PRODUCT INFORMATION

Product Name : Competent Cell JM109
Code No. : DS210
Size : 100 µl × 10
Competency : > 2 × 10^8 cfu/µg (pBR322)
Supplied product : SOC medium, 1 ml × 10 *This product is research use only*

Description :

Competent Cells from BioDynamics Laboratory Inc. are manufactured by sophisticated procedure and under stringent quality control. Competent Cell of *E coli* strain JM109 is one of the standard competent cells for molecular biology applications. The JM109 cell contains *laq*I^qZΔM15 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^qZΔM15]

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 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 Competent Cell JM109 in freezer at - 80 °C directly from a dry ice shipping box and store SOC medium at room temperature (Freezing preservation at - 80 °C is also possible).

Handling of competent cells :

• Competent cells are sensitive to mechanical shock. Excessive mixing should be avoided. Mix flicking the tube.
• 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 spreader
- 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 sterilize)

● Transformation

1. Thaw the competent cells on ice (100 µl in a tube of each transformation).
2. Add DNA sample* directly into the competent cells 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 20 minutes.
4. Heat Shock the cell by placing a tube in 42°C water bath for 45 seconds. Do not mix or shake.
5. Remove tube from the 42°C bath and place them on ice for 2 min.
6. Transfer cell to 15 ml sterilized culture tubes containing 0.9 ml of SOC medium (pre-warmed at room temperature to 37°C). Culture the cell at 37°C for 1 hr in a shaker.
7. Spread 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 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:

DS110	DNA Ligation Kit ver. 2	DS210L	Competent Cell JM109 Large
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