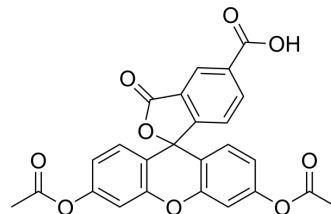


5-CFDA

Cat. No.:	HY-D0047
CAS No.:	79955-27-4
Molecular Formula:	C ₂₅ H ₁₆ O ₉
Molecular Weight:	460.39
Target:	Fluorescent Dye
Pathway:	Others
Storage:	-20°C, protect from light * In solvent : -80°C, 6 months; -20°C, 1 month (protect from light)



SOLVENT & SOLUBILITY

In Vitro

DMSO : ≥ 100 mg/mL (217.21 mM)
* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions	Solvent Concentration	Mass		
		1 mg	5 mg	10 mg
	1 mM	2.1721 mL	10.8604 mL	21.7207 mL
	5 mM	0.4344 mL	2.1721 mL	4.3441 mL
	10 mM	0.2172 mL	1.0860 mL	2.1721 mL

Please refer to the solubility information to select the appropriate solvent.

In Vivo

- Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
Solubility: ≥ 2.5 mg/mL (5.43 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
Solubility: ≥ 2.5 mg/mL (5.43 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% corn oil
Solubility: ≥ 2.5 mg/mL (5.43 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

5-CFDA is a common aliphatic luciferin-line organism. CFDA conducts free diffusion into cells, and then it is hydrolyzed into carboxyl fluorescein (CF) by intracellular non-specific lipase. CF containing portion contains an additional negative charge so that it is better retained in cells, compared to fluorescein dyes^{[1][2][3]}.

In Vitro

Preparation of 5-CFDA working solution
1. Preparation of the stock solution
Dissolve 1mg 5-CFDA in 0.2172 mL DMSO to obtain 10 mM of 5-CFDA.
Note: It is recommended to store the stock solution at -20°C -80°C away from light and avoid repetitive freeze-thaw cycles.

2. Preparation of 5-CFDA working solution

Dilute the stock solution in serum-free cell culture medium or PBS to obtain 1-10 μM of 5-CFDA working solution.

Note: Please adjust the concentration of 5-CFDA working solution according to the actual situation.

Cell staining

1. Cell preparation:

For suspension cells: Centrifuge at 1000 g at 4°C for 3-5 minutes and then discard the supernatant. Wash twice with PBS, 5 minutes each time.

For adherent cells: Discard the cell culture medium, and add trypsin to dissociate cells to make a single-cell suspension. Centrifuge at 1000 g at 4°C for 3-5 minutes and then discard the supernatant. Wash twice with PBS, 5 minutes each time.

2. Add 1 mL of 5-CFDA working solution, and then incubate at room temperature for 30 minutes.

3. Centrifuge at 400 g at 4°C for 3-4 minutes and then discard the supernatant.

4. Wash twice with PBS, 5 minutes each time.

5. Resuspend cells with serum-free cell culture medium or PBS, and then detect by fluorescence microscope or flow cytometer.

Precautions

1. It is recommended to store the stock solution at -20°C or -80°C away from light and avoid repetitive freeze-thaw cycles.

2. Please adjust the concentration of 5-CFDA working solution according to the actual situation.

3. This product is for R&D use only, not for drug, household, or other uses.

4. For your safety and health, please wear a lab coat and disposable gloves to operate.

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

CUSTOMER VALIDATION

- Microbiol Spectr. 2022 Aug 31;10(4):e0061022.
- Toxicol In Vitro. 2020 Dec;69:104971.

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REFERENCES

- [1]. Yang T, et al. A novel nonradioactive CFDA assay to monitor the cellular immune response in myeloid leukemia. Immunobiology. 2013 Apr;218(4):548-53.
- [2]. Card SD, et al. Assessment of fluorescein-based fluorescent dyes for tracing Neotryphodium endophytes in planta. Mycologia. 2013 Jan-Feb;105(1):221-9.
- [3]. Fang X, et al. Bone marrow-derived endothelial progenitor cells are involved in aneurysm repair in rabbits. J Clin Neurosci. 2012 Sep;19(9):1283-6.

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

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