Success for Anti-HIV Gene Therapy in Mice

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Researchers significantly reduced HIV levels in mice with a genetic therapy that induces immune cells to better fight the virus. Publishing their results in Molecular Therapy, researchers engineered a molecule known as a chimeric antigen receptor (CAR) and inserted a gene for that molecule into blood-forming stem cells, which they transplanted into mice genetically engineered to have human immune systems.

The CAR is a two-part receptor that recognizes an antigen (such as HIV) and in this case instructs immune cells to locate and kill HIV-infected cells. Blood-forming stem cells give rise to all kinds of blood cells, including immune cells.

The transplant of the CAR-carrying blood stem cells gave rise to functional immune cells that could kill HIV in the mice. Consequently, the mice experienced an 80 to 95 percent drop in viral load.

The researchers concluded that such a genetic therapy may be feasible in HIV-positive humans. They also believe this therapeutic technique may be used to fight other diseases.

To read the press release, click here.

To read the study abstract, click here.