

TRAEN *E. coli* TRAnsformation ENhancer

□ Cat. No: TS-1006-01: 0,25mL package includes: 1 vial with 250 microliter TRAEN

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1. Introduction

The TRAEN reagent Enhances the transformation of Plasmid DNA into *E. coli*. Based on the successful SAINT cationic amphiphiles used for DNA transfections in eukaryotic cells, Synvolux Therapeutics B.V. developed a novel formulation that contains a proprietary SAINT reagent mixed with other components optimized for transformation of plasmid DNA into *E. coli*.

For a wide variety of *E. coli* strains the transformation efficacy can be enhanced by using TRAEN.

Advantages using TRAEN include:

- Ease of use (standard protocols can still be used)
- More transformants are generated
- No cytotoxicity

2. Storage and stability

It is recommended that TRAEN is stored at 4-7 °C. Stability experiments have shown that TRAEN stored at the recommended temperature is stable for at least one year after opening.

Furthermore, it has been found that transformation enhancement activity is not influenced by prolonged exposure (6 months) of the TRAEN reagent to ambient temperature.

3. Quality control

Functionality: Transformation enhancement capacity is performed on *E. coli* strain DH5α.

Cytotoxicity: TRAEN has no bacterial and fungal contaminations.

4. TRAEN Protocol

Preparation of competent *E. coli*.

Prepare your *E. coli* which you want to use for the transformation as you are used to do.

Preparation of the plasmid DNA

Prepare the plasmid DNA according to your standard protocol. Add 3 µl of TRAEN per microgram of plasmid DNA, which is diluted in 100µL water.

Perform the transformation according to your standard protocol.

5. Optimization

The pDNA / TRAEN ratio may be optimized. Depending on the DNA purity, DNA length, and the *E. coli* strain used, a different ratio might improve the transformation efficiency. Optimization is suggested for each new combination of strain and plasmid. An example for an optimization scheme is shown below.

Example for an optimization:

1µg pDNA/ 100µL* → +1µL TRAEN
+2µL TRAEN
+3µL TRAEN
+4µL TRAEN
+5µL TRAEN

* pDNA should be diluted in water

Add the amount of this complex, which your normally are using, to your transformation and follow your standard protocol.

Notes:

- Before each transformation experiment new complex should be prepared and used immediately.*
 - For multiple transformation experiments, you can use a master mix required for multiple transformations.*
 - For optimal results, it is recommended to assay a range of DNA concentrations (see example optimization).*
 - Adjust the amount of TRAEN to your DNA amount (It might be useful to dilute the TRAEN first in water. Always use fresh dilutions).*
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