α-Select Electrocompetent Cells

Shipping: On Dry Ice Catalog numbers

Batch No.: See vial BIO-85028 ≥10^9 cfu/µg of pUC19

BIOLINE
A Meridian Life Science® Company

Store at –80°C

Storage and stability:
α-Select Electrocompetent 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 >10^9 cfu /µg pUC19 DNA.

Product Specifications

Efficiency	Pack Size	Control Vector
≥10^9 cfu/µg of pUC19	1ml (10 x 100µl)	pUC19 (10pg/µl)

Genotype:
*deoR endA*1 *recA*1 *relA*1 *gyrA*96 *hsdR*17($r_k^-m_k^+$) *supE*44 *thi*-1 *Δ(lacZYA-argFV*169) *Φ80δlacZ*ΔM15 $F^-\gamma^-$

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

- Comparable to DH5α™
- Electroporation grade
- >10^9, transformation efficiency.
- Convenient 100µl aliquots
- Accommodate larger plasmids

Applications

- Transformation of cloned DNA into bacterial cells
- Blue/white color screening
- Ideal for subcloning and generating cDNA libraries

Description

α-Select Electrocompetent Cells contain a *lacZ* marker that provides α-complementation of the β-galactosidase gene for blue/white color screening. The cells are ideal for generating cDNA libraries and subcloning. α-Select Electrocompetent Cells also provide *recA*1 and *endA*1 markers to minimize recombination and enhance the quality of the plasmid DNA. pUC19 DNA is also provided as a positive control.

Suggested Transformation Procedure for Optimal Results:

1. Pre-chill electroporation cuvettes, electroporation chamber (if applicable), and microcentrifuge tubes on ice.
2. Remove cells from –70°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
Quick-Stick Ligase	50 Reactions	BIO-27027
IPTG	5g	BIO-37036
X-GAL	1g	BIO-37035

Product Citations:

1. Zhao, C., *et al. PLoS One.* **9.4,** e96279 (2014)
2. Hidalgo, H., *et al. J. Antimicro. Chemo.* **68(7),** 1543-50 (2013)
3. Hoolahan, A.H., *et al. J. Nematology.* **44(1):** 7 (2012)

Bioline Reagents Ltd
UNITED KINGDOM
Tel: +44 (0)20 8830 5300
Fax: +44 (0)20 8452 2822

Bioline USA Inc.
USA
Tel: +1 508 880 8990
Fax: +1 508 880 8993

Bioline GmbH
GERMANY
Tel: +49 (0)337 168 1229
Fax: +49 (0)3371 68 1244

Bioline (Aust) Pty. Ltd
AUSTRALIA
Tel: +61 (0)2 9209 4180
Fax: +61 (0)2 9209 4763

Bioline France
FRANCE
Tel: +33 (0)1 42 56 04 40
Fax: +33 (0)9 70 06 62 10

Meridian Bioscience Asia Pte Ltd
SINGAPORE
Tel: +65 6774 7196
Fax: +65 6774 6441

Website: www.bioline.com/ email: info@bioline.com