

GENE TRANSFER

Gene Pulser® Electroporation Buffer

- Compatibility with most electroporation systems
- Delivery of both siRNA and DNA into primary cells and difficult-to-transfect cell lines
- Improved transfection efficiency as well as high cell viability after electroporation
- Flexibility for transfection in a single cuvette or in multiwell plates

Enhanced Efficiency With High Cell Viability for siRNA and DNA Transfection

A Single Universal Buffer

Electroporation is an invaluable tool for nucleic acid delivery because it enables transfection of primary and difficult-to-transfect cells. Although electroporation is the best method for transfecting difficult cell types, this method often results in high cell mortality with inadequate delivery of the molecule of interest. Gene Pulser electroporation buffer has a patent-pending formulation that minimizes cell mortality while ensuring highly efficient delivery.

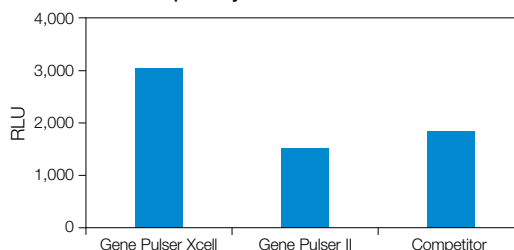
Efficient Delivery to Difficult-to-Transfect Cells

Gene Pulser electroporation buffer is a universal buffer for transfecting nucleic acids — small interfering RNA (siRNA), plasmid DNA, and others — using standard transfection protocols. The buffer is compatible with Gene Pulser Xcell™ and Gene Pulser® II electroporation systems, as well as many others. High transfection efficiencies can be obtained in primary cell lines that are difficult to transfect, as well as lines that serve as laboratory standards (Figure 1).

Waveform Independence for Easy Optimization

This unique buffer can be used with different waveforms to optimize conditions for transfecting cells, an important factor when working with primary cells. It extends the voltage range for electroporation, delivering nucleic acids more efficiently. The buffer increases cell viability, enriching your experimental results (Figure 2).

Plasmid in human primary fibroblasts



siRNA in CHO cells

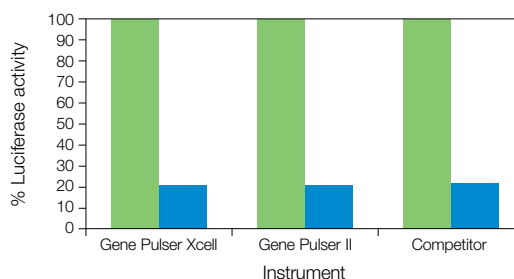
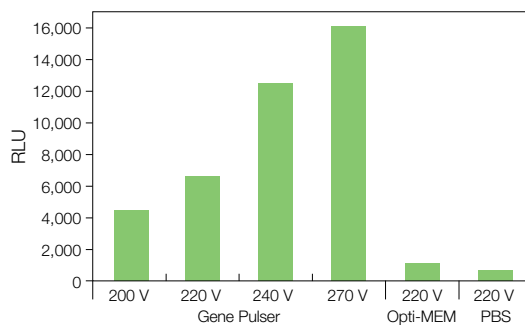
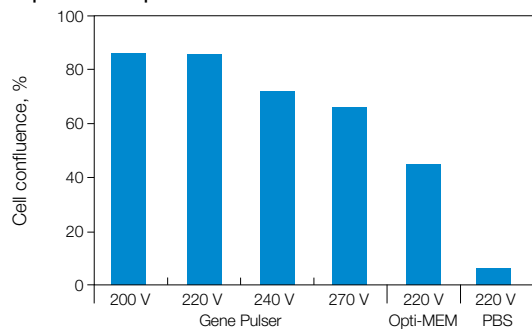


Fig. 1. Electroporation of difficult-to-transfect primary cells as well as CHO cells with Gene Pulser electroporation buffer using different instruments yields similar transfection efficiencies. Human primary fibroblast cells (top) were transfected with a plasmid DNA expressing the luciferase gene, and CHO cells (bottom) were transfected with a scramble siRNA (■) or a luciferase siRNA (■) to silence the luciferase gene.

