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Key Protein May Give Ebola Virus Its Opening

Of the pathogens that keep worried scientists awake at night, few rival Ebola for ruthless¹ efficiency. The virus contains just seven genes, yet it manages to kill up to 90 percent of the people it infects. Patients typically develop fever and fatigue, then progress to seizures, delirium, and bleeding from the eyes, nose and mouth. After the onset of symptoms, death generally occurs in
5 eight to 16 days. Ebola outbreaks occur periodically in Africa, where the pathogen was first discovered in 1976. (...)

There is no cure or treatment for Ebola infection beyond supportive care. Nor do scientists fully understand how the virus infects its hosts. But in work published in the journal *Nature*, researchers from several institutions have identified a protein in host cells that appear to be essential for
10 infection. (...)

The studies greatly advance researchers' understanding of how this horrendous virus enters cells and wreaks havoc². They also suggest a possible target that may someday be used to develop drugs (...). Researchers (...) cast their nets wide to identify the new target. They began with a large collection of cells, introduced random mutations and then exposed the cells to a virus designed to
15 mimic Ebola. This virus (...) carries a protein from Ebola on its surface, but it is not deadly and so can be studied in less secure laboratories. "We asked the virus to find us cells it couldn't infect," said Kartik Chandran³. Probing these resistant cells, Dr. Chandran and his colleagues homed in on a protein, called NPC1, that appeared to be missing. Under normal circumstances, NPC1, found within a cellular compartment called the endosome, helps bring cholesterol into the cell's
20 cytoplasm, where it is necessary for healthy function. People whose cells lack the protein typically develop a disease called Niemann-Pick, in which cholesterol and other lipids build up in the liver, spleen and brain.

The researchers took cells from patients with Niemann-Pick disease and exposed them to the Ebola-like virus in the laboratory. The cells survived, further indicating that Ebola relies on NPC1 to enter
25 cells. The academics then reached out to government scientists who could conduct tests with the real virus.

By AMANDA SCHAFFER
January 16, 2012 - *The New York Times*

Sum up this article and explain the main ideas using your scientific knowledge

¹ Ruthless: sans pitié

²To wreak havoc = to destroy

³Assistant professor of microbiology and immunology at Albert Einstein College of Medicine