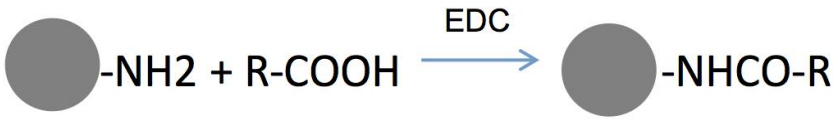
Coating of Amino Particles with Proteins or Ligands

Introduction

There are several methods of attaching biological ligands to polystyrene particles. These methods include adsorption to plain polystyrene particles, covalent attachment to surface functionalized particles, and attachment of the ligand of interest to particles that are pre-coated with a binding protein such as Streptavidin, Protein A or Protein G.

Presented in this Technical Note are protocols such as adsorption and covalent coupling used to attach ligands to polystyrene particles.



Covalent Coupling (one step EDC coupling)

Material

0.05M MES buffer, pH 5.0

Ligands or proteins

Amino Polystyrene particles

EDC from Sigma Chemical Cat. No. E7750

Procedure

1. Add appropriate amounts of the reagents to the glass centrifuge tube.

2. Vortex and incubate for two hours at ambient temperature on a rotary mixer or with occasional vortexing or shaking.

3. Centrifuge.

4. Remove the supernatant carefully.

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5. Resuspend the pellet in Isotonic Buffered Saline.

6. Repeat Steps 3 and 4 and resuspend the pellet in 2 mL of IBS to obtain suspension.

General Procedures For Particle Coating (Passive adsorption)

Material

Phosphate buffer, 0.1 M, pH 7.4

Protein solution

Polystyrene particles

Procedure

1. Add appropriate amounts of the reagents to the glass centrifuge tube.

2. Vortex and incubate for at least one hour at ambient temperature.

3. Centrifuge .

4. Remove the supernatant carefully.

5. Add Isotonic Buffered Saline (IBS).

6. Mix well using a vortex mixer.

7. Centrifuge.

8. Remove the supernatant carefully.

9. Add IBS and mix well to obtainsuspension.

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