

## FITC-Dextran (MW 10000)

Cat. No.:	HY-128868
CAS No.:	60842-46-8
Target:	Fluorescent Dye
Pathway:	Others
Storage:	4°C, protect from light * In solvent : -80°C, 6 months; -20°C, 1 month (protect from light)

## FITC-Dextran (MW 10000)

### SOLVENT & SOLUBILITY

In Vitro	H <sub>2</sub> O : 50 mg/mL (Need ultrasonic)
In Vivo	1. Add each solvent one by one: PBS Solubility: 100 mg/mL (Infinity mM); Clear solution; Need ultrasonic

### BIOLOGICAL ACTIVITY

Description	FITC-Dextran (MW 10000) is a fluorescent probe for fluorescein isothiocyanate (FITC) dextran (Ex=495 nm; Em=525 nm). FITC-Dextran (MW 10000) can be used as a marker to reveal heat shock-induced cell damage and to study the early and late stages of apoptosis. FITC-Dextran (MW 10000) can also be used for cell permeability studies, such as blood-brain barrier permeability and determination of the extent of blood-brain barrier disruption <sup>[1][2][3]</sup> .
In Vitro	<p>Guidelines (Following is our recommended protocol. This protocol only provides a guideline, and should be modified according to your specific needs).</p> <p>Labeling of cells<sup>[1]</sup>: For use with apoptotic HeLa cells and human peripheral blood mononuclear cells (PBMC) (viable HeLa and PBMC can not be stained by FITC-Dextran).</p> <ol style="list-style-type: none"> <li>1. Incubate cells at 43.5°C for 1 hour and at 37°C for 8 hours to induce apoptosis.</li> <li>2. Suspend the cells in 100 µL of medium, and mix in Q-prep tubes with 10 µL of propidium iodide (PI), 10 µL of FITC-Dextran (MW 10000) (the final concentration of PI and FITC-Dextran (MW 10000) is 7.5 µM and 1.13 µM, respectively).</li> <li>3. Incubate cells for 25 min at room temperature in the dark.</li> <li>4. Take the labeled cells with 3 mL of medium and centrifuge for 10 min at 500 g.</li> <li>5. Take centrifuged cells with 1 mL of medium and use flow cytometry or fluorescence microscopy analyze (PI: Ex=500 nm, Em=600 nm; FITC-Dextran (MW 10000): Ex=495 nm, Em=525 nm).</li> </ol> <p>Paracellular permeability measurement<sup>[4]</sup></p> <ol style="list-style-type: none"> <li>1. Add FITC-dextran (0.1 mg/mL) to the basal media in the transwell chamber.</li> <li>2. Collect media from the transwell insert after 15 min.</li> <li>3. Measure the fluorescence signal (Ex=485 nm, Em=538 nm).</li> </ol>

4. Calculate FITC-dextran concentration based on fluorescence intensity.
  5. Calculate permeability.
- MCE has not independently confirmed the accuracy of these methods. They are for reference only.

#### In Vivo

Guidelines (Following is our recommended protocol. This protocol only provides a guideline, and should be modified according to your specific needs).

For intestinal barrier function assay<sup>[5]</sup>

1. Fast mice for 4 h.
2. Orally gavage mice with FITC-Dextran MW 10000 (0.6 mg/g).
3. Measure fluorescence intensity of plasma in 4 h (excitation nm/emission 520 nm).

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

## CUSTOMER VALIDATION

- Nat Metab. 2022 Sep;4(9):1138-1149.
- Brain Behav Immun. 2023 Feb 27;S0889-1591(23)00050-8.
- Adv Sci (Weinh). 2021 Aug 16;e2101912.
- Biomaterials. 1 June 2022, 121608.
- Sci Adv. 2023 Oct 20;9(42):eadi0699.

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## REFERENCES

- [1]. 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).
- [2]. 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.
- [3]. Eriksson I, et al. Analysis of Lysosomal pH by Flow Cytometry Using FITC-Dextran Loaded Cells. Methods Mol Biol. 2017;1594:179-189.
- [4]. Okabayashi K, et al. Cdc42 activates paracellular transport in polarised submandibular gland cells. Arch Oral Biol. 2021 Dec;132:105276.
- [5]. 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.

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

Tel: 609-228-6898

Fax: 609-228-5909

E-mail: [tech@MedChemExpress.com](mailto:tech@MedChemExpress.com)

Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA