion was supported by their finding that HIV-infected individuals exhibited killer immune cell responses specific for protein fragments generated by unconventional reading of the HIV genome. In some cases, [mutations](#) in these reading frames allowed HIV-infected cells to escape immune cell killing.

The information provided by these findings may prove useful during future HIV vaccine design efforts.

**More information:** -- Bansal, A., et al. 2010. *J. Exp. Med.* [doi:10.1084/jem.20091808](https://doi.org/10.1084/jem.20091808) />-- Berger, C., et al. 2010. *J. Exp. Med.* [doi:10.1084/jem.20091808](https://doi.org/10.1084/jem.20091808)

Provided by Rockefeller University

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