

Dyadic International Inc

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Dyadic views President Trump's executive order to improve flu vaccines as a major opportunity

Dyadic International Inc (NASDAQ:DYAI) Chief Commercial Officer Matthew Jones hailed President Donald Trump's executive order to modernize influenza vaccines and said Monday that it would promote new technologies to improve vaccine manufacturing and could be a shot in the arm for the company.

Founded in 1979, Jupiter, Florida-based Dyadic engages in the large-scale manufacture of low-cost enzymes and other proteins for markets in the United States and Europe.

"The industry needs to move away from the over reliance on time-consuming egg-based vaccine production," Jones told Proactive.

"Dyadic's C1 gene expression platform was put to the test by Sanofi Pasteur and based on the mice trial data generated to date, the flu vaccine expressed from C1 performed better, with one-third the dosage and could be produced at a much lower cost. The C1 flu data generated in our collaboration with Sanofi Pasteur showed 100% protection for the C1 vaccine compared to 75% of the flu vaccine and only required one-third the amount which can be produced at a much lower cost," he added.

READ: Dyadic on course to disrupt the status quo in manufacturing biologic vaccines and drugs

Dyadic leverages its proprietary C1 expression system — a fungal expression technology for producing enzymes — to help bring biologic vaccines, therapeutic enzymes, proteins, biosimilars and drugs to market faster and at a lower cost.

Dyadic has patented its proprietary filamentous fungus, *Myceliophthora thermophila*, nicknamed C1 and the associated molecular tools used to engineer the C1 cells to express and manufacture large volumes of low-cost biologic products such as enzymes and proteins. The C1 fungus, is a living cell that has been bioengineered by Dyadic scientists for more than two decades.

Trump's order also establishes a new task force charged with developing a solid plan to modernize US flu vaccine production. Many of the vaccines we use are produced overseas, using time-consuming, egg-based technology, which limits their effectiveness and makes production too slow to combat a potential deadly influenza pandemic.

HHS Secretary Alex Azar said that under the executive order, HHS will lead the coordination of efforts to modernize flu vaccine production.

Leveraging C1's powerful vaccine platform

"An alternative to the ways of creating a fast, cheap supply of vaccines is long overdue," said Jones.

"In our initial research collaboration which was carried out in conjunction with Sanofi Pasteur, one of the world's leading flu vaccine suppliers, the C1 expressed (HA) performed better than the HA tested which was produced using baculovirus. The C1 vaccine did not induce any clinical signs in mice trials conducted by Sanofi Pasteur," he added.

Price: 8.72

Market Cap: \$239.53 m

1 Year Share Price Graph



Share Information

Code: DYAI

Listing: NASDAQ

52 week High Low
10.92 2.53

Sector: Pharma & Biotech

Website: www.dyadic.com

Company Synopsis:

Dyadic International, Inc. is a global biotechnology company focused on further improving and applying its proprietary C1 expression platform to help speed the development and lower the cost of biologic vaccines and drugs for animal and human health applications.

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Jones explained that the research was carried out prior to the company's new and improved C1 Pharma Gene Expression Platform where it is seeing even higher productivity levels.

"Using our earlier C1 technology platform we previously estimated that we could produce one or more gram per liter of HAs and other antigens in five-to-seven days fermentation. This means that in seasonal influenza vaccines, total doses distributed from C1 could be 146 million a year where each 0.5 ml dose is formulated to contain 15 µg of HA for each strain — meaning that in just 3 X 1000L scale fermentation runs Dyadic will be able to supply 2,175 g, which is the annual global HA/strain demand," said Jones.

"With our new and improved C1 technology we believe the cost would be even lower, and smaller-scale fermentation vessels can be used," he noted.

Manufacturers such as GlaxoSmithKline PLC and Sanofi make millions of doses of flu vaccine for the US market alone, growing the virus in chicken eggs. Each year the seasonal flu costs the US \$50 billion, including lost productivity. A serious flu pandemic would push those costs to between \$1.8 billion and \$3.8 billion.

In May, Dyadic teamed up with the Serum Institute of India Private Limited to develop affordable antibodies and vaccines. One of the world's largest vaccine makers, Serum will collaborate with Dyadic on up to 12 antibodies and vaccines (8 MABs and 4 rVaccines) using Dyadic's proprietary C1 gene expression platform.

"The data being generated in our research collaborations with Sanofi, ZAPI and others continues to demonstrate several potential advantages of using C1 to help speed up the development, lower production costs and improve the performance of biologic vaccines and drugs," said Jones. "We see many advantages of C1 applied to the manufacturing of vaccines."

The biotechnology company aims to present its posters and data to Health and Human Services to quicken vaccine production.

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