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Agragen Engineers Camelina to Produce a Biological Pharmaceutical for Treating Inflammatory Diseases to Dramatically Reduce the Costs for this Popular Drug

CINCINNATI, Ohio, August 3, 2017 — Agragen, LLC, a Cincinnati-based plant science company active in the biopharmaceutical, nutraceutical, and aquacultural feed sectors, announces a significant step in its development of its lead drug candidates, AGR131. This drug is designed to trap and remove a proinflammatory cytokine from the blood of patients suffering from inflammatory conditions such as rheumatoid arthritis, psoriasis, and inflammatory bowel disease.

Biological pharmaceuticals currently used to treat these diseases are very expensive and can reach annual costs in excess of \$50,000. These high costs force patients to make difficult financial decisions and can endanger their health insurance coverage. Further, these high costs significantly impact and increase the cost of health care in the United States, which are not sustainable. Agragen's unique production system will significantly reduce the production costs of AGR131, with an anticipated reduction in cost to patients of up to seventy-five percent compared to other drugs in this drug class.

"It is absolutely crucial to lower the costs of these drugs to enable them to be provided to more people who need them on a daily basis," said Agragen CEO Sam Huttenbauer, Jr. "Americans shouldn't have to choose between drugs that provide a better quality of life and other daily necessities that they require."

"Our unique and patented production system, which overcomes the challenges of plant-made biological pharmaceuticals, enables a dramatic reduction in the price point for producing these types of drugs, making them affordable to more Americans suffering from these debilitating diseases. This strategy will significantly lessen the pressure on our over-burdened health care system," said Huttenbauer.

Agragen plans to move forward with additional preclinical testing, based on the promising results already seen in the lab. "This is a crucial step in the commercialization process and identifies AGR131 as a candidate to push forward to demonstrate its usefulness in treating inflammatory conditions associated with human disease," said Dr. Eric J. Murphy, Agragen's Chief Scientific Officer. "This is a key milestone for Agragen, and coupled with our patented platform for producing these proteins with a high-yield and at a low cost; this will lower the price point for this popular biological pharmaceutical."

Preclinical experiments were done in a collaborative arrangement with Dr. Colin K. Combs, Chairman and Professor in the Department of Biomedical Sciences at the University of North Dakota's School of Medicine and Health Sciences. According to Dr. Combs, "AGR131 performed as well as the gold standard in trapping the proinflammatory cytokine of interest."

“The strong reduction in this cytokine by AGR131 will drive our preclinical program and reinforces our focus on treating human disease by trapping specific modulators of disease,” Murphy added. “With this first set of positive preclinical results, we have successfully demonstrated that a plant derived protein is biologically active and can be produced in a manner that will lower the cost point of these very expensive drugs.”

“These promising results will further our plans to develop additional cytokine traps to treat the inflammatory conditions associated with many human diseases, but also adds to our program that is designed to produce bioactive fatty acids that are targeted in reducing the inflammatory response”, said Murphy. “Our omega-3 fatty acid program is moving forward and a recent announcement of positive results in field grown camelina engineered to produce omega-3 fatty acids by Rothamsted Research using Agragen’s enabling technology demonstrates the flexibility and uses of camelina to produce products for use to enhance health and treat human disease.”

“By leveraging our existing intellectual property, we expect to double the yield of camelina requiring less acreage to produce bioactive fatty acids, such as long chain omega-3 fatty acids, and biopharmaceuticals. This will only add to the sustainable production platform that camelina provides for these products”, said Huttenbauer.

Agragen, LLC is a Cincinnati, Ohio-based plant science company focused on using *Camelina sativa* as a platform to produce biopharmaceuticals and bioactive fatty acids for use in human health and disease, and to provide sustainable source of nutrition to the aquaculture industry.

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08/03/2017