Data Sheet (Cat.No.T86420)

TargetMol

FG 488 DHPE

Chemical Properties

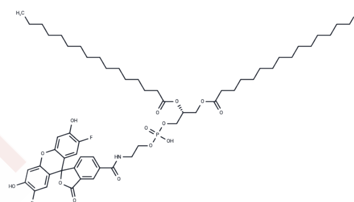
CAS No. : 438476-80-3

Formula: C58H82F2NO14P

Molecular Weight: 1086.24

Storage: 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	FG 488 DHPE, a lipid-coupled fluorochrome, is used as the fluorophore Oregon Green 488. It monitors the acidification of lipid vesicles with λex/λem=508/534 nm and is also utilized for quantifying Hv1-induced proton translocation with the same excitation/emission wavelengths [1] [2].
Targets(IC50)	Others
In vitro	FG 488 DHPE exhibits pH-dependent fluorescence emission characteristics [1]. Monitoring acidification in Bulk vesicle assays [1]: 1. Instrument: Jasco FP6500 spectrofluorometer, 37 °C; excitation at λex=508 nm and emission detection at λem=534 nm. 2. Add 100 μL proteoliposomes (cphospholipid ~60 μM) to 680 μL ATPase buffer with K+-ionophore valinomycin (5 nM) for charge equilibration. 3. Add ATP (1.2 mM) to induce proton pumping. 4. Add 1 mM NaN3 to halt ATP hydrolysis. 5. Add CCCP (carbonyl cyanide 3-chlorophenyl hydrazine, 0.4 μM) to deplete the proton gradient. Conversion into pH-values normalizes fluorescence intensities to those obtained directly after ATP addition. FG 488 DHPE quantifies pH changes induced by the voltage-dependent proton channel Hv1 [2]. Quantification of phospholipid concentrations [2]: 1. Add Perchloric acid (70%, 200 μL) to a sample of unilamellar vesicles containing OG488-DHPE (30 μL). 2. Heat at 220 °C for 60 min to generate inorganic phosphate. 3. Cool to room temperature and add 700 μL of NH4MoO4 (0.45% (w/v)), perchloric acid (12.6% (w/v)), and 700 μL acetic acid (1.7% (w/v)). 4. Obtain a calibration curve for NaH2PO4 concentrations. 5. Incubate samples at 80 °C for 10 min and measure absorption at 820 nm. 6. Calculate phospholipid concentrations using the calibration curve. Proton translocation assay [2]: 1. Instrument: Jasco FP6500 spectrofluorometer, 37 °C; excitation at λex=508 nm (3 nm band width) and emission detection at λem=534 nm (3 nm band width). 2. Dilute proteoliposomes (POPC/POPG/Chol/OG488-DHPE in 54.5:25:20:0.5 ratio) in buffer A within flux buffer, creating a 14-fold K+-gradient across the membrane. 3. Add valinomycin (13 nM) to induce protonation of OG488-DHPE and quench its fluorescence intensity for active Hv1 channels. 4. Add CCCP (6 nM) to permeabilize vesicles for protons. 5. Plot normalized fluorescence intensity Fnorm as a function of time. Use protein-free vesicles as a control for proton leakage. For experiments with the potential inhibitor 2GBI, dissolve the inhibitor (15 mM) in flux buffer and add (0.5-8.0 μL) to proteoliposomes before valinomycin addition to induce proton translocation. The above information is based on published literature. Experimental procedures

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	0.9206 mL	4.603 mL	9.2061 mL
5 mM	0.1841 mL	0.9206 mL	1.8412 mL
10 mM	0.0921 mL	0.4603 mL	0.9206 mL
50 mM	0.0184 mL	0.0921 mL	0.1841 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.

Inhibitor · Natural Compounds · Compound Libraries · Recombinant Proteins

This product is for Research Use Only· Not for Human or Veterinary or Therapeutic Use

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