

Introduction

SS320 (MC1061 F') Super Electrocompetent Cells deliver $\geq 2 \times 10^{11}$ cfu/ug of DNA and are particularly useful for phage display protein expression. M13KO7 is an M13 derivative, with the origin of replication from P15A and the kanamycin resistance gene from Tn903 both inserted within the M13 origin of replication. M13KO7 is able to replicate in the absence of phagemid DNA.

Specifications

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| Competence | Electroporation Competent(M13KO7 infected) |
| Application | Phage Display |
| Organism | E.coli |

| Application |
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- Phage display library construction and screening
- Antibody epitope mapping
- Peptide ligand identification
- Protein-Protein interaction identification
- Directed evolution of proteins
- Find tumor antigens, candidates for therapeutic antibodies, enzyme inhibitors, receptor agonists, etc.

Features

Transformation Efficiency $\geq 2 \times 10^{11}$ cfu/ μ g pUC19.
M13KO7 infected.
Control DNA included.
Packaged as DUOs (2 transformations per tube)

Genotype

F' [proAB lacIqZ ΔM15 Tn10 (TetR)] araD139 Δ(ara-leu)7696 galE15 galK16 Δ(lac)X74 rpsL (Str^R) hsdR2 (rK⁻ mK⁺) mcrA mcrB1

Protocol

1. Prepare 17mm x 100mm sterile tubes (one for each conversion reaction) and restore the 2 * YT culture medium to room temperature.
2. Place the electric cup (0.1cm gap) and microcentrifuge tube on ice.
3. Remove the electropositive cells from the -80 °C freezer and place them in an ice box until completely melted (10-15 minutes).
4. After the cells have completely dissolved, gently pat and mix well. Take out 25 µl of cells into a pre cooled microcentrifuge tube placed on ice. (It is recommended to use one tube of competent cells at a time. If 25 µl is used at a time, please immediately put the remaining half back in the -80 °C freezer).
5. The volume of DNA added should not exceed 10% of the receptive state volume.
6. Gently transfer 25 µl of cell/DNA mixture into a pre cooled electric transfer cup, taking care to avoid the formation of bubbles. Quickly flick the test tube downwards with your fingers to allow the cells to deposit at the bottom of the well electrode rotating cup. Perform electric conversion according to the recommended conditions.
7. Add 975 µl of 2 * YT culture medium to an electric transfer cup after the pulse immediately, blow the resuspended cells up and down three times with gun, and then transfer the culture medium containing the cells to a sterile culture tube.
8. Place the culture tube on a shaker at 250 rpm and incubate at 37 °C for 1 hour.
9. Take 100 µl of transformed cells from the culture tube and coat them onto a 2 * YT agarose plate containing specific antibiotics.
10. Place the culture plate at 37 °C overnight for cultivation, and calculate the conversion efficiency the next day.

Culture medium formula

2 * YT Agar Plates (per 1L formula)

16g tryptone

10g yeast extract

5g NaCl

15g agar

Add all components to deionized water and adjust the pH to 7.0 with NaOH. Sterilize under high pressure and then cool to 55 °C.