Science Advancement & Outreach
A DIVISION OF PETA

1536 16th St. N.W., Washington, DC 20036

November 13, 2025

Dear Members of the Office of AIDS Research Advisory Council:

I am writing as a cellular biologist and Research Associate with the Science Advancement and Outreach Division at PETA to urge the Office of AIDS Research (OAR) to align its upcoming strategic plan with NIH's April 2025 announcement to expand support for non-animal methods (NAMs). With OAR currently developing its new strategic plan, now is the time to set the direction for the next four years by prioritizing human-relevant, non-animal approaches to HIV and AIDS research.

1. **End the use of animals in HIV/ AIDS Research**

After more than three decades of animal-based HIV research, there is still no vaccine or cure. This continued reliance on animal models—especially nonhuman primates—is scientifically unjustifiable. Only humans contract HIV and develop AIDS, and fundamental biological differences between humans and other species, including in CD4 receptor structure,[1] leukocyte antigen genes,[2] and retrovirus restriction factors,[3] prevent animals from accurately modeling human infection and immune response.[4]

These limitations have led to decades of data that fail to translate to humans, diverting resources from more predictive, human-based approaches. In contrast, human based models—including those based on human tissues and cells, patient data, computational modeling, and advanced genomic analyses—are already being used to test potential therapeutics,[5,6,7,8] uncover structural and functional details of the HIV virus,[9] and clarify key biological differences between people living with and without HIV.[10,11,12,13] These approaches are also helping scientists understand how "HIV controllers" naturally suppress the virus without treatment—insights that could inform new therapeutic strategies for others.[14,15,16,17,18]

With NIH now investing in NAM-focused infrastructure—including the Standardized Organoid Modeling Center[19] and initiatives to expand funding and training in human-relevant science[20]—OAR has a pivotal opportunity to lead by example and end its reliance on animal models.

2. **Establish dedicated opportunities for NAMs in HIV/AIDS research**

Although NAMs are already generating important discoveries in the HIV/AIDS field, greater institutional support is needed to scale and integrate these technologies. OAR should:

- Create **dedicated funding streams** for HIV/AIDS studies using non-animal, human-relevant methods.

- Develop a publicly accessible repository of human-relevant data, tools, and models to support collaboration and advance non-animal approaches in HIV/AIDS research.
- Support **collaborative centers** that combine expertise in human virology, immunology, and bioengineering to accelerate HIV research.

3. **Provide training and support for researchers transitioning to NAMs**

Many HIV researchers were trained primarily using animal models and face significant barriers in learning and adopting new methods. OAR can help bridge this gap by:

- Establishing training grants and fellowships focused on human-relevant models of HIV and AIDS.
- Partnering with academic institutions to develop continuing education programs in NAMs.
- Offering early independence and transition awards for scientists committed to replacing animal experiments with human-based approaches.

By supporting these initiatives, OAR can ensure that its next strategic plan positions the field to deliver more predictive, human-specific discoveries, thereby accelerating progress toward ending the HIV/AIDS epidemic and improving human health outcomes.

Thank you for considering these recommendations.

Sincerely,

Gabby Vidaurre

Gabby Vidaurre, Ph.D.
Research Associate
gvidaurre@peta.org

[1] Humes D, Emery S, Laws E, Overbaugh J. A Species-Specific Amino Acid Difference in the Macaque CD4 Receptor Restricts Replication by Global Circulating HIV-1 Variants Representing Viruses from Recent Infection. *J Virol*. 2012;86(23):1247212483. doi:10.1128/JVI.02176-12

[2] Kumar N, Chahroudi A, Silvestri G. Animal models to achieve an HIV cure. *Curr Opin HIV AIDS*. 2016;11(4):432-441. doi:10.1097/COH.0000000000000290

[3] Song B, Javanbakht H, Perron M, Park DH, Stremlau M, Sodroski J. Retrovirus Restriction by TRIM5α Variants from Old World and New World Primates. *J Virol*. 2005;79(7):3930-3937. doi:10.1128/JVI.79.7.3930-3937.2005

[4] Hu SL. Non-human primate models for AIDS vaccine research. *Curr Drug Targets Infect Disord*. 2005;5(2):193-201. doi:10.2174/1568005054201508

