PRODUCT INFORMATION

Product Name : Giga Competent Cell (DH5α)
Code No. : DS229M
Size : 100 µl × 5
Competency : > 1×10^9 cfu/µg (pBR322)
Supplied Product : SOC medium, 1 ml × 5 *This product is for research use only*

Description :
Giga Competent Cell (DH5α) is developed to confer extremely high transformation efficiency and an ideal product for DNA cloning, library construction and a variety of other applications. The Giga Competent Cell is prepared from *E. coli* DH5α stain (one of the standard strains for molecular biology applications) by advanced chemical procedure. 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).

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 :
Transformation was carried out according to the method described in this Product Information using supercoiled pBR322 plasmid. Transformants were plated on LB plates containing 50 µg/ml ampicillin. The efficiency was confirmed to be greater than 1×10^9 cfu/µg.

Storage Condition :
Stable at -80℃ with little or no loss in transformation efficiency for 6 months from the date of receipt. Competent cells are very sensitive to variation in temperature. Must be stored at -80°C. Upon receipt, store the competent cells in a freezer at -80°C directly from a dry ice shipping box and store SOC medium at room temperature or at -80°C.

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.

Composition of SOC Medium Supplied :

20 g/L	tryptone
5 g/L	yeast extract
0.5 g/L	NaCl
0.186 g/L	KCl
2.4 g/L	$MgSO_4$, anhydrous
4 g/L	glucose

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Transformation Procedure :

● Materials to be supplied by user

- LB plates with antibiotic
- 42°C water bath
- Sterile spreaders
- 15 ml sterilized-polypropylene culture tubes
- Ice bucket with ice
- 37°C shaker
- 37°C incubator

If blue-white screening is required to select transformants,

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

● **Transformation**

1. Thaw one tube of Giga Competent Cell 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 20 minutes.
4. Heat Shock the cells by placing the tube in 42°C water bath for 45 seconds. Do not mix or shake.
5. Remove the tube from the 42°C bath and place it on ice for 2 min.
6. Transfer the cells to a 15 ml sterilized culture tube containing 0.9 ml of SOC medium (pre-warmed at room temperature to 37°C). Culture the cells at 37°C for 1 hr in a shaker.
7. Spread an aliquot of the cells onto an LB agar plate containing appropriate antibiotic.
   If blue-white color screening is required, spread 25 µl of 20 mg/ml X-Gal onto an LB agar plate 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.
8. 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)	DS255	Zip Competent Cell BL21(DE3)

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