ElectroSHOX Competent Cells

Shipping: On Dry Ice | Catalog numbers

Batch No.: See vial | BIO-85038 ≥10^{10} cfu/µg of pUC19

Store at –80°C

A Meridian Life Science® Company

Storage and stability:
ElectroSHOX Competent Cells are shipped on Dry/Blue Ice and stored at –80°C.

Expiry:
When stored under the recommended conditions and handled correctly, full activity of the cells is retained until the expiry date on the outer box label.

Lot Efficiency:
This lot of electroporation competent cells was tested with an EquiBio Easyject Optima electroporator using a 0.1cm cuvette. Using settings recommended by the manufacturer and protocol as described below, actual pulse times were >4.5ms and transformation efficiencies >10^{10} cfu /µg pUC19 DNA.

Product Specifications

Efficiency	Pack Size	Control Vector
≥10^{10} cfu/µg of pUC19	1ml (10 x 100µl)	pUC19 (10pg/µl)

Genotype:
F^- *mcr*A Δ(*mrr-hsd*RMS-*mcr*BC) Φ80*lac*Z ΔM15 Δ*lac*X74 *rec*A1 *end*A1 *ara* Δ139 Δ(*ara*, *leu*)7697 *gal*U *gal*K λ- *rps*L (Str^R) *nup*G

Safety precautions
This product is for R&D use only, not for human use, or any other use. Please refer to the material safety data sheet for information regarding hazards and safe handling practice.

Notes:
Research Use Only.

Features

- Efficient transformation of large plasmids (>30Kb)
- Highest efficiency available: >10^{10} cfu/µg pUC19
- *rec*A1 and *end*A1 markers to minimize recombination events and improve the quality of plasmid DNA
- Lacks *E. coli* K restriction-modification system, to facilitate cloning of methylated genomic DNA

Applications

- Construction of cDNA and genomic DNA libraries
- Ideal for transformation of large plasmids (>30Kb)
- Blue/white color screening
- Construction of gene banks
- Efficient plasmid rescue from eukaryotic genomes

Description

ElectroSHOX Competent Cells are highly efficient *E. coli*, ideal for the construction of cDNA or genomic libraries using electroporation. The *lac*Z mutation allows blue/white color screening and α-complementation of recombinants. The *rec*A1 and *end*A1 markers minimize recombination events and improve the quality and yield of plasmid DNA. In order to facilitate cloning of methylated genomic DNA, ElectroSHOX lacks *E. coli* K restriction-modification systems, and is ideal for the transformation of large plasmids (>30Kb).

Suggested Transformation Procedure for Optimal Results:

1. Pre-chill electroporation cuvettes, electroporation chamber (if applicable), and microcentrifuge tubes on ice.
2. Remove cells from –80°C and thaw on ice.
3. Place 40-50µl of the competent cells into a chilled microcentrifuge tube. Add 1-5µl of sample DNA to cells. Thoroughly mix by gently pipetting and incubate on ice for approximately 1 minute. Note: For optimal results, sample DNA should be in sterile H_2O or low ionic strength buffer such as TE. If a control is desired, repeat this step with 2µl of the provided Control Vector (pUC19) in a separate tube. Refreeze any unused cells and store at –80° C.
4. Transfer cell mixture into a pre-chilled cuvette and pulse using settings recommended by manufacturer of electroporator. As a general guideline, maximum transformation efficiency is normally attained using cuvettes with a 0.1 cm gap with an applied voltage of ~1800 (field strength of ~18 kV/cm).
5. Immediately dilute pulsed cells to 1ml with SOC medium and transfer to a sterile culture tube.
6. Gently shake culture tube ~200rpm for 60 minutes at 37°C.
7. Plate by spreading 5-200µl of cell transformation mixture on LB agar plates containing appropriate antibiotic and incubate overnight at 37°C.

When performing the pUC19 control transformation, plate 5µl of the transformation mixture on a LB agar plate containing 100µg/ml ampicillin. To facilitate cell spreading, place a pool of SOC (100µl) onto surface of plate prior to addition of transformation mixture.

Transformation Efficiency Calculation for Control Vector

$$\text{Transformation Efficiency (cfu/µg pUC19 DNA)} = \frac{\text{\# colonies (colony forming units)}}{\text{pg pUC19 transformed}} \times \frac{10^6 \text{ pg}}{\text{µg}} \times \frac{\text{Final volume (µl) of transformation mix}}{\text{Volume plated (µl)}}$$

For example:
If 300 colonies were obtained after transforming 20pg of pUC19 and plating 5µl of the final 1ml transformation mixture, the calculated transformation efficiency would be:

$$300\text{cfu} \times 10^6\text{pg} \times 1000\text{µl} = 3 \times 10^9 \text{ cfu/µg pUC19}$$

Associated Products:

Product Name	Pack Size	Cat No
T4 DNA Ligase	500 Units	BIO-27026
Quick-Stick Ligase	50 Reactions	BIO-27027
IPTG	5g	BIO-37036
X-GAL	1g	BIO-37035

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