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The first FDA approved recombinant protein-based influenza vaccine made in cell culture

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The manufacture of influenza vaccines traditionally involves growing live influenza viruses in embryonated chicken eggs and partially purifying the hemagglutinin (HA) antigen from this source. This process is fraught with challenges, including: (1) the need to work with infectious influenza virus; (2) the need to adapt the influenza virus to grow in eggs; (3) the egg manufacturing process requires the use of antibiotics; and (4) the use of harsh chemicals to inactivate the influenza virus prior to HA purification. Flublok influenza vaccine is made in stark contrast to this process. Comprised of recombinant HA proteins, Flublok is made using protein sciences' baculovirus expression vector system (BEVS) technology that removes the need to grow live influenza virus and completely eliminates the use of eggs from the manufacturing process. The result is a vaccine that is pure, contains specified HA sequences (not egg-adapted sequences) and can be made faster than egg-based vaccines without the use of harsh chemicals. The FDA approved Flublok for use in adults 18-49 years old in January 2013, making it the first recombinant protein-based influenza vaccine available in the world. Protein sciences' BEVS platform is a plug and play technology, readily suitable for the production of a variety of vaccines and biologics. The expresSF+* cells used in the platform are robust and can be grown to high densities in serum-free media. Flublok is manufactured at the 600 L scale and has been successfully scaled up to the 2,500 L scale this year.

Biography

Rachael S. Felberbaum is Manager at Scientific Communications of Protein Sciences Corporation, a leader in the development and manufacture of vaccines and other biologics using its patented baculovirus expression vector system. She obtained her Ph.D. from Yale University in 2011 with a focus on Molecular, Cellular and Developmental Biology. Previously, she was Manager, Corporate Communications of Protarga, Inc. (King of Prussia, PA), a clinical-stage pharmaceutical company developing novel targeted therapeutics for cancer and other diseases.

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