

Product Datasheet

C12FDG

Catalog No. **BP-01881** · CAS **138777-25-0** · Form **free base** · Physical state **solid** · Color **White to yellow** · Version **1.0** ·
Revision **2026-09-07**

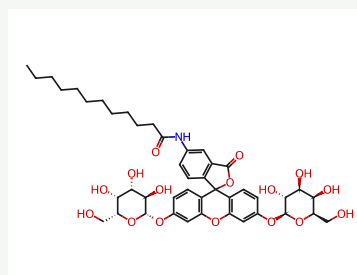
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Target Fluorescent Dye	Research area Others
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Molecular formula **C₄₄H₅₅NO₁₆**

Molecular weight **853.9046**

STRUCTURE



DESCRIPTION

C12FDG (5-Dodecanoylamino fluorescein di-β-D-Galactopyranoside) is a lipophilic green fluorescent substrate for β-galactosidase detection. C12-FDG is more sensitive than Fluorescein di(β-D-galactopyranoside) for beta-galactosidase activity determinations in animal cells (Ex/Em = 488/523 nm) .

BIOLOGICAL ACTIVITY

In Vitro

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

1. Solution preparation

1.1 Prepare storage solution

Solvent: DMSO

Concentration: 33 mM is recommended (e.g., weigh 1 mg C12FDG and dissolve it in 35.5 μL solvent).

Storage: After aliquoting, store at -20°C or -80°C in the dark and avoid repeated freezing and thawing.

1.2 Preparation of working solution

Dilute to 33 μM (optimized according to the experiment) with PBS (or other buffer).

Note: The working solution should be prepared and used immediately, and protected from light.

2. Fluorescent senescence-associated β-galactosidase (SA-β-Gal) assay:

2.1 Culture cells in 6-, 12-, 24-, or 96-well plates at a density of 5 × 10⁵ cells/mL overnight. Incubate the cells according to your normal protocol.

2.2 Wash cells by 200 μL of PBS once and fix with 100 μL of fixation solution (2% formaldehyde/0.2% glutaraldehyde in distilled water) at room temperature for 5 min.

2.3 Wash cells by 200 μL of PBS two times, and stain with 100 μL of 33 μM C12FDG (in PBS, pH=6.0) for 10 min, and with 200 μL of Hoechst solution (1 μg/mL Hoechst 33342 (HY-15559) in PBS, pH 6.0) for 10 min.

2.4 Image these cells by a 360-nm (Hoechst 33342) and 480-nm (C12FDG) excitation filters, and monitor through

460-nm and 535-nm emission filters, respectively.

SOLUBILITY

soluble in DMSO

REFERENCES

- [1]. Plovins A, et al. Use of fluorescein-di-beta-D-galactopyranoside (FDG) and C12-FDG as substrates for beta-galactosidase detection by flow cytometry in animal, bacterial, and yeast cells. Appl Environ Microbiol. 1994 Dec;60(12):4638-41.
- [2]. Udonon M, et al. Quantitative analysis of cellular senescence phenotypes using an imaging cytometer. Methods. 2012 Mar;56(3):383-8.

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Lot CoA and SDS are separate documents.