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Peptide Denies Cell Entry To Ebola Virus

With a newly designed peptide, scientists have developed a way to inhibit the deadly virus

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J. Biol. Chem.

A newly designed peptide prevents the Ebola virus surface glycoprotein shown from adopting this conformation, a shape the glycoprotein must have to catalyze viral fusion with cellular endosomes.

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A novel approach to fight Ebola virus uses a designed peptide to inhibit the deadly virus' entry into host cells. Ebola infection causes a rapidly progressing condition with internal and external bleeding and high fever. The disease has a high mortality rate, and there are currently no approved vaccines or therapies. Infection begins when a viral surface glycoprotein catalyzes fusion between the virus's membrane and the membrane of endosomes in host cells. C-peptides inhibit similar fusion reactions involving viruses such as HIV and SARS, but they have been ineffective against Ebola. **Kartik Chandran** and **Jonathan R. Lai** of Albert Einstein College of Medicine and coworkers have now boosted the activity of Ebola C-peptide by conjugating it to an endosome-targeting sequence (*J. Biol. Chem.*, DOI:

[10.1074/jbc.m110.207084](https://doi.org/10.1074/jbc.m110.207084)). They show that the modified peptide has potent in vitro anti-Ebola activity, and they determined its mechanism of action. The approach "is amenable to targeting other viruses whose fusion

intermediates are exposed in the endocytic pathway and will provide a useful suite of research tools to probe intermediates in the process of viral entry," Lai says.

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