Calcein

Cat. No.: HY-D0040

CAS No.: 1461-15-0

Molecular Formula: $C_{30}H_{26}N_2O_{13}$

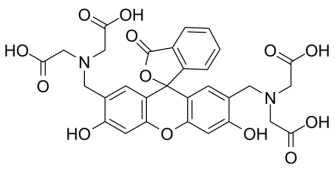
Molecular Weight: 622.53

Target: Fluorescent Dye

Pathway: Others

Storage: 4°C, protect from light

* In solvent : -80°C, 6 months; -20°C, 1 month (protect from light)



SOLVENT & SOLUBILITY

In Vitro

1M NaOH : 50 mg/mL (80.32 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	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

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

In Vivo

1. Add each solvent one by one: 2% NaHCO3 in ddH2O
   Solubility: 20 mg/mL (32.13 mM); Clear solution; Need ultrasonic and adjust pH to 6 with NaHCO3

BIOLOGICAL ACTIVITY

Description

Calcein is a fluorescent dye and self-quenching probe, used as an indicator of lipid vesicle leakage, and also as a complexometric indicator for titration of calcium ions with EDTA, and for fluorometric determination of calcium.

In Vitro

Calcein accumulates intracellularly in coelomocytes incubated in coelomic fluid or ISO-EDTA. Coelomocytes incubated in CF show an increase in the calcein fluorescence intensity compared to the control.

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

PROTOCOL

Cell Assay [1]

Coelomocytes suspensions (ISO and CF) are separately incubated with calcein-AM (excitation and emission wavelength: 496 nm and 516 nm, respectively) at a final concentration of 200 nM, during 30 min, at 26°C. Calcein-AM is a nonfluorescent ABC transporter substrate whose intracellular accumulation is inversely proportional to ABC transporter activity. Intracellular

esterases convert calcein-AM into the fluorescent dye calcein, which is not an ABC transporter substrate, thereby accumulating the dye inside the cell. Therefore, a high fluorescence signal indicates low ABC transporter activity whereas a low fluorescence signal indicates high activity. The fluorescence of samples is measured by flow cytometer. The experiment is repeated six times in duplicates.

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CUSTOMER VALIDATION

- Adv Mater. 2023 Jun;35(23):e2300548.
- Antioxidants (Basel). 2021 May 18;10(5):798.
- Drug Des Devel Ther. 2022, 16: 3929-3946.
- Int J Adv Manuf Technol. 17 January 2022.

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REFERENCES

[1]. Marques-Santos LF, et al. ABCB1 and ABCC1-like transporters in immune system cells from sea urchins Echinometra lucunter and Echinus esculentus and oysters Crassostrea gasar and Crassostrea gigas. Fish Shellfish Immunol. 2017 Sep 5;70:195-203.

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