CD Bioparticles Announces Advanced Engineering Platform for OMV-Based Bacterial Vaccine Development

CD Bioparticles launches comprehensive OMV-Based Bacterial Vaccines Development services for infectious disease and oncology research.

NEW YORK, NY, UNITED STATES, January 26, 2026 /EINPresswire.com/ -- CD Bioparticles, a leading manufacturer and supplier of numerous drug delivery products and services, has today announced the launch of its comprehensive OMV-Based Bacterial Vaccines Development services. This new platform that integrates synthetic biology with advanced bacterial genome editing can address the historical limitations of traditional vaccine platforms, offering researchers a scalable, safe, and highly immunogenic solution for infectious disease and oncology research.

Outer membrane vesicles (OMVs) are nanoscale particles that are naturally secreted by Gram-negative bacteria during growth. OMVs contain outer membrane proteins, lipopolysaccharides (LPS), and pathogen-associated molecular patterns (PAMPs) that can induce potent immune responses. OMV-based vaccines, such as Neisseria meningitidis B vaccines (like Bexsero), have been successfully deployed, establishing them as a potent next-generation platform against bacterial infections.

CD Bioparticles is dedicated to developing next-generation vaccine solutions for bacterial diseases. The company integrates synthetic biology with pathogen genome editing technologies to enable the large-scale development of innovative bacterial vaccines.

CD Bioparticles has developed advanced gene-editing tools and technical systems that target nearly ten key bacterial pathogens. These engineered strategies aim to overcome multiple bottlenecks in traditional bacterial vaccine development, such as lipopolysaccharide-induced toxicity and antigenic variability, to drive innovation in whole-cell and subunit bacterial vaccines.

CD Bioparticles supports efficient genome editing of pathogens, including precise point mutations, gene knockouts, and knock-ins. With years of expertise in bacterial genome engineering and reverse vaccinology, CD Bioparticles assists researchers in designing next-generation OMV vaccines that are both efficient and safe. Furthermore, CD Bioparticles has successfully scaled up enveloped virus production to 100-liter batches, achieving manufacturing costs that are at least five times lower than those of conventional methods. The company also

provides clients with comprehensive, end-to-end solutions spanning strain engineering to vaccine formulation and evaluation.

CD Bioparticles' new service suite provides a streamlined pathway from initial concept to preclinical evaluation, including pathogen strain acquisition and identification, OMV extraction & purification, engineered OMV design (eOMV), and quality control & functional testing. Other services, like OMV lyophilization and formulation development and GLP-compliant animal studies support are also available at CD Bioparticles.

"Whatever challenges you encounter, whether failing to induce protective immunity because not all bacterial outer membrane vesicles trigger robust immune responses, or facing scaling-up production issues, we can find solutions together," said the Lead Scientist at CD Bioparticles. "Leveraging our expertise in reverse vaccinology and genome editing, we equip researchers with the tools to develop safer, more effective vaccines at significantly reduced costs and timelines compared to traditional approaches."

CD Bioparticles provides an industry-leading platform for the development of next-generation OMV vaccines. For more information on CD Bioparticles' Engineering OMV-Based Bacterial Vaccines Development Services, please visit: https://www.cd-bioparticles.net/services/engineering-omv-based-bacterial-vaccines-development-services.html.

About CD Bioparticles

CD Bioparticles is an established drug delivery company that provides customized solutions for developing and manufacturing novel biocompatible drug delivery systems. It specializes in various formulation and drug delivery technologies, from conventional liposomes and PEGylated liposomes to polymer microspheres and nanoparticles for drug delivery. The company also provides contract research services for drug delivery formulation, formulation feasibility study, process development and scale-up, as well as analytical and non-clinical research services.

Richard J. Gray
CD Bioparticles
email us here