In Potential Vaccine Breakthrough, Antibody Response Outwits HIV

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A new discovery could prove a major stepping-stone toward developing an effective HIV vaccine. In South Africa, two women's immune systems reacted to changes in HIV cells by producing potent "broadly neutralizing antibodies" that could kill 88 percent of HIV found throughout the world. The study, published October 24 in Nature Medicine and highlighted in a news release by the University of the Witwatersrand in Johannesburg, was conducted by the Centre for the Aids Programme of Research in South Africa (CAPRISA) consortium. The researchers found that, after infection, the two women's immune systems initially produced less potent antibodies that pressured the virus to cover a key point of its surface with sugar, or "glycan." This position on the cell became an Achilles' heel, prompting the development of broadly neutralizing antibodies that effectively targeted the site. This scientific know-how could prove crucial to what CAPRISA scientists envision as a sequential series of vaccinations that would mimic this co-evolution between HIV and the body's immune response—but without the actual presence of the virus—and result in the creation of broadly neutralizing antibodies.

To read the University of the Witwatersrand news announcement, click here.

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