A New Way That HIV Exploits the Immune System

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HIV uses a viral protein to manipulate the immune system into suppressing natural antiviral responses so it can more easily establish an infection. Researchers published their findings in PLOS Pathogens and presented them at 8th International AIDS Society Conference on HIV Pathogenesis, Treatment and Prevention in Vancouver, British Columbia.

The immune system's first line of response to a viral infection is a group of proteins known as type-1 interferons, most of which are produced by immune cells known as plasmacytoid dendritic cells (pDCs).

When pDCs encounter HIV-infected immune cells, a protein on the infected cells' surface called BST2 binds to and activates a receptor on the pDCs called ILT7. This sends a signal that suppresses interferon production.

BST2 also traps onto the cell surface copies of HIV emerging from infected cells, which prevents the virus from spreading. However, HIV uses a viral protein called Vpu to counteract this roadblock.

In this study, researchers found that HIV uses Vpu to both maintain BST2's connection with ILT7, thus suppressing interferon, and also to keep BST2 from stopping new copies of the virus from exiting infected cells.

To read a press release on the study, click here.

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