

Product Data Sheet

Product Name: FITC-Dextran (MW 10000)

Cat. No.: GC36048

Chemical Properties

Cas. No. 60842-46-8

SMILES [FITC-Dextran]

Formula M.Wt 10000.00(Average)

Solubility Water: 50 mg/mL Storage 4°C, sealed storage, away from moisture and light

General tips For obtaining a higher solubility, please warm the tube at 37 °C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.

Shipping Condition Evaluation sample solution: ship with blue ice. All other available size: ship with RT, or blue ice upon request.

Structure

FITC-Dextran

Protocol

Evaluation of Apoptosis in Cells using FITC-Dextran

This protocol only provides a guideline and should be modified according to your specific needs

1. Stock and dilute solution preparation for staining of cells

(1) Prepare FITC-Dextran stock solution (1mM) by dissolving FITC-Dextran powder in DMSO.

Caution: Product has not been fully validated for medical applications. For research use only.

Tel: (909) 407-4943 Fax: (626) 353-8530 E-mail: tech@glpbio.com

Address: 10292 Central Ave. #205, Montclair, CA, USA

Product Data Sheet

(2) Dilute the FITC-Dextran stock solution with PBS to a final 2 μ M concentration. NOTE: The working solution must be prepared fresh on the day of the experiment.

2. Cell Preparation

Seed cultured cells in a 6-well plate or a 60-mm culture dish, depending on the scale of the experiment. If the cells tend to detach easily, precoat the plate or dish with poly-L/d-lysine to enhance cell adhesion.

3. Labeling of cells and analysis

(1) To induce apoptosis, cells were heated to 43.5°C for 1 hour and then incubated at 37°C for 8h.

(2) Wash the cells twice with PBS.

(3) Add FITC-Dextran in PBS at a final concentration of 2 μ M, and incubate at 4°C for 30 minutes in the dark with gentle agitation.

(4) Collect cells into a 1.5ml tube and centrifuge at 500g for 10 minutes and discard the supernatant.

(5) Resuspend cells in culture medium and analyze using flow cytometry or fluorescence microscopy.

4. Experimental Precautions

(1) Dissolve the FITC-Dextran in PBS immediately before use, and ensure that the FITC-Dextran solution is adequately protected from light.

(2) This protocol and all reagents are for scientific research use only.

References:

[1] Moumaris M, Rajoely B, Abuaf N. Fluorescein isothiocyanate-dextran can track apoptosis and necrosis induced by heat shock of peripheral blood mononuclear cells and HeLa cells[J]. Open Biological Sciences Journal, 2015, 1(1): 7-15.

Background

FITC-Dextran (MW 10000) is a fluorescent probe ($E_x=495\text{nm}$; $E_m=525\text{nm}$) that serves as a measure of blood-brain barrier permeability^[1]. Perfusion of FITC-Dextran through the transpiration stream into

Caution: Product has not been fully validated for medical applications. For research use only.

Tel: (909) 407-4943 Fax: (626) 353-8530 E-mail: tech@glpbio.com

Address: 10292 Central Ave. #205, Montclair, CA, USA

Product Data Sheet

isolated sunflower leaves allows the measurement of intercellular pH values and pH gradients between different cell types within the sunflower leaves^[2]. FITC-Dextran has been widely used as a model hydrophilic compound to study the effects of process parameters on the morphology of microspheres and the release of FITC-Dextran from Poly(lactic-co-glycolic acid) microspheres^[3]. FITC-Dextran can be used as a marker to reveal the cellular damage induced by heat shock and to study the early as well as the late stages of apoptosis^[4]. FITC-Dextran has been widely used as a tracer in studies of microcirculation and permeability, allowing for the tracking of specific microcirculatory regions within the body^[5].

References:

- [1] Natarajan R, Northrop N, Yamamoto B. Fluorescein isothiocyanate (FITC)-dextran extravasation as a measure of blood-brain barrier permeability[J]. Current protocols in neuroscience, 2017, 79(1): 9.58. 1-9.58. 15.
- [2] Hoffmann B, Kosegarten H. FITC-dextran for measuring apoplast pH and apoplastic pH gradients between various cell types in sunflower leaves[J]. Physiologia Plantarum, 1995, 95(3): 327-335.
- [3] Mao S, Xu J, Cai C, et al. Effect of WOW process parameters on morphology and burst release of FITC-dextran loaded PLGA microspheres[J]. International journal of pharmaceutics, 2007, 334(1-2): 137-148.
- [4] Moumaris M, Rajoely B, Abuaf N. Fluorescein isothiocyanate-dextran can track apoptosis and necrosis induced by heat shock of peripheral blood mononuclear cells and HeLa cells[J]. Open Biological Sciences Journal, 2015, 1(1): 7-15.
- [5] Thorball N. FITC-dextran tracers in microcirculatory and permeability studies using combined fluorescence stereo microscopy, fluorescence light microscopy and electron microscopy[J]. Histochemistry, 1981, 71(2): 209-233.

Caution: Product has not been fully validated for medical applications. For research use only.

Tel: (909) 407-4943 Fax: (626) 353-8530 E-mail: tech@glpbio.com

Address: 10292 Central Ave. #205, Montclair, CA, USA