



MaxCyte[®] STX

SCALABLE TRANSFECTION SYSTEM

Rapid, Reagent-Free, High Efficiency Transfection

ANY CELL. ANY MOLECULE. ANY SCALE.



●●● Introducing the MaxCyte STX Transfection System

The MaxCyte STX Scalable Transfection System is the solution for the functional modification of cells intended for cell-based assay systems, preclinical protein production, and other cell-based applications.

The MaxCyte STX makes possible large volume, reagent-free transfection of primary cells, stem cells, and cell lines with any molecule, including plasmids, proteins, mRNA, siRNA, cell lysates, and labile reagents. Up to 10 billion cells can be transfected in 30 minutes. Months of labor required to generate stable cell lines can be eliminated with the MaxCyte STX technology.

●●● Improve Laboratory Productivity

Faster experimental turnaround. Billions of cells can be transfected in minutes using the MaxCyte STX. Using lipid-based transfection agents and lower capacity electroporation systems to produce a similar quantity of cells would take days of labor and a significant amount of labware. Selecting and screening clones to generate stable cell lines can take even longer, often more than six months.

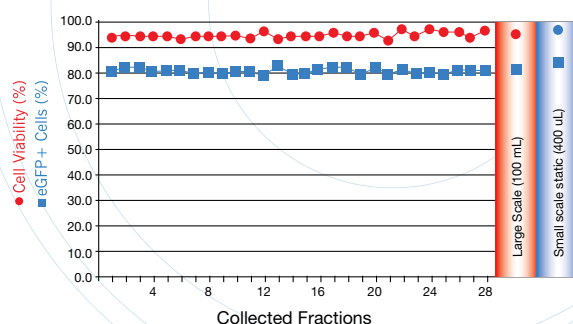
Conduct more screening runs from one batch of transfected cells. The MaxCyte STX can transfect up to 10 billion cells in 30 minutes. Cells can be aliquoted and cryopreserved for subsequent runs.

Easy to use. The MaxCyte STX is software-controlled and reproducible from run to run. Simply load the cells, molecules, and buffer, and start the program. Collect the transfected cells minutes later.

Easy to fit. The MaxCyte STX, about the size of a desktop computer, is a closed system operable in a routine laboratory environment. A hood or biosafety cabinet is not required.

How the MaxCyte STX works. The MaxCyte STX transfects cells using computer-controlled flow electroporation, a proprietary technology MaxCyte originally developed for *ex vivo* loading of cells for cell-based therapies. To use the MaxCyte STX, cells are washed and resuspended in a balanced, chemically defined buffer containing the molecules for cell loading, then passed through the processing chamber where electroporation and transfection take place. No special transfection reagents are required. The MaxCyte STX can reproducibly load any cell with any molecule, at any scale, and with high cell-loading efficiency and high cell viability.

MaxCyte STX Robust Processing at Large and Small Scale



MaxCyte technology was used to transfect K562 cells with pCMV-eGFP, illustrating its utility for loading suspension cells in large volumes (6 x 10E9 cells in 100mL). Processed cells were collected every 3 to 4 mL. Cells from each fraction of the entire pool were analyzed by FACS at 48 hours post-transfection for their viability ● (PI exclusion) or efficiency ■ (GFP+), which were compared to samples from standard static (400 µl) transfection.



●●● Rapid, Reproducible, Consistent, High Yield Results

Over 90% cell recovery. The MaxCyte STX technology uses optimized electroporation parameters for high cell viability and does not require potentially cytotoxic secondary agents such as lipids, viral packages, or carrier proteins.

Consistent and reproducible transfection. The MaxCyte STX provides consistent cell loading within a run, from run to run, and from small to large scale, resulting in reproducible results from experiment to experiment.

Specificity of the cell modification. Unlike systems using lipid-based reagents for transfection, the MaxCyte STX causes minimal off-target perturbations of gene expression, resulting in screening assays with higher fidelity and improved efficiency.

Transfection protocols included. The MaxCyte STX comes preprogrammed with high efficiency, high cell viability transfection protocols for many widely used cell types, including CHO and HEK293. Regular updates to the protocol list are included.

Transfection protocol development services. MaxCyte scientists can develop customized transfection protocols for unique cell type + loading molecule combinations.

Multiple applications. Cells transfected with the MaxCyte STX can be used for cell based assays, preclinical protein biomanufacturing, and other applications.

●●● High Cell Viability and High Transfection Efficiency

Results of the MaxCyte STX Scalable Transfection System electroporation with DNA plasmids encoding for GFP. Efficiency calculated as % cells expressing Green Florescent Protein Plasmid (GFP+) at 24 - 48 hrs post-transfection; viability as % cells excluding propidium iodide (PI).

Cell Type	Efficiency +% GFP (24 - 48 hr)	Viability (% PI-)
293T	95%	95%
Mouse embryonic fibroblasts	95%	95%
Primary human fibroblasts	95%	95%
CHO	90%	90%
Jurkat	90%	90%
K562	90%	90%
NIH 3T3	90%	90%
Primary human myoblasts	90%	90%
VERO	90%	90%
Huh-7	80%	90%
Human mesenchymal stem cells	80%	80%
Renca	80%	97%
MRC-5	75%	95%
Human HSC (CD34+ cells)	60%	60%

● ● ● MaxCyte STX Advantages

The sterile, closed MaxCyte STX Scalable Transfection System provides fast, consistent, and scalable transient transfection of primary cells, cell lines, and stem cells with high loading efficiency, high cell viability, and experiment to experiment reproducibility.

The MaxCyte STX can transfect ten billion cells in less than 30 minutes.

The MaxCyte STX can transfect from fewer than a million cells to ten billion cells with equivalent efficiency and cell viability.

The MaxCyte STX has significant cost and time advantages over the creation of stable cell lines.

The MaxCyte STX has significant control and reliability advantages over reagent-based transfection systems.

The MaxCyte STX reduces laboratory bottlenecks for cell transfection by producing a large number of transfected cells in a single run, enough to conduct a typical HTS campaign.

Use the MaxCyte STX Scalable Transfection System to run more experiments and assays, enhance laboratory productivity, and create more opportunities for successful drug discovery.

Specifications

- Voltage output: 100-900 VDC
- Maximum current output: 300 A
- Typical throughput: 0.16 mL/second or 9 mL/min
- Sterile, closed fluid path
- No special transfection reagents required
- Controlled environment not required

To find out how the MaxCyte STX Scalable Transfection System can enhance your drug discovery program, contact MaxCyte at:

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**The MaxCyte STX Transfection System.
Any cell. Any molecule. Any scale.**

