



# 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.

<b>Cell Type</b>	Mammalian, adherent and suspension	<b>Molecules Electroported</b>	DNA: 2 to 4 kB, supercoiled
<b>Species Used</b>	Rat, PC12, adrenal pheochromocytoma; Rat brain; Simian (monkey) COS, kidney cells;		

## Before the Pulse

<b>Cell growth medium</b>	DMEM (GIBCO/BRL, Sigma)	<b>Growth phase at harvest</b>	Stationary growth
<b>Wash solution</b>	Dulbecco's PBS	<b>Pre-pulse incubation</b>	10 min.

## The Pulse

<b>Electroporation Temperature</b>	4 °C	<b>Instruments Used</b>	Gene Pulser® apparatus & Capacitance Extender
<b>Electroporation Medium*</b>	Dulbecco's PBS	<b>Cuvette Gap</b>	0.4 cm
<b>Cell Density</b>	5 x 10 <sup>(6)</sup> cells/ ml	<b>Voltage</b>	0.250 kV
<b>Volume of Cells</b>	400 to 800 µl	<b>Field Strength</b>	0.625 kV/cm
<b>DNA Concentration</b>	20 to 200 µg / ml	<b>Capacitor</b>	25 to 500 µF
<b>DNA Resuspension Buffer</b>	TE (10 mM Tris, 1 mM EDTA, pH 8.0)	<b>Resistor</b>	(Pulse Controller) Ω none
<b>Volume of DNA</b>	10 to 20 µl	<b>Time Constant</b>	0.6 to 16 msec

## After the Pulse

<b>Outgrowth Medium</b>	DMEM	<b>Relevant Publications and/or Comments</b>	<b>Note:</b> exponential values designated in parentheses.
<b>Outgrowth Temperature</b>	37 °C		
<b>Length of Incubation</b>	days		
<b>Selection Method or Assay Used</b>	Binding assays / transients; G418 selection / stable		
<b>Electroporation Efficiency</b>	varies		
<b>Per Cent Survival</b>	varies		

**Name of Submitter**  
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