



Gene Pulser® Electroprotocols

* We recommend adapting this protocol to use the Gene Pulser electroporation buffer (catalog #165-2676, 165-2677), which increases cell viability and transfection efficiency in mammalian cell lines.

Cell Type	Mammalian, suspension	Molecules	Dextrans, various proteins
Species Used	Human, red blood cells	Electroporated	

Before the Pulse

Cell growth medium	Harvested from whole blood	Growth phase at harvest	Not given
Wash solution	Isotonic Phosphate Buffered Saline (PBS)	Pre-pulse incubation	Held on ice in Phosphate Buffered Saline

The Pulse

Electroporation Temperature	0 or 25 °C	Instruments Used	Gene Pulser® apparatus
Electroporation Medium*	20 mM Phosphate Buffered Saline	Cuvette Gap	0.2 cm
Cell Density	10 ⁽⁶⁾ to 10 ⁽⁷⁾ cells / ml	Voltage	0 to 2.5 kV
Volume of Cells	0.4 ml	Field Strength	0 to 12.5 kV/cm
DNA Concentration	10 ⁽⁻⁵⁾ to 10 ⁽⁻⁴⁾ M dextran	Capacitor	25 µF
DNA Resuspension Buffer	Protein in Phosphate Buffered Saline	Resistor	(Pulse Controller) not used. (SEE NOTE)
Volume of DNA	Not given	Time Constant	1 to 2 msec

After the Pulse

Outgrowth Medium	Phosphate Buffered Saline	Relevant Publications and/or Comments
Outgrowth Temperature	0 °C	Note: exponential values designated in parentheses.
Length of Incubation	0 to 5 hr.	**It is NOT RECOMMENDED to use high voltage with out the Pulse Controller.
Selection Method or Assay Used	Flow cytometry, detection of fluorescent molecules	PBS: 1x = 8g NaCl, 0.2g KCl, 0.2g KH ₂ PO ₄ , 1.15g Na ₂ HPO ₄
Electroporation Efficiency	up to 90% of cells exhibit uptake	
Per Cent Survival	25 to 100%	

Name of Submitter
Institution Address

Telephone Number
Fax Number
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