



Press Release

Synthetic Genomics Inc. and J. Craig Venter Institute Form New Company, Synthetic Genomics Vaccines Inc. (SGVI), to Develop Next Generation Vaccines

SGVI announces collaboration with Novartis on the development of influenza vaccines using synthetic genomics technology

Collaboration will combine advances in synthetic genomics science and genome sequencing capabilities with leading edge vaccine technology

LA JOLLA, CA, October 7, 2010 — The company Synthetic Genomics Inc. (SGI) and the not-for-profit research organization, the J. Craig Venter Institute (JCVI) today announced the formation of a new company, Synthetic Genomics Vaccines Inc. (SGVI). The privately held company will focus on developing next generation vaccines using JCVI's genomic sequencing and synthetic genomic research expertise, coupled with the intellectual property and business acumen of SGI, to significantly advance and enhance vaccine development.

SGVI is also announcing a three-year collaboration agreement with Novartis to apply synthetic genomics tools and technologies to accelerate the production of the influenza seed strains required for vaccine manufacturing. The seed strain is the starter culture of a virus, and is the base from which larger quantities of the vaccine virus can be grown. The agreement, supported by an award from the U.S. Biomedical Advanced Research and Development Authority (BARDA), could ultimately lead to a more effective response to seasonal and pandemic flu outbreaks.

Currently Novartis and other vaccines companies rely on the WHO to identify and distribute live reference viruses to create seasonal or pandemic vaccines. Under this collaboration, Novartis and SGVI will work to develop a "bank" of synthetically constructed seed viruses ready to go into production as soon as WHO identifies the flu strains. The technology could reduce the vaccine production time by up to two months, which is particularly critical in the event of a pandemic

JCVI is currently working to sequence genes representing the diversity of several viruses including influenza virus. Novartis has been working with JCVI for more than a decade to apply their findings in the genomics field to develop novel vaccines that prevent disease. The last collaboration introduced the use of genomics in vaccines research, a technology today known as "reverse vaccinology".

In May 2010 researchers at JCVI published results in the journal *Science* describing the construction of the first self-replicating, synthetic bacterial cell. The team synthesized the 1.08 million base pair chromosome of a modified *Mycoplasma mycoides* genome. The synthetic cell is called *Mycoplasma mycoides* JCVI-syn1.0 and is the proof of principle that genomes can be designed in the computer, chemically made in the laboratory and transplanted into a recipient cell to produce a new

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self-replicating cell controlled only by the synthetic genome.

Using these same synthetic genomics advances it is conceivable that more universal vaccines could be developed to target a wide range of infectious disease agents in addition to new influenza vaccines.

“We are excited to apply our advanced synthetic genomics technologies to revolutionize vaccine production. We look forward to working with Novartis, a world leader in vaccine development and production, on our first application area in influenza,” said Fernanda Gandara, President, SGVI.

Locust Walk Partners was a strategic advisor in the transaction to form SGVI.

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About Synthetic Genomics Inc

SGI, a privately held company founded in 2005, is dedicated to developing and commercializing genomic-driven solutions to address global energy and environment challenges. Advances in synthetic genomics present limitless applications in a variety of product areas, including: energy, chemicals and pharmaceuticals. The company's main research and business programs are currently focused on the following major bioenergy areas: designing advanced biofuels with superior properties compared to ethanol and biodiesel; harnessing photosynthetic organisms to produce value added products directly from sunlight and carbon dioxide; developing new biological solutions to increase production and/or recovery rates of subsurface hydrocarbons and developing high-yielding, more disease resistant and economic feedstocks. For more information go to www.syntheticgenomics.com

About Synthetic Genomics Vaccines Inc. (SGVI)

SGVI, a privately held company founded in 2010 by Synthetic Genomics, Inc. and the J. Craig Venter Institute, is dedicated to the development of new vaccines using the advanced tools and technologies of synthetic genomics. The company is headquartered in San Diego, CA.

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