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ProductInformation

Transferrin-poly lysine-FITC conjugate

Product Number **T 0288**
Storage Temperature -0 °C

Product Description

Extinction coefficient for poly-L-lysine-FITC: $E^{1\%}$ = 0.47 (495 nm in 0.02 M Tris buffer, pH 7.4).
Note: This information together with the concentration of poly-L-lysine-FITC determined by the biuret assay is used to determine the ratio of the moles of poly-L-lysine per mole of transferrin.

Poly-L-lysine, with a molecular weight of 30 to 70 kDa is combined with FITC so that there is an average of one FITC per poly-L-lysine. The fluorescein isothiocyanate is linked to the amino group of the poly-L-lysine by a relatively stable, thiocarbamide linkage. Information on this linkage to a protein amino group has been published.[1] The poly-L-lysine is then linked to a carbohydrate moiety of transferrin.

This product was prepared by a published method[2,3,4,5] as a potential vector for transport of polyanions such as DNA into eukaroytic cells. This involved coupling FITC-poly-L-lysine with approximately 300 lysine residues and approximately 1 mole FITC/mole of polymer, through the periodate treated carbohydrate of human apotransferrin by reductive amination. The coupling parameters were optimized and the conjugate was fractionated by ion exchange chromatography to obtain a conjugate with approximately 1 transferrin molecule for every 100 residues in the poly-L-lysine. The ion exchange chromatographic step used a gradient to remove free poly-L- lysine and unconjugated transferrin. The conjugated transferrin was then saturated with iron.

This product demonstrates the potential to complex DNA and interact via transferrin using the model system employing insolubilized anti-transferrin, biotinylated λ phage DNA, and streptavidin-alkaline phosphatase. The product allows monitoring of cellular transport.[3] However, this product may not yield good DNA transfection results when used on T cells and B cells.

Precautions and Disclaimer

For Laboratory Use Only. Not for drug, household or other uses.

Preparation Instructions

This product should not be used with phosphate or citrate buffers. The poly-L-lysine produces a precipitate with these buffers. The recommended buffer is HEPES. A clear, colorless solution will be observed at 5 mg/ml in water.

Storage/Stability

A solution of this product should be stable if protected from light and stored frozen in working aliquots. The solution should be stable for a few days at 0 - 4 ºC when stored in the dark.

References

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2. Wagner, E. et al., Bioconjugate Chem., **2**, 226 (1991).
3. Wagner, E., et al., Transferrin-polycation conjugates as carriers for DNA uptake into cells. Proc. Natl. Acad. Sci. USA, **87(9)**, 3410-3414 (1990).
4. Zenke, M., et al., Receptor-mediated endocytosis of transferrin-polycation conjugates: an efficient way to introduce DNA into hematopoietic cells. Proc. Natl. Acad. Sci. USA, **87(10)**, 3655-3659 (1990).
5. Cotton, M., et al., Transferrin-polycation-mediated introduction of DNA into human leukemic cells: stimulation by agents that affect the survival of transfected DNA or modulate transferrin receptor levels. Proc. Natl. Acad. Sci. USA, **87(11)**, 4033-4037 (1990).

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