Waisman BIOMANUFACTURING

Manufacturing pharmaceuticals for the fight against COVID-19

Waisman Biomafacturing (WB) is at the forefront of the fight against COVID-19 with one vaccine and two therapeutic products in development. “Waisman Biomanufacturing’s mission is to advance novel vaccines and therapeutics into early human clinical trials,” says Carl Ross, MS, WB’s managing director. With its state-of-the-art cleanroom facility, WB provides manufacturing and testing services to academic and industry research partners for a broad range of pharmaceuticals for phase I and phase II clinical trials. The facility, established in 2001, is a key component of the Waisman Center’s efforts in translational research.

The COVID-19 vaccine project is in partnership with Heat Biologics and pivots a technology originally designed to help patients fight cancer to a potential COVID-19 vaccine. The vaccine is targeted for at-risk populations, such as the elderly and individuals with underlying health conditions. The project uses engineered human cells to present viral antigens to the cellular arm of the immune system and generate a more robust immune response than a traditional vaccine.

Another COVID-19 project is a therapeutic that produces polyclonal recombinant antibodies to many different epitopes on the surface of the COVID-19 virus. The technology, developed by GigaGen, allows simultaneous manufacturing of more than 10,000 different antibodies identified in recovering COVID-19 patients. The approach has all the advantages of convalescent sera, while offering a robust, industrial platform similar to that used in monoclonal antibody production.

Also in production is a therapeutic product with Australian-based Cynata Therapeutics based on technology originally developed in the lab of Igor Slukvin, MD, PhD, at UW-Madison. The project uses induced pluripotent stem cells (iPSC) as starting material to derive mesenchymal stromal cells (MSC)—multipotent stem cells found in bone marrow — as a potential treatment for respiratory distress in patients with COVID-19 infections.

The COVID-19 projects — just three of 12 WB projects currently underway — are on an accelerated timeline. “Understandably, the devastating effect of the pandemic on families, institutions, and the global community motivates everyone to develop vaccines and therapies as quickly as possible,” says Ross.

All projects are on schedule with results from the clinical trials expected in the second quarter of 2021.