



TG1 Chemically Competent E.Coli Cells

Catalog # TG1-201

TRANSFORMATION PROTOCOL

Product details:

TG1 competent cells can be used for phage display library construction and screening, cloning, sub-cloning, and protein expression. *lacI^f* gene encoded on *F'* episome allows tight regulation of expression vectors that contain an *E. coli* promoter under control of a *lac* operator sequence, like *T5*, *tac*, *trc*. Transformation efficiency $\geq 1 \times 10^8$ cfu/ μ g pBR322 plasmid DNA.

***E. coli* genotype:**

F'[*traD36 lacI^f lacZ Δ M15 proA⁺B⁺*] *glnV (supE) thi-1 Δ (mcrB-hsdSM)5 (r_K⁻ m_K⁻ McrB⁻) Δ (lac-proAB)*

Suggested Transformation Procedure for Optimal Results:

1. Remove cells from -80°C and let thaw on ice.
2. Gently mix cells by lightly flicking tube. Aliquot ~ 50 - $100 \mu\text{l}$ of cells into chilled, $17 \times 100 \text{ mm}$ polypropylene tube(s). Unused cells may be refrozen, but a drop in efficiency may result. For optimal recovery, refreeze cells in a dry ice/ ethanol bath prior to -80°C storage.
3. Add DNA solution ($\leq 5 \mu\text{l}$ per $50 \mu\text{l}$ cells) to cell suspension and gently swirl tube(s) for a few seconds to mix.
4. Incubate on ice for 30 minutes.
5. Place tube(s) in 42°C water bath for ~ 30 to 45 seconds without shaking. For $50 \mu\text{l}$ aliquots, 30 seconds is recommended for maximum efficiency.
6. Place tube(s) on ice for ~ 2 minutes.
7. Dilute transformation reaction(s) to 1ml by addition of 900 - $950 \mu\text{l}$ SOC. SOC medium: 2% Tryptone, 0.5% Yeast Extract, 0.4% glucose, 10 mM NaCl, 2.5 mM KCl, 10 mM MgCl_2 & 10 mM MgSO_4 . Other media can be used to grow transformed cells, including standard LB or TB broths. However, SOC is the optimal choice for recovery of the cells and for obtaining maximum transformation efficiencies.
8. Shake tube(s) ~ 200 rpm for 1 hour at 37°C .
9. Plate by spreading 50 - $200 \mu\text{l}$ of cell transformation mixture on LB agar plates containing appropriate antibiotic and incubate overnight at 37°C .

Storage is recommended at -80°C .

Usage: This product is intended for LABORATORY RESEARCH USE ONLY.