[5] Deeks HM, Walters RK, Hare SR, O'Connor MB, Mulholland AJ, Glowacki DR. Interactive molecular dynamics in virtual reality for accurate flexible protein-ligand docking. Paci E, ed. *PLoS One*. 2020;15(3):e0228461. doi:10.1371/journal.pone.0228461

[6] Baassi M, Moussaoui M, Soufi H, et al. Towards designing of a potential new HIV-1 protease inhibitor using QSAR study in combination with Molecular docking and Molecular dynamics simulations. Ghosh A, ed. *PLoS One*. 2023;18(4):e0284539. doi:10.1371/journal.pone.0284539

[7] Zhang YJ, Chen L, Xu J, et al. Evaluation of novel HIV-1 protease inhibitors with DRV-resistance by utilizing 3D-QSAR molecular docking and molecular dynamics simulation. *New J Chem*. 2022;46(45):21885-21897. doi:10.1039/D2NJ04492G

[8] Wang R, Zheng Q. Multiple molecular dynamics simulations and energy analysis unravel the dynamic properties and binding mechanism of mutants HIV-1 protease with DRV and CA-p2. *Microbiol Spectr*. 2022;10(2):e0074821. doi:10.1128/spectrum.00748-21

[9] Saha I, Saffarian S. Dynamics of the HIV Gag lattice detected by localization correlation analysis and timelapse iPALM. *Biophys J*. 2020;119(3):581-592. doi:10.1016/j.bpj.2020.06.023

[10] Xie G, Luo X, Ma T, et al. Characterization of HIV-induced remodeling reveals differences in infection susceptibility of memory CD4+ T cell subsets in vivo. *Cell Rep*. 2021;35(4):109038. doi:10.1016/J.CELREP.2021.109038/ATTACHMENT/DD9335E3-A2AE-4B21-B703-B888B3ACCC05/MMC1.PDF

[11] Collora JA, Liu R, Pinto-Santini D, et al. Single-cell multiomics reveals persistence of HIV-1 in expanded cytotoxic T cell clones. *Immunity*. 2022;55(6):1013-1031.e7. doi:10.1016/j.immuni.2022.03.004

[12] Ma T, McGregor M, Giron L, et al. Single-cell glycomics analysis by CyTOF-Lec reveals glycan features defining cells differentially susceptible to HIV. *eLife*. 2022;11:e78870. doi:10.7554/eLife.78870

[13] Wang XM, Zhang JY, Xing X, et al. Global transcriptomic characterization of T cells in individuals with chronic HIV-1 infection. *Cell Discov*. 2022;8(1):29. doi:10.1038/s41421-021-00367-x

[14] Galperin M, Farenc C, Mukhopadhyay M, et al. CD4 + T cell–mediated HLA class II cross-restriction in HIV controllers. *Sci Immunol*. 2018;3(24):eaat0687. doi:10.1126/sciimmunol.aat0687

[15] Claireaux M, Robinot R, Kervevan J, et al. Low CCR5 expression protects HIV-specific CD4+ T cells of elite controllers from viral entry. *Nat Commun*. 2022;13(1):521. doi:10.1038/s41467-022-28130-0

[16] Etemad B, Sun X, Li Y, et al. HIV post-treatment controllers have distinct immunological and virological features. *Proc Natl Acad Sci USA*. 2023;120(11):e2218960120. doi:10.1073/pnas.2218960120

[17] Real LM, Sáez ME, Corma-Gómez A, et al. A metagenome-wide association study of HIV disease progression in HIV controllers. *iScience*. 2023;26(7):107214. doi:10.1016/j.isci.2023.107214

[18] Kennedy BD, Blazkova J, Justement JS, et al. Comprehensive analysis of HIV reservoirs in elite controllers. *J Clin Invest*. 2023;133(3):e165446. doi:10.1172/JCI165446

[19] National Institutes of Health. NIH establishes nation's first dedicated organoid development center to reduce reliance on animal modeling. September 25, 2025. Accessed November 6, 2025. https://www.nih.gov/news-events/news-releases/nih-establishes-nations-first-dedicated-organoid-development-center-reduce-reliance-animal-modeling

[20] National Institutes of Health. NIH to prioritize human-based research technologies. April 29, 2025. Accessed May 2, 2025. https://www.nih.gov/news-events/news-releases/nih-prioritize-human-based-research-technologies