

## PRODUCT INFORMATION

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**Product Name :** Jet Competent Cell (DH5 $\alpha$ )  
**Code No. :** DS225  
**Size :** 100  $\mu$ l  $\times$  10  
**Competency :**  $> 1 \times 10^8$  cfu/ $\mu$ g (pBR322)  
**Supplied product :** Recovery Medium, 1 ml  $\times$  10

*This product is research use only*

### Description :

Jet Competent Cell (DH5 $\alpha$ ) was developed by higher technique of BioDynamics Laboratory Inc. In transformation procedure, Jet Competent Cell (DH5 $\alpha$ ) requires neither heat shock nor culture after heat shock. Transformation of the Jet Competent Cell (DH5 $\alpha$ ) is done within about 10 minutes and its efficiency is higher than  $1 \times 10^8$  cfu/ $\mu$ g with original Recovery Medium\*. The time-saving procedure is a great benefit for researchers and experimenters. The strain of the Jet Competent Cell, DH5 $\alpha$ , is one of the standard strains as competent cells in molecular biology applications. The DH5 $\alpha$  cell has mutation of  $\phi 80lacZ\Delta M15$  and lacks *laqI*<sup>q</sup> 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 DH5 $\alpha$ :

*supE44,  $\Delta lacU169(\phi 80lacZ\Delta M15), hsdR17, recA1, endA1, gyrA96, thi-1, relA1$*

### Quality Control :

The Jet Competent Cell (DH5 $\alpha$ ) was tested for transformation efficiency using supercoiled pBR322 plasmid according to the Jet Transformation Protocol described in this Product Information (LB plates containing 50  $\mu$ g/ml ampicillin) and its efficiency was confirmed to be greater than  $1 \times 10^8$  cfu/ $\mu$ g.

### Storage condition :

Stable at -80 $^{\circ}$ C 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  $^{\circ}$ C. Upon receipt, store the Jet Competent Cell (DH5 $\alpha$ ) in freezer at - 80  $^{\circ}$ C directly from a dry ice shipping box and store Recovery Medium at room temperature (or - 80  $^{\circ}$ C). To avoid precipitation in Recovery Medium, slow freezing or freeze-thaw cycle (for example, storage around - 20  $^{\circ}$ 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<sup>f</sup>*, IPTG is not required basically.

Note: It is especially important to absorb these solutions prior to inoculating cells for kanamycin or tetracycline 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	DS225L	Jet Competent Cell (DH5α)L
DS240	Competent Cell BL21	DS250	Competent Cell BL21(DE3)
DS255	Zip Competent Cell BL21(DE3)	DS260	Competent Cell BL21(DE3)pLysS