

## A Triple Combination HIV Microbicide

### Summary (1024-character limit)

Three anti-HIV proteins- the antiviral lectin cyanovirin, the antiviral lectin griffithsin, and the monoclonal antibody 2G12- have been successfully expressed in the same rice seed. The co-expression allows for a low cost, stable production method for a triple anti-HIV microbicide for the prevention of HIV. The National Cancer Institute (NCI) seeks licensees for the invention microbicide and production method.

### NIH Reference Number

E-137-2016

### Product Type

- Therapeutics

### Keywords

- Microbicide, HIV, Antibody, Lectin, Antiviral, Sexually Transmitted Diseases, Acquired Immunodeficiency Syndrome, O'Keefe

### Collaboration Opportunity

This invention is available for licensing.

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### Description of Technology

The HIV-positive population continues to rise despite a worldwide decline in the rates of infection caused by human immunodeficiency virus (HIV). The HIV virus continues to spread due to a lack of effective vaccines and pre-exposure prophylaxis methods, even though the availability and effectiveness of antiretroviral therapy has helped reduce acquired immunodeficiency syndrome (AIDS)-related deaths.

Researchers at the National Cancer Institute (NCI), in collaboration with researchers at the University of Lleida, developed a triple combination microbicide for the prevention of HIV and other sexually transmitted diseases. The microbicide is comprised of an endospore, the anti-HIV monoclonal antibody 2G12, and the antiviral lectins griffithsin and cyanovirin. The researchers have generated the microbicide combination in transgenic plants as an efficient and cost-effective production method.

### Potential Commercial Applications

- Effective anti-HIV microbicide with activity against other viruses as well (HSV, HCV)

### Competitive Advantages

- Low cost, stable production method
- Stable and long-term storage compatible rice seed

### Inventor(s)

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### Development Stage

- Discovery (Lead Identification)

### Patent Status

- **U.S. Patent Filed:** U.S. Patent Application Number 62/591,569, Filed 28 Nov 2017

### Related Technologies

- E-025-2006
- E-117-1995

### Therapeutic Area

- Infectious Diseases