



High Titer Recombinant Influenza Viruses for Vaccines

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WARF: P06370US

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The Wisconsin Alumni Research Foundation (WARF) is seeking commercial partners interested in improved materials and methods for producing influenza virus.

Overview

Influenza is caused by the eight-segmented influenza virus. Vaccines can be used to prevent influenza, but traditional methods for producing influenza vaccine are slow and cumbersome.

To generate recombinant influenza vaccines, many researchers use an approach developed by the inventor, utilizing “reverse genetics” ([see WARF reference number P99264US](#)). In this method, plasmids containing the eight viral RNA segments, along with additional plasmids encoding proteins necessary for replication and transcription, are transfected into cell lines. Virus can then be harvested from these cells for vaccine production.

To improve yield of the H5N1 avian influenza strain and seasonal influenza viruses in cultured cells and in eggs, the typical medium used to replicate large quantities of infectious virus for vaccines, one can make what are called “6:2 reassortant viruses.” These viruses include the critical haemagglutinin (HA) and neuraminidase (NA) genes from strains circulating in the field and the six other viral RNA segments from a “harmless,” high-growing master strain.

The Invention

UW-Madison researchers have developed an improved reassortant virus for use in producing high levels of the H5N1 avian influenza strain, as well as seasonal influenza strains. They discovered that using the NA segment from a “harmless” strain that grows well in eggs resulted in significantly greater amounts of infectious virus in eggs or cell lines. The inventors found that using a different isolate of this strain as a source for the other six viral segments also improves yield.

Applications

- Production of influenza virus for viral mutagenesis studies, vaccine production and gene therapy

Key Benefits

- Provides improved methods for making vaccines against H5N1 and seasonal influenza
- Results in a more than 10-fold increase in virus titer, or concentration

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Related Technologies

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- [For more information on the inventor's original reverse genetics system for producing influenza virus, see WARF reference number P99264US.](#)

Related Intellectual Property

- [View Continuation Patent in PDF format.](#)

Tech Fields

- [Therapeutics & Vaccines : Vaccines](#)

For current licensing status, please contact Jennifer Gottwald at jennifer@warf.org or 608-960-9854

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