Data Sheet (Cat.No.T20684)

TargetMol

2',7'-Dichlorofluorescein diacetate

Chemical Properties

CAS No. : 2044-85-1

Formula: C24H14Cl2O7

Molecular Weight: 485.27

Storage: Keep away from direct sunlight
Powder: -20°C for 3 years | In solvent: -80°C for 1 year
Actual storage temperature shall be subject to the COA.

Biological Description

Description	2',7'-Dichlorofluorescein diacetate (Diacetyldichlorofluorescein), a cell-permeable fluorogenic probe, is useful for the detection of nitric oxide (NO) and reactive oxygen species (ROS) and for the determination of the degree of overall oxidative stress.
Targets(IC50)	Others,Reactive Oxygen Species,ROS
In vitro	I. Detection of Reactive Oxygen Species (ROS) 1. Material preparation 1) DCFH-DA probe solution: Prepare DCFH-DA stock solution (1-10 mM), dissolve it in anhydrous DMSO, and store it away from light. 2) Cell sample: Living cells or tissue samples to be tested. 3) PBS buffer: Used to wash cells, pH 7.4. 2. Experimental steps 1) Cell treatment: Collect the cells to be tested, wash them with PBS 2-3 times to remove interferences in the culture medium. 2) Staining: Dilute DCFH-DA to 0.1-20 μM, add it to the cell culture medium, incubate at 37°C for 30 minutes, and protect from light. 3) Washing: After incubation, wash the cells with PBS buffer to remove DCFH-DA that has not entered the cells. 4) Detect fluorescence: Use a fluorescence microscope or flow cytometer to detect the fluorescence signal. Excitation wavelength: 488 nm Emission wavelength: 525 nm II. Detection of Nitric Oxide (NO) DCFH-DA detects the presence of NO through an indirect mechanism, depending on the secondary products generated by NO (such as peroxynitrite). The experimental steps are similar to ROS detection and are suitable for indirect assessment of changes in NO content. III. Assessment of total oxidative stress 1) Compare the fluorescence signal with the standard curve to quantitatively determine the level of ROS or NO. 2) Use blank groups (cells not treated with DCFH-DA) and positive controls (such as H2O2 or NO donor treatment groups) to verify the reliability of the experimental results. The above information is based on published literature. Experimental procedures

In vitro	should be appropriately modified to meet specific research demands.

Solubility Information

Solubility	DMSO: 30.625 mg/mL (63.11 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	2.0607 mL	10.3035 mL	20.6071 mL
5 mM	0.4121 mL	2.0607 mL	4.1214 mL
10 mM	0.2061 mL	1.0304 mL	2.0607 mL
50 mM	0.0412 mL	0.2061 mL	0.4121 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.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

Reference

Hu D,et al. Macrophage Membrane-Cloaked ROS-Responsive Albumin Nanoplatforms for Targeted Delivery of Curcumin to Alleviate Acute Liver Injury. Mol Pharm. 2025 Jan 9.
Fuenzalida B,et al.Evidence for hypoxia-induced dysregulated cholesterol homeostasis in preeclampsia: Insights into the mechanisms from human placental cells and tissues. FASEB J. 2024 Feb;38(2):e23431.
Zhang Y,et al. FoxO1 silencing in Atp7b-/- neural stem cells attenuates high copper-induced apoptosis via regulation of autophagy. J Neurochem. 2024 Sep;168(9):2762-2774.
Nanda SS, An SS, Yi DK. Measurement of creatinine in human plasma using a functional porous polymer structure sensing motif. Int J Nanomedicine. 2015 Aug 25;10 Spec Iss:93-9. doi: 10.2147/IJN.S88378. eCollection 2015. PubMed PMID: 26347475; PubMed Central PMCID: PMC4554416.