BIO-RAD

Gene Pulser Electroporation Buffer

Square wave optimization



Exponential wave optimization

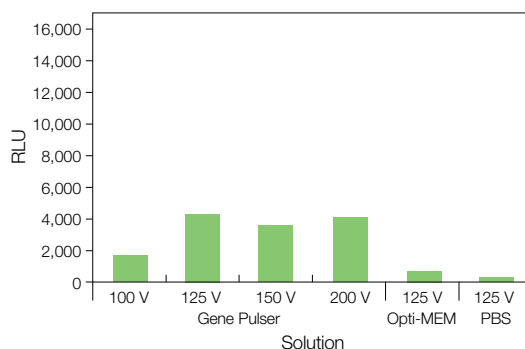
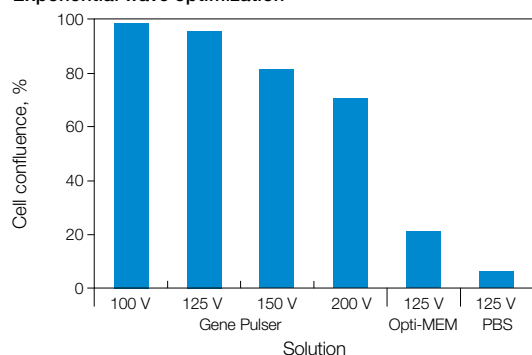


Fig. 2. Gene Pulser electroporation buffer enables protocol optimization. Both square and exponential waveforms were used to determine optimal electroporation conditions for human primary fibroblasts. Confluence (left panels) generally decreases with an increase in voltage, capacitance, or toxic conditions. The higher the relative light unit (RLU) value (right panels), the better the transfection efficiency.

Gene Pulser electroporation buffer is a universal reagent that can be used with most mammalian cell lines to improve transfection efficiency and increase cell viability. The buffer can be used for transfection in single cuvettes or in multiwell plates. It is recommended for delivery of siRNA and plasmid DNA into all cell lines, including suspension cells, difficult-to-transfect lines such as primary cells, and chemically resistant adherent cell lines. Examples of the cell lines that Gene Pulser electroporation buffer can be used with include:

- Primary cells — T-cells, B-cells, neurons, monocytes, fibroblasts, and HUVEC
- Suspension and adherent cell lines — CHO, HEK, HeLa, Jurkat, THP-1, and MCF-7

Ordering Information

Catalog #	Description
Gene Pulser Electroporation Buffer	
165-2676	Gene Pulser Electroporation Buffer, 10 x 1.8 ml
165-2677	Gene Pulser Electroporation Buffer, 30 ml
Gene Pulser Xcell Electroporation System	
165-2660	Gene Pulser Xcell Total System
165-2661	Gene Pulser Xcell Eukaryotic System
Gene Pulser Electroporation Cuvettes	
Standard Packs	
165-2088	Gene Pulser/Micropulser Cuvettes, 0.4 cm gap, 50
165-2086	Gene Pulser/Micropulser Cuvettes, 0.2 cm gap, 50
165-2089	Gene Pulser/Micropulser Cuvettes, 0.1 cm gap, 50
Jumbo Packs	
165-2091	Gene Pulser/Micropulser Cuvettes, 0.4 cm gap, 500
165-2092	Gene Pulser/Micropulser Cuvettes, 0.2 cm gap, 500
165-2093	Gene Pulser/Micropulser Cuvettes, 0.1 cm gap, 500
Mini Packs	
165-2081	Gene Pulser/Micropulser Cuvettes, 0.4 cm gap, 5
165-2082	Gene Pulser/Micropulser Cuvettes, 0.2 cm gap, 5
165-2083	Gene Pulser/Micropulser Cuvettes, 0.1 cm gap, 5

Opti-MEM is a trademark of Invitrogen Corp.



**Bio-Rad
Laboratories, Inc.**

Life Science
Group

Web site www.bio-rad.com USA 800 4BIORAD Australia 61 02 9914 2800 Austria 01 877 89 01 Belgium 09 385 55 11 Brazil 55 21 3237 9400
Canada 905 712 2771 China 86 21 6426 0808 Czech Republic 420 241 430 532 Denmark 44 52 10 00 Finland 09 804 22 00 France 01 47 95 69 65
Germany 089 318 84 0 Greece 30 210 777 4396 Hong Kong 852 2789 3300 Hungary 36 1 455 8800 India 91 124 4029300 Israel 03 963 6050
Italy 39 02 216091 Japan 03 5811 6270 Korea 82 2 3473 4460 Mexico 52 555 488 7670 The Netherlands 0318 540666 New Zealand 0508 805 500
Norway 23 38 41 30 Poland 48 22 331 99 99 Portugal 351 21 472 7700 Russia 7 495 721 14 04 Singapore 65 6415 3188 South Africa 27 861 246 723
Spain 34 91 590 5200 Sweden 08 555 12700 Switzerland 061 717 95 55 Taiwan 886 2 2578 7189 United Kingdom 020 8328 2000