PRODUCT INFORMATION

Product Name : Jet Competent Cell (DH5α) Mini
Code No. : DS225S
Size : 100 µl (purple tube) × 2
Competency : > 1×10^8 cfu/µg (pBR322)
Supplied product : Recovery Medium, 1 ml (yellow tube) × 2

This product is research use only

Description :

Jet Competent Cell (DH5α) was developed by higher technique of BioDynamics Laboratory Inc. In transformation procedure, Jet Competent Cell (DH5α) requires neither heat shock nor culture after heat shock. Transformation of the Jet Competent Cell (DH5α) is done within about 10 minutes and its efficiency is higher than 1×10^8 cfu/µg with original 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 pBR322 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 1×10^8 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 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
- Sterilized 1.5 ml tubes
- Sterile spreader
- 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 the competent cell on ice (100 µl in a tube of each transformation).
2. Add DNA sample* directly into the competent cell and mix by flicking gently.
   * The volume of DNA sample should not exceed 5 % of that of competent cell (i.e. 5 µl).
3. Incubate the tube on ice for 5 minutes.
4. Transfer the cell to a new 1.5 ml sterilized tubes 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 aliquot of the cell to a LB agar plate containing appropriate antibiotic. If blue-white color screening is required, spread 25 µl of 20 mg/ml X-Gal on the 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 basically.

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

DS110	DNA Ligation Kit ver. 2	DS210	Competent Cell JM109
DS220	Competent Cell DH5α	DS225	Jet Competent Cell (DH5α)
DS240	Competent Cell BL21	DS250	Competent Cell BL21(DE3)
DS255	Zip Competent Cell BL21(DE3)	DS260	Competent Cell BL21(DE3)pLysS

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