“Super Receptor” on Immune Cells May Hold Key to HIV Cure Research

Scientists found this receptor on the CD4 cells of so-called elite controllers of the virus.

June 19, 2018 By Benjamin Ryan

The discovery of a so-called super receptor on the surface of CD4 immune cells found in what are known as elite controllers of HIV may help in future efforts in the HIV cure research field.

Publishing their findings in Science Immunology, researchers studied 15 individuals who belong to a small group of people living with HIV—less than 1 percent of the overall population of those living with the virus—whose immune systems are able to control the virus quite well without the use of antiretrovirals. The researchers used a powerful microscope—it is the size of a football stadium—to analyze these individuals’ immune cells. The participants were selected from the ANRS CO21 CODEX cohort.

The researchers found that these individuals retained higher-quality CD4 cells even in the face of long-term HIV infection. Additionally, their CD4 cells were able to root out and mount a response to slight traces of HIV in the body.

These individuals’ CD4 cells, which could assume the effective role of killer CD8 cells and attack and control the virus, shared a key trait: They had super receptors on their surface. These receptors are able to recognize fragments of virus that are bound to molecules known as human leukocyte antigens. Such molecules help the immune system recognize pathogens such as HIV.

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

To read the study abstract, click here.
