

Search and destroy: CAR-T cell therapy could give patients HIV immunity

A UCLA-led research team has [created](#) blood-forming stem cells that can carry a gene that allows the body to produce cells that can detect and destroy HIV-infected cells. The blood-forming cells, called hematopoietic stem and progenitor cells, or HSPCs, have been engineered to carry chimeric antigen receptor, or CAR, genes that allows the production of immune cells that target cells infected with HIV.

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This suggests that they have the potential to give people long-term immunity from HIV, the virus that causes AIDS.

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HIV uses a molecule called CD4 to infect cells in the body. So the researchers used a CAR molecule, which contains part of the CD4 molecule, to hijack the essential interaction between HIV and CD4 to make the engineered T cells target the infected cells. When the CD4 part of the CAR molecule binds to HIV, other regions of the CAR molecule signal the cell to become activated and kill the HIV infected cell.

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The approach could ultimately reduce people's dependence on antiviral medications, lower the cost of therapy and offer a way to eliminate HIV from the parts of the body where it hides. The approach also has potential for fighting other infections and malignancies.

Read full, original post: [Gene therapy using CAR T cells could provide long-term protection against HIV](#)