VectorBuilder Partners with MaxCyte® to Advance Clinical-Grade Cell Engineering

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The next-generation platform integrates VectorBuilder's regulatory-compliant gene delivery technology with MaxCyte's clinically validated electroporation platform to enable robust, scalable, and reliable clinical-grade cell engineering.

Chicago, IL & Rockville, MD – June 23, 2026 – VectorBuilder, a global leader in gene delivery technologies and CDMO services, and MaxCyte, a leading, cell-engineering company providing enabling platform technologies to advance the discovery, development, and commercialization of next-generation cell therapeutics, today announced a strategic partnership focused on co-developing a new gene delivery solution using VectorBuilder's proprietary MiniVec™ plasmid system and MaxCyte's world-class clinical electroporation platform for ex vivo cell engineering.

Ex vivo cell therapies such as CAR-T, CAR-NK, and iPSC-based treatments have gained significant traction, but critical challenges in safety and manufacturability continue to limit their broader application. Existing gene delivery methods present significant trade-offs: traditional electroporation of conventional DNA or RNA often results in poor target cell viability or limited therapeutic durability, while lentiviral vectors, though widely used, carry high production costs and potential safety risks such as malignancy arising from vector integration into the host genome. Collectively, these constraints highlight the need for more efficient, safer, and scalable approaches to cell engineering.

The partnership between VectorBuilder and MaxCyte aims to address these challenges by developing the next-generation electroporation-based ex vivo gene delivery solution through the integration of VectorBuilder's novel MiniVec backbone with MaxCyte's advanced Flow Electroporation® technology. MiniVec is a miniaturized plasmid backbone that eliminates the need for antibiotic- or additive-based selection during fermentation, simplifying translation to GMP-grade production. Its reduced prokaryotic sequences have been shown to improve yield and performance across a broad range of applications. Flow Electroporation® employs a gentle, continuous-flow process that reduces cellular stress, preserving cell viability and functionality while enabling scalable, highly efficient gene delivery. This two-pronged approach is designed to deliver significantly improved cell viability and higher transfection efficiency compared to conventional models.

Preliminary data in CAR-T manufacturing demonstrated 2.4x increased cell viability and 1.4x higher gene expression compared to conventional systems. Notably, both MiniVec and Flow Electroporation® have been validated for compatibility with diverse payloads, including DNA, RNA, and RNPs, and proven efficacy across applications such as CRISPR editing, transposon-based cell engineering, and transient protein expression, with demonstrated scalability from research to clinical manufacturing. By enabling more effective and reliable cell engineering, the new platform offers a robust, adaptable, and safer approach for ex vivo gene delivery in therapeutic applications.

"Cell therapy development requires delivering therapies that are manufacturable, scalable and commercially viable said Maher Masoud, President and CEO of MaxCyte. "By combining MaxCyte's Flow Electroporation® technology with VectorBuilder's MiniVec platform, we believe we can enable a new standard for non-viral gene delivery—one that enhances cell quality, improves manufacturing efficiency, and provides developers with a more streamlined path from research through commercialization."

"This partnership combines our complementary strengths to establish a next-generation platform for efficient, safe, and scalable electroporation-based cell engineering for therapies such as CAR-T," said Dr. Bruce Lahn, Founder and Chief Scientist of VectorBuilder. "As both companies have extensive expertise in GMP-compliant clinical development solutions, the combined platform is well aligned to enable a seamless development pipeline from clinical trials through to commercialization. Our aim is to provide a platform delivering high-end performance with an optimal cost-of-goods and price-per-dose model to ease scale-up, commercial strategy, and fundraising efforts for drug developers."

About VectorBuilder

VectorBuilder is a global leader in gene delivery technologies. As a trusted partner in thousands of labs and biotech/pharma companies around the world, VectorBuilder is a one-stop shop for the design, development, and optimization of gene delivery solutions from basic research to clinical applications. Its award-winning Vector Design Studio is a transformative innovation that allows researchers to easily design and order custom vectors online, freeing them from the tedious work of cloning and packaging vectors in the lab. The global company boasts high-throughput vector production capacity, vast vector and component inventories, one-on-one CRO solutions that include advanced AAV capsid engineering capabilities, and state-of-the-art GMP manufacturing facilities. With leading R&D and CDMO capabilities, the VectorBuilder team strives to provide the most effective gene-delivery solutions and develop innovative tools for life sciences research and genetic medicine.

About MaxCyte

At MaxCyte®, we are committed to building better cells together. As a leading cell-engineering company, we are driving the discovery, development and commercialization of next-generation cell therapies. Our best-in-class Flow Electroporation® technology and SeQure™ gene editing risk assessment services enable high-performance cell engineering and rigorous evaluation of editing outcomes, supporting confidence in therapeutic development. Supported by expert scientific, technical and regulatory guidance, our platform empowers researchers to engineer diverse cell types and payloads, accelerating the development of safe and effective treatments for human health. For more than 25 years, we've been advancing cell engineering, shaping the future of medicine.

Learn more at maxcyte.com and follow us on LinkedIn and Bluesky.

VectorBuilder Media Inquiries

communications@vectorbuilder.com

MaxCyte Media Contact:

Oak Street Communications

Kristen White

kristen@oakstreetcommunications.com

415.608.6060