

Study may lead to novel HIV treatment

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U.S. research on signaling pathways in immune cells bolsters evidence of connections between the central nervous system and the immune system.

Researchers at the Children's Hospital of Philadelphia and the University of Pennsylvania say their cell culture study's findings might advance the scientific foundation for a potential HIV treatment that may block the virus that causes AIDS.

The team, led by Dr. Steven Douglas, chief of immunology at the hospital, analyzed neurokinin-1 receptors found on the surfaces of monocytes -- immune cells that develop into macrophages. The neurokinin-1 receptors, NK-1R, are docking sites for substance P, a well-known neurotransmitter that plays important roles in both immune function and the nervous system.

"We postulate that blocking NK-1R may send signals to turn off (a) receptor for HIV, closing the door to the virus," said Douglas.

"Underlying the signaling mechanisms are the questions, 'how does the immune system talk to the nervous system?' and 'how does the nervous system talk back?' Substance P is a link between both systems, and this study increases our understanding of those underlying questions."

The study is detailed online in the Proceedings of the National Academy of Sciences.

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