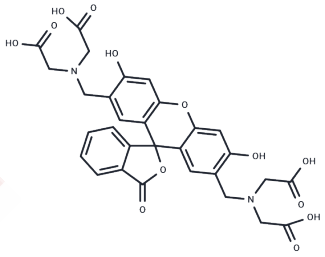
Data Sheet (Cat.No.T14855)

TargetMol

Calcein

Chemical Properties



CAS No. : 1461-15-0

Formula: C30H26N2O13

Molecular Weight: 622.53

Appearance: no data available

Storage: keep away from direct sunlight
Powder: -20°C for 3 years | In solvent: -80°C for 1 year

Biological Description

Description	Calcein (Fluorexon) is a fluorescent dye and self-quenching probe used as an indicator of lipid vesicle leakage, a complexometric indicator for titration of calcium ions with EDTA, and for the fluorometric determination of calcium.
Targets(IC50)	Others
Cell Research	Instructions I. Dissolution and preparation 1. Preparation of mother solution: Calcein is dissolved in anhydrous DMSO, ethanol or PBS. The dissolved concentration can be adjusted according to the requirements of the experiment, usually in the range of 1-10 mM. 2. Preparation of working solution: When used for cell staining, the dissolved Calcein is added to the cultured cells, usually at a concentration of 1-5 μM (the specific concentration needs to be optimized according to the experiment). II. Cell staining 1. After adding Calcein, the cells usually need to be incubated at 37°C for 30 minutes to 1 hour. 2. After labeling, it can be analyzed using a fluorescence microscope or flow cytometer. 3. Calcein dye enters the cell through the permeability of the cell membrane. In the presence of calcium ions, it binds to calcium ions and emits green fluorescence. III. Lipid vesicle leakage detection Calcein can be used to evaluate the integrity of the cell membrane in lipid vesicle leakage experiments. When the lipid vesicle membrane is damaged, Calcein leaks out of the vesicle, resulting in changes in the fluorescence signal. Therefore, it can be used as an indicator for detecting membrane leakage and membrane stability. IV. Calcium ion titration and determination: 1. Calcein can also be used as an indicator for EDTA calcium ion titration and fluorescence determination of calcium ions. Calcein binds to calcium ions to form a fluorescent complex, so by measuring the fluorescence intensity, the concentration of calcium ions in the solution can be inferred. 2. In the calcium ion determination experiment, the fluorescence intensity of Calcein is linearly related to the concentration of calcium ions, and can usually be detected under the condition of absorption/emission spectra of 490/515 nm. V. Removal of background signal When performing fluorescence imaging or flow cytometric analysis, appropriate

washing steps can be used to remove unbound Calcein dye on the cell surface or in the culture medium to reduce background fluorescence. Notes: 1. Calcein solution should be stored at -20°C and protected from light. 2. Avoid repeated freezing and thawing to maintain its fluorescence stability.

Solubility Information

Solubility	DMSO: 100 mg/mL (160.63 mM),Sonication is recommended. H2O: 5 mg/mL (8.03 mM),when pH is adjusted to 12 with NaOH. Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	1.6063 mL	8.0317 mL	16.0635 mL
5 mM	0.3213 mL	1.6063 mL	3.2127 mL
10 mM	0.1606 mL	0.8032 mL	1.6063 mL
50 mM	0.0321 mL	0.1606 mL	0.3213 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Reference

Wang C, et al. The role of SFRP1 in human dermal papilla cell growth and its potential molecular mechanisms as a target in regenerative therapy. Regen Ther. 2024 Dec 16;28:161-168.

Zheng Z, Xu J, Dai Y, et al.Circulating miR-107 as a diagnostic biomarker of osteoporotic vertebral compression fracture increases bone formation in vitro and in vivo.Life Sciences.2023: 121693.

Andleeb A,et al. Prunella vulgaris and Tussilago farfara demonstrate anti-inflammatory activity in rabbits and protect human adipose stem cells against thermal stress in vitro. J Ethnopharmacol. 2025 Jan 30;337(Pt 3):118985.

Oleynikov IP, et al. Cholesterol Attenuates the Pore-Forming Capacity of CARC-Containing Amphipathic Peptides. Int J Mol Sci. 2025 Jan 10;26(2):533.

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