

Peer Reviewed Publication Confirms the Absence of Rhabdovirus in Cell Line Used for Manufacturing of Flublok®

For Immediate Release

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Meriden, CT — [Protein Sciences Corporation](#) is pleased to announce the publication of its manuscript entitled “Complete Study Demonstrating the Absence of Rhabdovirus in a Distinct *Spodoptera frugiperda* (Sf9) Cell Line” in the peer-reviewed journal [PLOS ONE, Volume 12 issue 4](#). The publication follows extensive testing of the parent cells from which Protein Sciences’ proprietary *expresSF+*® (SF+) cell line is derived. The study confirms that a contaminating rhabdovirus previously reported in a related cell line is not present in SF+ cells. These results demonstrate that not all cell lines are equal even if they are derived from the same parent cell line and highlight the high quality of the SF+ cell lineage.

“The quality of our cells is of the utmost importance as they are the vehicle with which we make all of our vaccines,” said Dr. Manon Cox, President and CEO of Protein Sciences and senior author on the paper. “The data in this paper further substantiate that SF+ cells are ideal for manufacturing – they can not only be scaled to very large volumes, allowing for the production of millions of doses of vaccine, but are also free of elements that have been reported for other Sf cell lines, such as rhabdovirus.”

SF+ cells are used for the manufacture of multiple commercial products made by Protein Sciences and others, including FDA-approved [Flublok® Influenza Vaccine](#), EMA-approved Glybera®, and USDA-approved Ingelvac CircoFLEX®.

To learn more about how Protein Sciences manufactures vaccines using SF+ cells, please view our [educational video](#) or visit www.proteinsciences.com.

About Protein Sciences

Protein Sciences is a world leader in vaccine development and protein production. Our mission is our inspiration: to save lives and improve health through the creation of innovative vaccines and biopharmaceuticals.

About Flublok®

Flublok, the world’s first recombinant protein-based vaccine for the prevention of seasonal influenza disease, is approved for all adults over 18 years. FDA approved the quadrivalent

formulation (“Flublok Quadrivalent”) in October 2016 that will be commercially available for everyone over 18 years for the 2017/18 influenza season. Flublok is the only flu vaccine made in a 100% egg-free system using modern cell culture technology, making it unnecessary to use an infectious influenza virus, antibiotics or harsh chemicals (e.g., formaldehyde) in manufacturing. Flublok is highly purified and does not contain any preservatives (e.g., thimerosal - a form of mercury), egg proteins, gelatin or latex. In addition, Flublok contains three times more antigen than traditional flu vaccines (3x45mcg hemagglutinin protein versus 3x15mcg hemagglutinin protein).* In a 2014/15 post-marketing study of 9,000 adults 50 years and older, people who received Flublok were over 40% less likely to develop cell culture confirmed influenza than people who received a traditional flu vaccine. Flublok is an exact copy of the influenza virus coat protein and is not subject to the egg-adapted mutations associated with low vaccine effectiveness (see [Skowronski et al. \(2014\) PLOS ONE 9\(3\), e92153](#)).

Healthcare professionals in the U.S. wishing to order Flublok should contact one of the following distributors:

- Protein Sciences Corporation: 203-686-0800 www.flublok.com
- FFF Enterprises: 800-843-7477 www.myfluvaccine.com
- Cardinal Health: 866-677-4844 <http://www.cardinal.com/flu>
- McKesson: 877-MCK-4FLU mms.mckesson.com
- Moore Medical: 800-234-1464 www.mooremedical.com/flu
- Henry Schein: 1-800-772-4346 www.henryschein.com

Learn more at www.proteinsciences.com and www.flublok.com.

Flublok Safety Information

Flublok is approved for people 18 and older to prevent influenza disease. The most common side effect from Flublok is pain at the site of injection. Headache, fatigue or muscle ache may occur. Tell the doctor if you have ever experienced Guillain-Barré syndrome (severe muscle weakness) or have had a severe allergic reaction to any component of Flublok vaccine. Vaccination with Flublok may not protect all individuals. Please see the complete Package Insert available at www.flublok.com or call 203-686-0800 for more information.

*Flublok demonstrated a higher antibody response to the A strains in two field trials in adults ≥50 years old. The B strain antibody responses were comparable to traditional trivalent and quadrivalent vaccines.

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