Therapeutics & Vaccines

Cell Line for Evaluating Influenza Virus Sensitivity to NA Inhibitors

WARF: P05278US

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The Wisconsin Alumni Research Foundation (WARF) is seeking commercial partners interested in developing a cell line that is capable of universally monitoring the sensitivity of human influenza virus isolates to NA inhibitors.

Overview

The extensive use of neuraminidase (NA) inhibitors to treat influenza virus infections by reducing viral sialidase activity requires close monitoring for resistant variants. However, cultured cells do not provide a reliable means of evaluating the susceptibility of human influenza virus isolates to NA inhibitors. The growth of influenza viruses in most cell lines is not inhibited by these drugs, even though their sialidase activity may be drug-sensitive.

The Invention

A UW-Madison researcher has developed a cell line that is capable of universally monitoring the sensitivity of human influenza virus isolates to NA inhibitors. This Madin-Darby canine kidney (MDCK) cell line has been modified so it overexpresses the human β-galactosidase α2,6-sialyltransferase I (ST6Gal I) gene.

Several influenza virus isolates were tested in this cell line. The sensitivity of the viruses to an NA inhibitor correlated with the sensitivity of viral sialidase to the compound, demonstrating the potential utility of this cell line for detecting viruses that are resistant to NA inhibitors.

Applications

- Development of vaccines and NA inhibitors

Key Benefits

- Can be used universally to monitor the sensitivity of clinical human influenza virus isolates to NA inhibitors
- Enables the detection of NA-inhibitor resistant variants
- Supports efficient growth of human influenza virus—allows viruses to be grown to up to 20-fold higher concentration than is possible in standard MDCK cells
- May be used to isolate influenza viruses from clinical samples

Tech Fields

- Research Tools : Cell lines
- Therapeutics & Vaccines : Vaccines

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