



High Titer Recombinant Influenza Viruses for Vaccines and Gene Therapy

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WARF: P03322US

Inventors: Yoshihiro Kawaoka

The Wisconsin Alumni Research Foundation (WARF) is seeking commercial partners interested in developing an efficient technique and system for producing high titer influenza A virus in vertebrate cells in the absence of helper virus.

Overview

Influenza is a major disease in humans that can be prevented by vaccination. Because new epidemic strains arise every year or two, the conventional influenza vaccine must be adapted almost every year, making efficient vaccine production a major objective of pharmaceutical companies.

The Invention

A UW-Madison researcher has developed an efficient technique and system for producing high titer influenza A virus in vertebrate cells in the absence of helper virus. The technology takes advantage of a reverse genetics system created by Dr. Kawaoka that allows efficient production of influenza virus for vaccines and gene therapy applications (see WARF reference number P03252US). In the technology described here, the inventor developed a new set of plasmids for use with the reverse genetics system. The plasmids contain cDNAs from a high titer influenza virus isolate; the promoter for RNA polymerase I or RNA polymerase II; and the terminator sequence for RNA polymerase I. When these constructs are transfected into host cells, the cells consistently generate high yields of infectious influenza particles.

Applications

- Influenza vaccine production
- Rapid production of attenuated live-virus vaccine during a suspected pandemic
- Vaccine vectors for gene therapy
- Viral mutagenesis studies

Key Benefits

- Greatly enhances influenza viruses as vaccine vectors
- Viruses can be engineered to express foreign proteins or immunogenic epitopes.

Additional Information

Related Technologies

- [For more information on the inventor's reverse genetics system, see WARF reference number P03252US.](#)

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