PRODUCT INFORMATION

Product Name : Jet Competent Cell (DH5α) Large
Code No. : DS225L
Size : DS225 × 5 (100 µl of cell × 50, Recovery Medium 1 ml × 50)
Competency : > 2 × 10^8 cfu/µg (pUC19)

This product is for research use only

Description :

In transformation procedure, Jet Competent Cell (DH5α) requires neither heat shock nor culture after heat shock. Transformation of the Jet Competent Cell (DH5α) can be completed within approximately 10 minutes and its efficiency is higher than 2 × 10^8 cfu/µg with the provided Recovery Medium*. The time-saving procedure is a great benefit for researchers and experimenters. The strain of the Jet Competent Cell, DH5α, is one of the standard strains as competent cells in molecular biology applications. The DH5α cell has mutation of φ80*lacZ*ΔM15 and lacks *laqI*^{q} gene, which allows blue-white color screening of transformants with X-gal (IPTG is not required).

*: Recovery Medium is prepared based on SOC medium**.**

Genotype of *E coli* strain DH5α :

*supE*44, Δ*lac*U169(φ80*lacZ*ΔM15), *hsdR*17, *recA*1, *endA*1, *gyrA*96, *thi*-1, *relA*1

Quality Control :

The Jet Competent Cell (DH5α) was tested for transformation efficiency using supercoiled pUC19 plasmid according to the Jet Transformation Protocol described in this Product Information (LB plates containing 50 µg/ml ampicillin) and its efficiency was confirmed to be greater than 2 × 10^8 cfu/µg.

Storage condition :

Stable at -80℃ with little or no loss in transformation efficiency for 12 months from the date of receipt. Competent cells are sensitive to variation in temperature. Must be stored at -80°C. Upon receipt, store the Jet Competent Cell (DH5α) in a freezer at -80°C directly from a dry ice shipping box and store Recovery Medium at room temperature (or -80°C). To avoid precipitation in Recovery Medium, slow freezing or freeze-thaw cycle (for example, storage around -20°C) should not be done, although transformation efficiency is not very affected by the precipitate.

Handling of competent cells :

• Competent cells are sensitive to mechanical shock. Excessive mixing should be avoided.
• After thawing competent cells on ice, cells tend to lose transformation efficiency gradually. Transformation should be started immediately following thawing cells on ice.
• Use of refrozen competent cells is not recommended.

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Transformation Procedure :

● Materials to be supplied by user

- LB plates with antibiotic
- Ice bucket with ice
- Sterile 1.5 ml tubes
- Sterile spreaders
- 37°C incubator

If blue-white screening is required to select transformants,

- 20 mg/ml X-Gal in dimethylformamide (DMF)

● Jet Transformation Protocol

1. Thaw one tube of competent cells on ice. One tube contains 100 µl of cells for each transformation.
2. Add DNA sample* directly into the competent cells and mix by flicking the tube.
   * The volume of DNA sample should not exceed 5 % of that of competent cells (i.e. for 100 µl of competent cells, use ≦5 µl).
3. Incubate the tube on ice for 5 minutes.
4. Transfer the cells to a new 1.5 ml sterile tube containing 0.9 ml of Recovery Medium (pre-warmed at room temperature to 37°C) mix the tube contents by vortex for one second, and incubate the tube at room temperature for 5 minutes.
5. Spread all or an aliquot of the cells to an LB agar plate containing appropriate antibiotic.
   If blue-white color screening is required, spread 25 µl of 20 mg/ml X-Gal on an LB agar plates and allow the reagent to absorb 30 minutes prior to inoculating cells. As DH5α does not have *lacI*^{q}, IPTG is not required for blue-white screening..

Note: It is especially important to absorb these solutions prior to inoculating cells for kanamycin or tetracycle selection. Do not mix cells with solutions of these reagents before inoculating to a plate.

6. Incubate the plate at 37°C overnight.

Reference:

Sambrook, J. and Russell, D.W. (2001) Molecular Cloning: A Laboratory Manual, 3rd ed., Cold Spring Harbor Laboratory Press, Cold Spring Harbor, NY.

Related Products:

DS210	Competent Cell JM109	DS220	Competent Cell DH5α
DS225	Jet Competent Cell (DH5α)	DS229	Supercompetent Cell DH5α