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Poly-D-lysine hydrobromide, MW 4,000 - 15,000

Cat:GX07281-10mg

Cas: 27964-99-4

Physical Description: White to off-white powder

Description: Poly-lysine is a polycation which binds to DNA, red cell membrane and any negatively charged protein. It is typically used as a coating substrate for culture dishes, slides, etc.1,5 It enhances electrostatic interaction between negatively charged ions of the cell membrane and the culture surface. When adsorbed to the culture surface, poly-lysine increases the number of positively charged sites available for cell binding. Both the D- and L- form of the poly-lysine can be used as a coating substrate since poly-lysine is a nonspecific attachment factor for cells; however, certain cells can digest poly-lysine. In this case, poly-D-lysine should be used as the attachment factor so that the cells are not disrupted by excessive uptake of L-lysine. The lower molecular weight poly-lysine (30,000-70,000) is easier to use because it is less viscous in solution; however, the higher molecular weights of poly-lysine have more attachement sites per molecule available to the cells. A compromise between the easier to use lower molecular weight products and the extremely viscous higher molecular weights would be the products in the range of 70,000-150,000.

Source: Synthetic Purity: Ad min. 95%

Solubility: Solutions can be stored at 2-8°C for a few days or aliquoted and stored at -20°C for at least 2 months.

A typical protocol for coating of culture dishes/slides follows.

Sample Protocol Note: This is only an example. Each lab must determine optical coating dilution for their particular cell line.

To Prepare Stock Solution: Dissolve 10 mg poly-L-lysine in 1 ml sterile, deionized water. This creates a 1% solution. Best to use a product with a molecular weight not less than 30,000. Optimal molecular weight should be determined by each individual lab.

To Coat Substrates: Caution - only prepare the amount of 1X coating solution from the stock solution intended for use at one time. Coated substrates may be stored refrigerated for up to one year.

1. Dilute the stock solution to the desired concentration with phosphate buffered saline (PBS) to obtain your final coating solution. For most substrates used in cell culture:

a. Start by diluting the 10 mg/ml stock solution at 1:2 with PBS to yield a coating solution concentration of 5 mg/ml (0.5%). Serially dilute the coating solution concentration with PBS to determine the optimal coating solution concentration for your particular cell culture system. Typically, the effective coating solution concentration for culture dishes will be 0.3 to 0.5% and for histology slides at 0.1%.

b. If you are currently using fibronectin or other attachment factors, start by using the same coating solution concentration as you currently use. Again, serially dilute the coating solution concentration with PBS to determine the optimal coating solution concentration.

2. Coat substrates with enough final coating solution to completely cover the surface, typically 1 ml/25 cm2. Rock gently to ensure even coating of the surface. Leave for 5 minutes at room temperature.

3. Remove the coating solution and immediately rinse substrate twice with PBS or serum-free growth medium.

4. Seed cells onto the coated substrate or allow it to dry for use at a later time. Note: If serum is used in your medium, reducing the amount used during seeding may speed the attachment of cells to the substrate.

To Remove Cells from Coated Substrate: Cells can be dislodged from coated substrates using standard trypsinization procedures (0.05% trypsin, 0.02% EDTA).