Electroporation Solution -BioE

Cat. No.	Product Description	Size
B02-01	BioE, DNA/RNA Electroporation solution	5x1ml
B02-02	BioE, DNA/RNA Electroporation solution	15 ml
B02-03	BioE, DNA/RNA Electroporation solution	50 ml

Introduction

Bioland Electroporation Solution provides a convenient and economical way to transfect primary and suspension cells. It provides excellent transfection efficiencies and cell viabilities during electroporation of DNA and siRNA. This solution can be used with a broad range of cells and is compatible with many square wave or exponential decay wave electroporators.

1. **Recommended electroporation conditions for select cell types using Square Wave Systems**

Cell Line	Nucleic Acid	Voltage (V)	Pulse Duration (msec)	Cuvette
A549	Plasmid or siRNA	160	15	2 mm
CHO	Plasmid or siRNA	160	15	2 mm
CV1	Plasmid or siRNA	100	25	2 mm
BHK21	Plasmid or siRNA	140	25	2 mm
HL60	Plasmid or siRNA	140	25	2 mm
HuT78	Plasmid or siRNA	130	25	2 mm

2. **Recommended electroporation conditions for select cell types using Exponential Decay Wave Systems**

Cell Line	Nucleic Acid	Voltage (V)	Capacitance (μF)	Resistance (ohms)	Cuvette
HeLa	Plasmid or siRNA	160	500	∞	2 mm
Jurkat	Plasmid or siRNA	140	1000	∞	2 mm
K562	Plasmid or siRNA	155	1000	∞	2 mm
3T3	Plasmid or siRNA	160	500	∞	2 mm

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Procedure

A. Preparation of cells 1 day prior to electroporation

1. Passage cultured cells approximately 1 day prior to electroporation so that the cells are actively growing at time of electroporation.
2. Incubate the cells overnight.

B. Electroporation Procedure

1. Warm all required solutions to room temperature for 15 – 30 minutes before use. The amount of Electroporation Solution required:
   a. 100µl for 2 mm cuvettes (For example, 10 electroporation needs 10x100µl=1ml solution)
   b. 250µl for 4 mm cuvettes
2. Harvest and count cells to determine cell concentration (X cells/ml). The cell density for electroporation is 1-10x10^6 cells/ml. Thus
   a. 1x10^5 cells for 2 mm cuvettes (For example, 10 electroporation needs 10x1x10^5=1x10^6 cells)
   b. 2.5x10^5 cells for 4 mm cuvettes
3. Determine the volume of harvested cells needed for electroporation:

   Cell volume (ml)=Cell number needed for electroporation/cell concentration(X cells/ml)

4. Pipette the volume of cells into a new tube and centrifuge at 1000 x g for 5 minutes. Aspirate the supernatant.
5. Resuspend the cells in 5ml PBS, centrifuge at 1000 x g for 5 minutes
   Note: During the centrifugation, add complete growth medium to a culture plate preparing for electroporated cells.
6. Resuspend the cells in Electroporation Solution, using the volume determined in step 1.
7. Add DNA (20µg/ml) or siRNA (100nM) into the cells, mix gently but thoroughly. Do not make bubbles.
8. Add 100µl DNA/cell mix to each 2 mm cuvette (250µl to 4 mm cuvette).
9. Electroporate the cells at room temperature. Refer to Table 1 for appropriate pulse conditions, or determine them experimentally.
10. Immediately after electroporation, transfer the cells into the culture plates prepared in step 5.
11. Incubate the electroporated cells in complete culture medium for 24 – 72 hours or as required.
12. Harvest cells and perform assays.