NEWS RELEASE

Phyton Biotech®

Phyton Biotech Partners with Agenus to Revolutionize QS-21 Production

Agenus' R&D Project Funded by Bill & Melinda Gates Foundation Employs PCF® Technology for Potent Vaccine Ingredient

FORT WORTH, Texas, January 3, 2019 – Phyton Biotech today announced an exclusive partnership with Agenus Inc. to develop an alternative manufacturing process for QS-21 to ensure a sustainable supply of this key vaccine ingredient.

Agenus received a ~$1-million grant from the Bill & Melinda Gates Foundation for a proof-of-concept study to manufacture QS-21 directly from plant cell cultures. The novel manufacturing process will be developed using Phyton Biotech's unique Plant Cell Fermentation (PCF®) Technology platform, under an exclusive partnership with Agenus. The intended outcome of the R&D project is to demonstrate that PCF® is a feasible alternative model for the consistent, large-scale, low-cost and commercial production of high-quality QS-21, independent of any potential geo-political or environmental threats.

QS-21 is a purified plant extract used as a potent adjuvant in various vaccines targeting infectious and endemic diseases in developing countries, such as malaria, and is currently under clinical evaluation as an adjuvant for numerous vaccine development candidates, including Agenus' own cancer vaccines. The adjuvant boosts the effectiveness of vaccines by strengthening and broadening immune responses to a vaccine's antigens.

The current approach to producing QS-21 from natural sources involves extracting the compound from the soap bark tree (*Quillaja saponaria*), an evergreen species native to Chile. As demand increases for the potent saponin, over-exploitation of soap bark threatens the ecological sustainability and supply of *Q. saponaria* trees.

"Phyton Biotech is delighted to partner with Agenus to pioneer an innovative approach to developing QS-21 from plant cell cultures to ensure a continuous supply of this globally important vaccine ingredient," said Colin Marr, President of Phyton Biotech. "Based on our past successes using PCF® to revolutionize manufacturing processes for other high-value phytochemicals, we are optimistic that we can succeed in this exciting initiative and provide meaningful public health benefits to poor and developing nations."

Phyton Biotech is globally recognized for its paclitaxel and docetaxel manufacturing processes and its expertise in developing supply solutions for other difficult-to-make secondary metabolites, like thapsigargin and ingenol mebutate, from plant cell cultures using PCF®. The company's award-winning green chemistry model focuses on plant cell culture development and offers superior quality, reliability, environmental and cost advantages over other methods of production of complex small molecules, plant-based actives and recombinant proteins.

About Phyton Biotech
Phyton Biotech, a wholly-owned subsidiary of DFB Pharmaceuticals, is the global leader in Plant Cell Fermentation (PCF®) Technology, offering comprehensive services for the development and commercialization of plant-based molecules, extracts and recombinant products, serving the pharmaceutical, Chinese Traditional Medicine, cosmetic, agricultural and food ingredient industries. Using PCF®, Phyton Biotech offers a time, risk and cost-balanced path to commercially viable production processes, overcoming limitations often experienced with traditional plant extraction and chemical synthesis.

As a biotechnology leader with certified GMP facilities in Germany and Canada, Phyton has a successful track record of developing and implementing innovative contract development solutions for clients around the world. Phyton Biotech is now the world's largest producer of paclitaxel and docetaxel via PCF®, with the capacity to meet more than one-third of the global demand for these critical active pharmaceutical ingredients. For more information, please visit phytonbiotech.com.

About Agenus
Agenus is a clinical-stage immuno-oncology company focused on the discovery and development of therapies that engage the body's immune system to fight cancer. The Company's vision is to expand the patient populations benefiting from cancer immunotherapy by pursuing combination approaches that leverage a broad repertoire of antibody therapeutics, proprietary cancer vaccine platforms, and adoptive cell therapies (through its AgenTus Therapeutics subsidiary). The Company is equipped with a suite of antibody discovery platforms and a state-of-the-art GMP manufacturing facility with the capacity to support early phase clinical programs. Agenus is headquartered in Lexington, MA. For more information, please visit www.agenusbio.com and Twitter handle @agenus_bio.

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