AMID BIOSCIENCES

2X TSS Bacterial Transformation Kit

Catalog # TSS-BTK-201

PRODUCT DESCRIPTION AND PROTOCOL

Product Description
Transformation and Storage Solution (TSS) is used for the preparation of competent *E. coli* cells in a single step and to transform the cells without heat-shock. Amid Biosciences' TSS is optimized version of solution described initially by *Chung et al*. (1) and contains DMSO, PEG, Mg^{2+} salts, along with proprietary additives. This solution allows rapid preparation of the competent cells with typical transformation efficiencies that range from 10^5 to 10^7 cfu/µg of DNA, however, the transformation efficiencies up to 10^8 can be obtained for some *E. coli* strains. For applications that require high efficiencies (e.g. library preparations, transformation of ligation reactions), Amid Biosciences' selection of ready-to-use Chemically Competent Cells would be a good choice.

Benefits
- Fast preparation of competent cells.
- Suitable for various *E. coli* strains (DH5a, HB101, JM109, XL1-Blue, and etc.)
- Transformation cells without heat-shock.

Kit Components & Storage
- 2X TSS: 10 ml (1 vial)
  Store at -20 °C.
- SOC medium: 20 ml (1 vial)
  Store at -20 °C or 4 °C.
- Control pUC19 plasmid DNA: 20 µl (5 ng/µl)
  Store at -20 °C.

Usage:
This product is intended for LABORATORY RESEARCH USE ONLY.
Not for diagnostic or therapeutic use.

Applications
- Preparation of *E. coli* competent cells for transformation.

Suggested Protocols for Preparation and Transformation of TSS-Competent Cells

Preparation of Competent Cells

1. Prepare 50 ml of appropriate liquid media (LB, SOC) in a sterile 250 ml Erlenmeyer flask. Add 1 ml of overnight culture of *E. coli* to the media.
2. Incubate at 37°C with shaking (at 200 rpm) until the cells reach early log phase (OD600 = 0.25-0.4).
3. While cells are growing, thaw 2X TSS on ice and dilute an appropriate amount 1:1 with sterile distilled water to make 1X TSS (100 µl of diluted TSS will be needed for each ml of cell culture). Chill solution on ice.
4. Once the proper optical density has been achieved, chill bacterial culture on ice for 10 min and then centrifugate at 3,000xg for 10 min at 4°C.
5. Discard the supernatant and add 5 ml of cold 1X TSS. Gently suspend the cells and keep the cells on ice.
6. Aliquote 100 µl of TSS suspended cells to prechilled sterile 1.5ml tubes.
7. Cells can be used immediately for transformation or stored at -80°C for several months.

Transformation of TSS-competent Cells

1. Use 100 µl of competent cells for each transformation. Place freshly made TSS-competent cells (0.1 ml cells/tube) on ice or remove cells from –80°C and let thaw on ice.
2. Add 0.1-10 ng of DNA to each tube of competent cells. Gently mix the cells and DNA by lightly flicking tube.
3. Incubate the cells and DNA on ice for 5-30 minutes.
4. Add 1 ml of SOC medium to each transformation reaction. 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. Incubate the cells at 37°C for up to 1 hour with shaking (at 200 rpm).

5. Plate 0.1-0.2 ml of the cells onto a Petri plate with appropriate antibiotic and incubate overnight at 37°C.

Reference:

(1) Chung et al. (1989) Proc. Natl. Acad. Sci. USA 86, 2172.