JM109 Competent Cells

Cat: C1300
Size: 10×100μL/20×100μL
Storage: Store at -70℃ and ship in dry ice packaging. -70℃ Store liquid nitrogen for at least one year from the date of receipt and for at least 6 months.

Introduction:

JM109 competent cells produced by our company are the competent cells obtained by special processing of Escherichia coli JM109 strain, which can be used for chemical transformation of DNA. Using pUC19 plasmid detection, the conversion efficiency can reach 10^8, store at -70℃ and the conversion efficiency does not change for several months.

Genotype: recA supE44 endA1 hsdR17 gyrA96relA1 thi Δ(lac-proAB) F '[traD36 proAB+ lacIq lacZ δM15]

Feature: An amber-inhibited F 'recombination deficient strain. Supports the growth of the M13 phage vector and has modification effects on transfected DNA, but without restriction. F 'in this strain carries lacZΔM15, which enables alpha-complementation with the amino end of β-galactosidase encoded in λZAP and can be used for blue-white spot screening.

Protocols: (The following operations are carried out according to the standard of sterile conditions)

1. Put the competent cells on ice to melt. The following experiment takes 100μL competent cells as an example.
2. Add the target DNA to be transformed into the competent cells suspension, pay attention to the volume of the target DNA should not exceed one-tenth of the volume of the competent cells suspension fluid, gently rotate the centrifuge tube to mix the contents, and place it in the ice bath for 30min.
3. Place the centrifuge tube in the 42℃ water bath for 60-90s, and then quickly transfer it to the ice bath for 2-3min, taking care not to shake the centrifuge tube.
4. Add 500μL sterile and non-resistant SOC or LB medium to the centrifuge tube and oscillate at 37℃, 180rpm for 1h. The purpose was to enable the expression of related resistance marker genes on the plasmid to resuscitate the bacteria.
5. Appropriate amount of transformed competent cells were coated with SOC or LB plate containing corresponding antibiotics, and cultured invert at 37℃ for 12-16h. The amount of coating can be adjusted according to the specific experiment. If the total amount of transformed DNA is large, about 100μL of the transformed product coating plate is recommended. Conversely, if the total amount of converted DNA is less, 200-300μL of converted product coating is preferable. Excessive bacterial liquid can inhibit bacterial growth. If few clones are expected, part of the culture solution can be removed by centrifugation, and the bacteria can be

suspended and coated on a plate. The remaining bacterial solution can be saved at 4℃ and can be recoated with a new plate if the number of transformed colonies is low the next day.

Notes:

1. The competent cells should be stored in -70℃, can not be frozen and thawed repeatedly, otherwise its conversion efficiency will be reduced.
2. The experiment should be strictly aseptic operation, to prevent the contamination of other DNA, to avoid the impact on the future screening and identification.
3. During conversion, the conversion efficiency is proportional to the concentration of foreign DNA within a certain range, but when the amount of foreign DNA added is too large or the volume is too large, the conversion efficiency will be reduced. The volume of DNA during transformation should be less than one-tenth of the volume of competent cells.
4. Calculation of conversion rate: conversion rate = total number of colonies generated/total DNA of the planking plate 5. In order to prevent the conversion experiment from being unsuccessful, part of the connected products can be retained for re-conversion to minimize the loss.

Related Products:

I1020 IPTG solution(50mg/mL)
A1170 Ampicillin storage Solution(100mg/mL)
K1030 Kanamycin(100mg/mL)
L1015 LB solid medium(dry powder)
L1020 SOC Liquid medium(dry powder)
X1010 X-gal(20mg/mL)