RAPID VACCINE RESPONSES TO EMERGING PATHOGENS USING A PLATFORM TECHNOLOGY

Tim Hahn, Novavax thahn@novavax.com

Novavax is a clinical stage biotechnology company with a technology platform to rapidly produce recombinant nanoparticle vaccines in response to emerging pathogens. Novavax utilizes a Sf9 insect cell/baculovirus (BV) expression system to produce recombinant protein nanoparticles based on correctly folded, protein-protein oligomers in a stable formulation. Novavax has utilized this expression system in developing a respiratory syncytial virus (RSV) F-protein nanoparticle vaccine candidate, currently in a global Phase 3 clinical trial to protect infants via maternal immunization and a Phase 2 trial in older adults. Using this platform, Novavax rapidly developed vaccine candidates in response to emerging pathogens such as Ebola and MERS, and currently has a program focused on a vaccine candidate for Zika. Novavax' proprietary saponin-based adjuvant system (Matrix-MTM) is believed to enhance the immune response by eliciting broadly neutralizing antibodies and cellular immunity. In addition, Matrix-M has been well tolerated in over 1200 humans when used with vaccine antigens. The standardization of a platform manufacturing process and analytical tools, the utilization of a flexible manufacturing system, and the rapid response enabled by the insect cell/BV expression system all accelerate the timeline from discovery to clinical trial results.