Programming CRISPR to fight viruses could lead to new treatments for Ebola, Zika

CRISPR is usually thought of as a laboratory tool to edit DNA in order to fix genetic defects or enhance certain traits—but the mechanism originally evolved in bacteria as a way to fend off viruses called bacteriophages. Now, scientists have found a way to adapt this ability to fight viruses in human cells.

In a recent study, Catherine Freije and Cameron Myhrvold of the Broad Institute of MIT and Harvard and their colleagues programmed a CRISPR-related enzyme to target three different single-stranded RNA viruses in human embryonic kidney cells (as well as human lung cancer cells and dog kidney cells) grown in vitro, and chop them up, rendering them largely unable to infect additional cells. If further experiments show this process works in living animals, it could eventually lead to new antiviral therapies for diseases such as Ebola or Zika in humans.

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Beyond therapeutics, the team hopes to understand more about how viruses operate—how they replicate and what parts of their genomes are most important. Using approaches like this, “you can really start to get a better picture of what parts of these viruses are, and most importantly, what really makes them tick.”

Read full, original post: Scientists Program CRISPR to Fight Viruses in Human Cells