PRODUCT INFORMATION

Product Name : Competent Cell BL21
Code No. : DS240
Size : 100 µl × 10
Competency : > 2×10^7 cfu/µg (pBR322)
Supplied product : SOC medium, 1 ml × 10 *This product is research use only*

Description :

E. coli BL21 strain is a derivative of *E. coli* B strain and lacks both the *lon* protease and the *ompT* membrane protease. The lack of these proteases reduces degradation of proteins when the strain is used as a host for protein expression. *E. coli* BL21 strain has a mutation of DNA cytosine methylase (*dcm*). The mutation blocks a methylation of internal cytosine residues on plasmid DNAs, which is used for cleavage of the plasmids by some restriction enzymes.

Genotype of *E coli* strain BL21 : F^- *ompT hsdS*($r_B^- m_B^-$) *gal dcm*

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

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 BL21 in a freezer at - 80 °C directly from the dry ice shipping box and store SOC medium at room temperature or -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 after the cells have thawed on ice.
• Use of refrozen competent cells is not recommended.

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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 2×10^7 cfu/µg.

Transformation Procedure :

● Materials to be supplied by user

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

● Transformation

1. Thaw the competent cells on ice (100 µl in a tube for each transformation).
2. Add DNA sample* directly into the competent cells and mix by flicking the tube.
   * The volume of the DNA sample should not exceed 5 % of that of the competent cells (i.e., 5 µl).
3. Leave the tube on ice for 20 minutes.
4. Heat Shock the cells by placing the tube in a 42°C water bath for 45 seconds. Do not mix or shake during this time.
5. Remove the tube from the water bath and place them 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). Culture the cells at 37°C for 1 hr in a shaker.
7. Spread an aliquot of the cells* to a LB agar plate containing the appropriate antibiotic.
   * If plating <100 µl of the cells, mix SOC medium to the cells up to 100 µl then spread them.
8. Incubate the plates 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)
DS250	Competent Cell BL21(DE3)	DS255	Zip Competent Cell BL21(DE3)
DS260	Competent Cell BL21(DE3)pLysS	DS500	Quick Blue Protein Staining Solution

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