InDevR's FluChip detects, distinguishes swine-origin H1N1 from human influenza viruses

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InDevR, a small biotech company in Boulder, CO, and the Influenza Division of the Centers for Disease Control and Prevention (CDC) in Atlanta confirmed today that the M gene version of InDevR's FluChip can detect swine-origin H1N1 influenza A viruses and clearly distinguish them from seasonal influenza viruses (A/H1N1 and A/H3N2) as well as the deadly avian A/H5N1 virus.

The FluChip was invented by a joint team of scientists at the University of Colorado at Boulder and the Centers for Disease Control and Prevention in an NIAID-supported effort led by then-Professor Kathy Rowlen, CEO of InDevR. InDevR recently licensed the intellectual property from the University of Colorado and CDC.

The CDC provided InDevR scientists with non-infectious genetic material from swine-origin influenza viruses earlier this week. The FluChip performance was evaluated with several of these samples in a side-by-side comparison with seasonal human influenza viruses. "The FluChip assay detected all of the 6 swine-origin H1N1 viruses tested, and the resulting pattern, or signature, on the microarray was dramatically different than the signature for seasonal A/H1N1 and A/H3N2 viruses. Interestingly, the signature of the swine H1N1 virus indicated an avian component within the M-gene, which is consistent with its reported Eurasian lineage, said Dr. Erica Dawson, the Lead Scientist on the project at InDevR and co-inventor of the FluChip

technology. Representative results from this study are available on the InDevR website (www.indevr.com/FluChip.htm).

The FluChip is expected to be a powerful addition to the influenza surveillance toolkit since it will be less susceptible to failure than qRT-PCR assays as the virus continues to evolve. According to Rowlen the reason that the M-gene version of the FluChip is more robust has to do with the fact that the diagnostic target is a stable, internal gene which codes for the virus' matrix proteins. Current qRT-PCR subtyping assays target a more highly mutable gene that codes for a protein, hemagglutinin (HA), which is subject to antigenic drift. "As has happened in the past, if the HA gene changes in a critical region, qRT-PCR will fail and the researcher won't know why until the gene is re-sequenced," said Rowlen.

Based on these early FluChip results and with support from the National Institute of Allergy and Infectious Diseases (NIAID), part of the National Institutes of Health (NIH), InDevR will immediately begin manufacturing FluChip Kits for placement in a limited number of State Public Health labs. The Colorado Department of Public Health and Environment (CDPHE) will be the first site to receive FluChip assays for use as a complement to the newly released swine qRT-PCR assay. "We are excited about helping to evaluate the FluChip technology. The ability to rapidly and reliably determine whether or not an influenza virus is seasonal or extraordinary would be tremendous," said Dr. Hugh Maguire, Program Manager of Microbiology and Molecular Science at the CDPHE.

InDevR will combine the FluChip technology with an innovative detection technology (NESA™), which InDevR also licensed from the University of Colorado and further developed with NIAID support, to make the FluChip assay inexpensive and easy to use in any lab that has basic PCR capabilities.

Source: University of Colorado at Boulder (news : web)