Lethality of H1N1 Virus Drops to "Non-Epidemic Resting Levels" in Current Cycle; Virus' Infectivity Remains Increased

Biotech firm Replikins Ltd. today issued its latest biochemical analysis of the H1N1 virus genomic data. It shows that the lethality of the virus has dropped from its peak of 3.7 (s.d. 4.5) during the virus's current outbreak in the spring of 2009 to resting non-epidemic levels this week of 2.0 (s.d. 0.1). The H1N1 infectivity count, however, remains increased.

Boston (PRWEB) November 27, 2009 -- Biotech firm Replikins Ltd., which has analyzed the H1N1 virus genomic data from the 1918 pandemic through the prediction, outbreak, and progress of the current H1N1 pandemic, today issued its latest biochemical analysis of the virus. The new data shows that the lethality of the H1N1 ("Swine Flu") virus has dropped from its peak of 3.7 (s.d. 4.5) during the virus's current outbreak in the spring of 2009 to resting non-epidemic levels this week of 2.0 (s.d. 0.1). The H1N1 virus' infectivity count, however, remains increased.

The new data shows changes in the Replikin Count*, a measure of a virus's ability to rapidly replicate. A decrease in Replikin Count has signaled the end of each of the three influenza pandemics of the last century (H1N1, H2N2, and H3N2), the end of the SARS outbreak in 2003, and the end of the H5N1 (Avian Flu) outbreak in humans in 2008 (refs).

The company issued an interim advance report of this decrease in lethality on September 30, 2009 (refs). That report has now been confirmed by the current additional Replikins data and by the recent CDC epidemiological reports of declining total hospitalizations and deaths, and declining pediatric deaths from H1N1 (refs). In April 2008, Replikins issued a warning of an impending H1N1 influenza epidemic when the virus' Replikin Count reached levels not seen since the last H1N1 pandemic in 1918.

Without advance warning, the current biological methods of vaccine production cannot possibly meet the growing needs of a human population that today exceeds 6.7 billion. The current H1N1 Pandemic demonstrates the inherent limitations of biological vaccines, which simply do not permit the timely delivery of vaccine in sufficient quantities before a "hit-and-run" emergent viral disease like H1N1 has come and gone.

The best intentions and efforts of governments, pharmaceutical firms, and public health authorities cannot overcome the absence of advance warning, and the many months required from outbreak to delivery of the vaccine. It is becoming universally acknowledged that new vaccine technologies and methods for providing advance warning of viral outbreaks must be found.

At a meeting of the Influenza Congress USA in Washington, DC on November 19-20, 2009, Replikins chairman Dr. Samuel Bogoch presented new confirmatory evidence of two of its Replikins-based products that offer promise for advance warning of a viral outbreak and for the timely production and delivery of safe and effective vaccines. The first, called FluForecast(R), is software that has correctly provided advance warning of two flu epidemics -- H5N1 (Avian Flu) and H1N1 (Swine Flu) -- by counting the increase in the number of Replikins in the virus' genes over time. For the current H1N1 pandemic, the company issued an advisory in April 2008 that forewarned its arrival one year later. With advance warning, scientists, public health officials and the pharmaceutical industry can develop, test and distribute the appropriate vaccine with enough time to avert the worst effects of emerging diseases.
Replikins Ltd. has successfully tested a second promising technology that allows for the faster development and deployment of safe and effective influenza vaccines. The company has now produced completely synthetic vaccines based on both new and conserved Replikin structures, which exclude all biological components and any contact with them. The process eliminates unwanted side effects from contaminants and the need for preservatives such as thimerosal. Synthetic Replikins vaccines made in seven days, given orally or intranasally, recently have been found independently to be effective in blocking emergent viruses including H5N1 in chickens, where it totally blocked virus excretion and thus potentially, virus reservoir formation (refs).

When asked at the Influenza Congress about the goals of Replikins Ltd., Dr. Bogoch replied: "Current biological vaccine technologies for emergent diseases are expected to provide, albeit 'too little and too late', approximately 125 million vaccine doses for people worldwide this fall (Klaus Stohr, Influenza Congress USA, Washington, DC, Nov.19-20, 2009). Replikins synthetic vaccines are targeting emergent diseases in the unserved global population of over six billion people, and selected animal populations, and FluForecast(R) can give advance warning of outbreaks.

"The company has announced the formation of WorldVaccines(TM)Ltd to test and distribute these new Replikins technologies, and invites all interested public health, pharmaceutical, financial, and other institutions to join it in testing and distributing FluForecast(R) and Replikins' synthetic vaccines against emerging diseases."

Contact: Samuel Bogoch, MD, PhD, (646) 320-5910, sbogoch@replikins.com

*About Replikins

Replikins are a new group of genomic peptide structures in viruses, other infectious disease agents, and cancer cells, which are associated with rapid replication (refs). Two genes have been isolated in silico in viruses and relate to infectivity and lethality respectively. The increase in Replikin concentration (Replikin Count=Number of Replikins per 100 amino acids) in the virus Infectivity Gene precedes an increase in clinical infectivity and spread; and an increase in the virus Lethality Gene precedes an increase in lethality clinically. The characteristic high infectivity and low lethality found in counting the Replikins in these two genes in the H1N1 strain correspond to what is observed clinically, that is, high infectivity and low lethality. In contrast, in H5N1, the Replikin Counts in the same two genes exhibit the reverse characteristics, that is, low infectivity and high lethality (Figure); and in this case again, the Counts correspond to what follows clinically, that is, low infectivity and high lethality cases. The distinctly separate and opposite states in these genes is therefore observed both intra-strain in H1N1, and inter-strain in H1N1 vs. H5N1. This represents an important validation by the method of "double differentiation" of the independent function of these two genes (refs). Dr. Samuel Bogoch is co-founder with Dr. Elenore Bogoch of Replikins Ltd., a Boston biotechnology firm which attracted worldwide attention for successfully predicting the current H1N1 outbreak a full year ahead of time. Dr. Bogoch is again making waves by stating that as of this month, this cycle of the outbreak has peaked.

FluForecast(R) is showing declining levels of key Replikins sequences in the virus. High levels of these sequences have been consistently linked with the lethality of viruses in major epidemics, and their reduction is indicative that the current outbreak is declining from a peak level earlier this year. The Company has announced the formation of WorldVaccines(TM)Ltd to test and distribute FluForecast(R) and Replikins' synthetic vaccines against emerging diseases to address the "niche" of 6 billion people who are not receiving timely biological vaccines.

References:


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Contact Information
Samuel Bogoch
Replikins Ltd.
http://www.replikins.com
646-320-5910

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