

# Size-dependent Rupture of Enveloped Viruses using Amphipathic Alpha-helical Peptides

Stanford researchers have discovered that amphipathic  $\alpha$ -helical (AH) peptides that share an amino acid sequence homology to the N-terminus of HCV NS5A can rupture lipid vesicles in a size-dependent manner. Importantly, the range of vesicle sizes subject to rupture by the AH peptides encompasses the range of vesicle sizes of a significant number of enveloped viruses, rendering this approach useful to destroy viruses ex-vivo, e.g. for prevention and disinfection, as well as in-vivo in the infected individual.

Please see also the related technology "A Novel Process to Create Lipid Bilayer Membranes on Gold & TiO<sub>2</sub> Solid Supports" ([Stanford Docket S05-115](#)).

## Applications

- **Antiviral agent** — ex-vivo and in-vivo eradication of enveloped viruses such as:
  - retroviruses
  - herpes viruses
  - flavi viruses

## Advantages

- **Efficient** — this invention provides for a new way to efficiently remove a large number of viruses from blood donations.
- **Broad spectrum** — this invention provides for a novel type of broad-spectrum virucidal agent.

## Publications

- Cho NJ, Cho SJ, Cheong KH, Glenn JS, Frank CW. [Employing an amphipathic viral peptide to create a lipid bilayer on Au and TiO<sub>2</sub>](#). Journal of the American Chemical Society. 2007 Aug 22;129(33):10050-1.

## Patents

- Published Application: [WO2009014615](#)
- Published Application: [20090105151](#)
- Issued: [8,728,793 \(USA\)](#)

## Innovators

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