



Improved Influenza B Virus Replication for Vaccine Development

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The Wisconsin Alumni Research Foundation (WARF) is seeking commercial partners interested in mutations that increase virus titers in cultured cells/embryonated chicken eggs for use in high-growth vaccines produced through reverse genetics.

Overview

The epidemiology of influenza Type B viruses differs from Type A; influenza B viruses primarily circulate in humans and do not cause pandemics. However, in some seasons the impact of influenza B infections on morbidity and mortality can exceed influenza A.

Over the past few decades, viruses of two influenza B lineages (Victoria and Yamagata) have circulated in humans, and both lineages are now represented in vaccines as recommended by the World Health Organization (WHO). While influenza B virus vaccines for humans have been available for more than 50 years, no systematic efforts have been undertaken to develop high-yield candidates.

The Invention

UW–Madison researchers led by Yoshihiro Kawaoka and Gabriele Neumann have identified growth enhancing mutations that increase the yield of influenza B viruses, potentially enabling more rapid and cost-effective vaccine production.

Virus libraries were generated for each lineage (B/Victoria and B/Yamagata) and passaged in cultured cells to identify several mutations in the 'internal' genes of influenza B viruses that confer high-yield in cultured cells and/or embryonated chicken embryos. The use of one or more of these mutations in vaccine virus master strains results in higher viral titers (e.g., 10^8 PFU/mL or more) in cultured cells and/or embryonated chicken eggs.

Applications

- Influenza B virus vaccine backbones for improved vaccine production

Key Benefits

- More efficient influenza B virus growth
- More rapid and cost-effective vaccine production

Stage of Development

Influenza B vaccine virus backbones have been developed that could increase the titers of seasonal vaccines in propagation systems currently used for human applications.

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Related Technologies

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

Tech Fields

- [Therapeutics & Vaccines : Vaccines](#)

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