

FITC-Dextran (MW 40000)

Chemical Properties

CAS No. :

Formula:

Molecular Weight:

Storage:
 Keep away from direct sunlight
 Store at -20°C
Actual storage temperature shall be subject to the COA.

Biological Description

Description	FITC-Dextran (MW 40000) is a kind of dextran fluorescent probe labeled with fluorescein isothiocyanate (FITC) (Ex=495 nm; Em=525 nm). FITC-Dextran (MW 400000) can be used as a tracer marker to reveal heat shock-induced cell injury and detect the early and late stages of apoptosis. In addition, this probe can be used in the study of cell permeability, including the permeability of the blood-brain barrier and the quantitative analysis of its damage degree.
Targets(IC50)	Others
In vitro	<p>Cell Labeling [1] This method is applicable to apoptotic HeLa cells and human peripheral blood mononuclear cells (PBMCs), while viable HeLa cells and PBMCs are not stained by FITC-Dextran.</p> <ol style="list-style-type: none"> 1. Apoptosis was induced by incubation at 43.5 °C for 1 h and at 37 °C for 8 h. 2. Cells were resuspended in 100 µL of culture medium and mixed with 10 µL of propidium iodide (PI) and 10 µL of FITC-Dextran (MW 40000) in Q-prep tubes, resulting in final concentrations of 7.5 µM for PI and 1.13 µM for FITC-Dextran, respectively. 3. Cells were incubated at room temperature in the dark for 25 min. 4. 3 mL of the labeled cell culture medium was collected and centrifuged at 500 g for 10 min. 5. The centrifuged cells were harvested, resuspended in 1 mL of culture medium, and analyzed by flow cytometry or fluorescence microscopy (PI: Ex=500 nm, Em=600 nm; FITC-Dextran (MW 40000): Ex=495 nm, Em=525 nm). <p>Paracellular Permeability Assay [4] 1. FITC-Dextran was added to the basal medium of Transwell chambers at a final concentration of 0.1 mg/mL. 2. Culture medium was collected from the Transwell inserts after incubation for 15 min. 3. Fluorescence signals were measured (Ex=485 nm, Em=538 nm). 4. The concentration of FITC-Dextran was calculated based on fluorescence intensity. 5. Permeability was calculated from the concentration results.</p>
In vivo	<p>Intestinal Barrier Function Assay [5] 1. Mice were subjected to 4 hours of starvation treatment. 2. FITC-Dextran (MW 40000) was used for intragastric gavage in mice at a dose of 0.6 mg/g.</p>

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In vivo	3. Within 4 hours after gavage, the fluorescence intensity was detected and recorded (emission wavelength Em 520 nm).
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Solubility Information

Solubility	H2O: 40 mg/mL, Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
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Reference

- Moumaris M, et al. 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).
- Natarajan R, et al. Fluorescein Isothiocyanate (FITC)-Dextran Extravasation as a Measure of Blood-Brain Barrier Permeability. Curr Protoc Neurosci. 2017 Apr 10;79:9.58.1-9.58.15.
- Eriksson I, et al. Analysis of Lysosomal pH by Flow Cytometry Using FITC-Dextran Loaded Cells. Methods Mol Biol. 2017;1594:179-189.
- Okabayashi K, et al. Cdc42 activates paracellular transport in polarised submandibular gland cells. Arch Oral Biol. 2021 Dec;132:105276.
- Yu W, et al. ACE2 contributes to the maintenance of mouse epithelial barrier function. Biochem Biophys Res Commun. 2020 Dec 17;533(4):1276-1282.

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