

Scytovirin Domain 1 Related Polypeptides

Summary (1024-character limit)

Researchers at the NCI seek licensing for novel anti-HIV peptide therapeutics. The researchers developed novel proteins for HIV inhibition. Scytovirin is a potent anti-HIV protein with two domains having strong symmetry. NCI researchers produced a much smaller, functional, scytovirin domain polypeptide – SD1 – for use as a HIV therapeutic.

NIH Reference Number

E-180-2005

Product Type

- Therapeutics

Keywords

- scytovirin, HIV, polypeptides, O'Keefe

Collaboration Opportunity

This invention is available for licensing.

Contact

- John D. Hewes
NCI - National Cancer Institute

240-276-5515

John.Hewes@nih.gov

Description of Technology

Despite therapeutic advances, human immunodeficiency virus (HIV) is still a pervasive disease, with approximately 37 million people infected worldwide. Peptides have become popular therapeutic agents, as these proteins offer structural diversity for many different diseases. Several peptides were commercially developed as HIV therapeutics, demonstrating the high potential for peptides in treating HIV.

Researchers at the National Cancer Institute developed a novel small polypeptide, known as SD1, for use as an HIV therapeutic. SD1 is derived from scytovirin, a potent anti-HIV protein isolated from the cyanobacterium *Scytonema varium*. SD1 has demonstrated low nanomolar activity against laboratory HIV strains and inhibits HIV by blocking viral fusion. SD1 is a lectin with specificity for viral envelope glycoproteins.

Potential Commercial Applications

- Anti-HIV microbicide
- Anti-HIV therapeutic

Competitive Advantages

- Small size allows for decreased immunogenicity
- Small size allows for easy synthesis using automated techniques
- Low nanomolar activity against HIV strains
- Possible activity against additional viruses due to its ability to target viral envelope glycoproteins through a lectin mechanism

Inventor(s)

Barry O Keefe (NCI), Chang-yun Xiong (NCI), James McMahon (NCI), Andrew Byrd (NCI)

Development Stage

- Basic (Target Identification)

Publications

Xiong C, et al. Potent anti-HIV activity of scytovirin domain 1 peptide [PMID: 16647158]

Patent Status

- **U.S. Patent Issued:** U.S. Patent Number 8,067,530, Issued 29 Nov 2011
- **U.S. Patent Issued:** U.S. Patent Number 8,481,255, Issued 09 Jul 2013
- **Foreign Issued:** - Patent Number 1,891,094, Issued 05 May 2010

Related Technologies

- E-017-2002

Therapeutic Area

- Infectious Diseases