

PEI STAR™ Transfection Reagent Preparation

In Brief

[PEI STAR™ Transfection Reagent](#) (Catalog # 7854) is a chemically defined, high-performance polyethylenimine (PEI) transfection reagent for cost-effective, affordable and scalable transient gene expression. PEI is a synthetic polymer with an exceptionally high positive charge density in pH-neutral solutions. Positively charged PEI binds strongly to negatively charged DNA and imparts a net cationic charge, allowing the DNA to enter cells. PEI is a non-viral vector commonly used to transfect HEK293 and CHO cells. Applications include production of recombinant proteins, antibodies and viruses.

Pre-dissolved, ready-to-use formulation of PEI STAR™ also available: [PEI STAR-Go™ transfection reagent](#) (Cat. No. 8174).

Protocol

To prepare 100 mL, 1 mg/mL PEI STAR™ Transfection Reagent, please see the materials below.

To prepare 1000 mL, scale the contents up x10 and use 1 M sodium hydroxide for pH adjustment.

Materials

- PEI STAR™, powder, 100 mg
- 100 mL cell culture grade water
- 10 mL 0.1 M USP grade sodium hydroxide
- 0.1 or 0.2 µm syringe filter
- Graduated 100 mL container
- Sterile polypropylene or polyethylene aliquot containers

Equipment

- Analytical balance
- pH meter
- Biosafety Cabinet or Clean Room Enclosure
- Filtration equipment (e.g. syringes, vacuum pump)

Procedure

1. Accurately weigh and dissolve 100 mg of PEI STAR™ powder in 80 mL of cell culture grade water. Mix for several minutes to dissolve powder. Trace amounts of solids may remain after mixing. If present, these will be removed at a later step. These do not interfere with performance.
2. Gradually add 0.1 M sodium hydroxide to PEI STAR™ solution while monitoring with pH meter to adjust pH to 7.0 +/- 0.1. Mix well in between additions of sodium hydroxide. This should use less than 10 mL sodium hydroxide solution.
3. Add cell culture grade water to PEI STAR™ solution to bring total volume to 100 mL.
4. In an aseptic environment, such as a clean biosafety cabinet or clean room enclosure, sterile-filter the solution with 0.1 or 0.2 µm syringe filter into sterile storage container(s). PES filter membranes are recommended. Nylon membranes are acceptable.
5. Label and store container(s) at 4°C for up to 6 months. Avoid freeze thaw cycles, do not use aliquots that have been frozen more than once.

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NOTICE

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Bio-Techne Spatial now includes the legacy brands Lunaphore™ and Advanced Cell Diagnostics™.

Bio-Techne Diagnostics now includes Asuragen®, Bionostics™, Cliniqa™, RNA Medical®, and R&D Systems™ Clinical Controls.