



Inspired Life Science Technology

Going Viral

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Seeking Your Feedback - A Survey from InDevR

We have been promoting the InDevR Virus Quantification Methods and Challenges survey in the first few issues of *Going Viral*. Answers to this brief survey provide us with insight into the daily practice of our readers. From the different types of viruses scientists are working with to the potential drawbacks of current virus quantification methods, we are interested in learning more!

[Click here](#) to complete this survey. Your feedback is appreciated.

News in Life Science Technology

Vaccination Week expected to reach 41 million adults and children in the Western Hemisphere

Vaccination Week, led by the Pan American Health Organization/World Health Organization, took place April 23 - 30, 2011. This is the largest multi-country health initiative. The 2011 Vaccination Week expected to help an estimated 41 million adults and children in the Western Hemisphere through the promotion of vaccinations among vulnerable populations. Since 2003, Vaccination Week has reached more than 323 million adults and children in 45 countries and territories.

Europe, the Eastern Mediterranean, Africa and Western Pacific regions of the world were also scheduled to hold Vaccination Weeks simultaneously with events taking place in the Western Hemisphere. Vaccination Week 2011 arrived at a time when many areas of the US remain on high alert to outbreaks. Minnesota and Utah both recently reported a high rate of measles outbreaks.

[Read more](#)

Nasal vaccines could replace flu, pneumonia shots

According to research recently presented at the Society for Microbiology's Spring Conference, combining traditional vaccines with the immune stimulating chemical interleukin-12 (IL-12) can create nasal vaccines

that are as effective as shots and better protect the respiratory tract. This research, conducted intranasally in mice, prevented certain diseases including the flu, pneumonia and the plague. There are few nasal vaccines currently on the market despite the fact that dosing patients at the site of virus/bacterial entry has several benefits. The results of the interleukin-12 (IL-12) study bode well for the future production of nasal vaccines and will next be examined in human clinical trials.

[Read more](#)

Advisory panel likes new hepatitis C drugs, which could expand options

A Food and Drug Administration (FDA) panel of 18 non-medical experts has unanimously approved two new hepatitis C drugs designed to be given to patients in combination with standard therapy. In clinical trials, the drug boceprevir, manufactured by Merck, was shown to almost double the number of patients suppressing the hepatitis C virus to undetectable levels in comparison to patients simply undergoing standard therapy. The second drug, Vertex's telaprevir, saw a 75 percent cure rate among patients when administered through combination therapy to those who were previously untreated.

It is estimated that approximately four million Americans are currently living with hepatitis C. The panel approval of these two new drugs and subsequent review by the FDA may result in more treatment options for patients.

[Read more](#)

Virus of the Month: Influenza

Influenza, otherwise known as the flu, is probably the most commonly known virus among the general public. Birds and some mammals, including humans, serve as the typical influenza hosts. The flu is a single-stranded RNA virus consisting of three different types - Influenza A (epidemic, pandemic), Influenza B (epidemic) and Influenza C (mild illness). Influenza A viruses are sub-typed according to differences in two major surface proteins: hemagglutinin (HA) and neuraminidase (NA). There are 14 known HA sub-types and nine known NA sub-types and these different sub-types result in the commonly encountered naming system (i.e. - H1N1, H3N2, H5N1).

The influenza virus is subject to two very different types of mutation. First, because RNA viruses tend to make a significant number of mistakes when replicating, influenza is prone to what is termed "antigenic drift". This leads to the slight seasonal changes in influenza that cause yearly epidemics and the continual need to update the yearly vaccine composition. Because influenza has a segmented genome, however, the virus can also undergo more drastic mutations known as re-assortment, where entire segments of the genome are swapped between viruses. This phenomenon can give rise to pandemics, when vastly different viruses that we have little or no immunity against can suddenly emerge.

Many medical experts are still concerned about the spread of the potentially pandemic "avian flu" (H5N1). This strain of influenza has a high mortality rate when transmitted to humans and is highly contagious among poultry. Although H5N1 has been eliminated in many countries, six countries - India, Bangladesh, China, Egypt, Indonesia and Vietnam - continue to see this virus due to their trade practices. These trade practices may include poultry reared and sold under conditions that do not provide protection from flu viruses (such as minimizing contact with wild migratory birds), a country's lack of resources or commitment to dealing with the H5N1 strain and few quality veterinary/animal production services available. According to a recent statement from the United Nations Food and Agriculture Association, it may take up to 10 years to eliminate the avian flu virus from the six identified countries. The continued presence of the avian flu in these countries is concerning as previous flu pandemics developed from the re-assortment of the human and avian influenza viruses

And when the flu season ramps up every fall, the need for a universal flu vaccine often reenters the discussion. Results from a recent human clinical trial conducted at Oxford University indicate that this vaccine might soon be a reality. This particular trial tested a universal vaccine that targeted an individual's T-cell response to influenza. In the trial, 11 participants received the universal vaccine and were then infected with the H3N2 Influenza A virus. Their T-cell response to the virus was then compared with the responses of 11 non-vaccinated participants. This was the first vaccine of its type to be tested on people.

Results of the study indicated that the universal vaccine worked as planned. Participants who were vaccinated were less likely to get the flu than those who were not vaccinated and exhibited a stronger T-cell response to the flu. This T-cell vaccine could be utilized on a yearly basis against influenza because it targets proteins inside the virus that are common among all strains. It could also prevent flu pandemics if used widely.

The efficacy of the T-cell vaccine is currently being examined at Oxford among people over the age of 50. A larger clinical trial of several thousand people testing the vaccine will also be launched in the coming months.

The following online resources were utilized for content in this section of *Going Viral*:

[The Economic Times](#)

[The Guardian](#)

InDevR In Brief

Action! InDevR Releases New Virus Counter® Video

InDevR's ViroCyt® Virus Counter® provides a direct measurement of virus particle concentration within minutes. Check out the new Virus Counter video to get a first-hand look at this powerful virus quantification technology and how it might function in your lab.



[Watch the Virus Counter video here](#)

Green Ideas



April 22, 2011 marked Earth Day 2011. On this day, the Earth Day Network, through The Canopy Project, commemorated the planting of more than 50 million trees throughout the world this year. Many trees were planted in depleted areas in Haiti, Brazil, Mexico and urban areas of the US. Join InDevR and our commitment to building a more environmentally friendly planet by taking the following tip into consideration for your own company:

Schedule cleaning during regular work hours. Experiment with different "day cleaning" schedules. Arrange cleaning schedules to overlap with work hours instead of having cleaning done after hours and keeping the lights, heating and air conditioning on at night. (*Johnson Controls, Make Your Buildings Work Campaign*)

What are you currently doing to improve the environmental efficiency of your business? Feel free to send any tips or solutions to info@indevr.com. They may be featured in an upcoming issue of *Going Viral!*

Upcoming Events

Interested in learning more about the virus quantification and pathogen detection technologies being developed at InDevR? Sign up for one of our Webinars or connect with an InDevR team member at an upcoming biotechnology conference.

ESACT Cell Based Technologies Meeting

May 15-18, 2011

Vienna, Austria

InDevR will be presenting a poster detailing the Virus Counter® technology as well as supporting our distributors, Applikon Biotechnology B.V. and IUL Instruments GmbH, at this 22nd annual meeting.

[Click here](#) to learn more.