Treatment: A Promising Anti-HIV Molecule

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Scientists have created a powerful molecule that blocks SIV (HIV's simian cousin) from infecting monkeys' immune cells and that may work as a long-acting treatment and a vaccine for HIV in humans. Before infecting a cell, HIV and SIV first make contact by latching onto the CD4 receptor on the cell's surface, and then to the adjacent CCR5 receptor. The researchers took an antibody-like molecule that attaches to the CD4 receptor and connected it with a protein fragment that binds tightly to CCR5. The idea was to block the virus's attempt to connect to immune cells. Next, they created genetic instructions for primate cells to manufacture this structure and inserted the coding into a harmless virus that could integrate it into those cells. Four monkeys received the treatment, and four did not. After multiple SIV exposures, none of the treated monkeys contracted the virus; all the control animals did.

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