



# 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, suspension	<b>Molecules</b>	DNA: pGL-luciferase vector
<b>Species</b>	Human, K562, chronic myeloid leukemia; HeLa, epithelial carcinoma; HEL cells, eythroleukemia.	<b>Electroporated</b>	[Promega]containing $\beta$ -globin promoter ; co-porated SV 40, $\beta$ -gal.

## Before the Pulse

<b>Cell growth medium</b>	RPMI + 5% Fetal Calf Serum + 5% DCS	<b>Growth phase at harvest</b>	2 to 5 x 10 <sup>(5)</sup> cells / ml
<b>Wash solution</b>	Phosphate Bufferd Saline + 5% DCS	<b>Pre-pulse incubation</b>	10 min., ice

## The Pulse

<b>Electroporation Temperature</b>	25°C	<b>Instruments Used</b>	Gene Pulser® apparatus & Capacitance Extender
<b>Electroporation Medium*</b>	Hepes Buffered Saline	<b>Cuvette Gap</b>	0.4 cm
<b>Cell Density</b>	4 x 10 <sup>(7)</sup> cells / ml	<b>Voltage</b>	0.300 kV
<b>Volume of Cells</b>	0.5 ml	<b>Field Strength</b>	0.75 kV/cm
<b>DNA Concentration</b>	50 $\mu$ g per pulse	<b>Capacitor</b>	960 $\mu$ F
<b>DNA Resuspension Buffer</b>	Not given	<b>Resistor</b>	(Pulse Controller) $\Omega$ none
<b>Volume of DNA</b>	50 $\mu$ l	<b>Time Constant</b>	31 msec

## After the Pulse

<b>Outgrowth Medium</b>	RPMI + 5% Fetal Calf Serum + 5% DCS
<b>Outgrowth Temperature</b>	37 °C
<b>Length of Incubation</b>	24 hours
<b>Selection Method or Assay Used</b>	luciferease, $\beta$ -gal
<b>Electroporation Efficiency</b>	Not given
<b>Per Cent Survival</b>	50 %

### Relevant Publications and/or Comments

Note: exponential values designated in parentheses.

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