PRODUCT INFORMATION

Product Name : Competent Cell JM109 Large
Code No. : DS210L
Size : DS210 × 5 (100 µl of cell × 50, SOC medium 1 ml × 50)
Competency : > 5 × 10^8 cfu/µg (pUC19)

This product is for research use only

Description :

Competent Cell JM109 is a high-efficiency chemically competent cell from *E. coli* JM109 strain (one of the standard strains for molecular biology research) and suitable for a wide variety of cloning applications. The JM109 cell has *laq*I^{q}ZΔM15 gene on F' episome, which allows blue-white color screening of transformants.

Genotype of *E. coli* strain JM109 : *rec*A1, *sup*E44, *end*A1, *hsd*R17, *gyr*A96, *rel*A1, *thi*, Δ(*lac-pro*AB), F′ [*tra*D36, *pro*AB$^+$, *laq*I^{q}ZΔM15]

Quality Control :

Transformation was carried out according to the method described in this Product Information using supercoiled pUC19 plasmid. Transformants were plated on LB plates containing 50 µg/ml ampicillin. The efficiency was confirmed to be greater than 5 × 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 Competent Cell JM109 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
- Ice bucket with ice
- 15 ml sterilized-polypropylene culture tubes
- 42°C water bath
- 37°C shaker
- Sterile spreaders
- 37°C incubator

If blue-white screening is required to select transformants,

- 20 mg/ml X-Gal in dimethylformamide (DMF)
- 100 mM IPTG in water (filter sterilized)

● Transformation

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 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 and 50 µl of 100 mM IPTG on the LB agar plates and allow these reagents to absorb 30 minutes prior to inoculating cells.
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:

DS225	Jet Competent Cell (DH5α)	DS218	Electrocompetent Cell JM109
DS220	Competent Cell DH5α	DS228	Electrocompetent Cell DH5α
DS229	Giga Competent Cell (DH5α)		