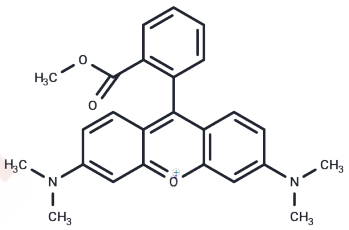
Data Sheet (Cat.No.T17109L)

TargetMol

TMRM

Chemical Properties



CAS No. : 115532-49-5

Formula: C25H25N2O3

Molecular Weight: 401.48

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	TMRM is a cell-permeant cationic lipophilic red fluorescent dye (λex: 530 nm, λem: 592 nm).
Targets(IC50)	Others
In vitro	The fluorescence signal in the presence of safranin or TMRM shows a slight decrease after the addition of glutamate, indicative of increased polarization of the mitochondrial inner membrane. In the presence of TMRM (2 μM) the coupled respiration with Complex I substrates or upon the addition of the Complex II substrate is decreased by 27% [1]. Exposure of hippocampal cultures to low concentrations of TMRM (50 to 500 nM) for 1 to 3 hours results in selective staining of mitochondria in both neurons and the underlying glial cells. Exposure of hippocampal cultures to high concentrations of TMRM (1 to 25 μM) stains mitochondria selectively and quickly, reaching a plateau after 5 to 10 min. Low concentrations of TMRM (50 to 200 nM) do not induce apoptosis, whereas higher concentrations (0.5 and 2.5 μM) enhance apoptosis (KD: ?500 nM) [2].

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	2.4908 mL	12.4539 mL	24.9078 mL
5 mM	0.4982 mL	2.4908 mL	4.9816 mL
10 mM	0.2491 mL	1.2454 mL	2.4908 mL
50 mM	0.0498 mL	0.2491 mL	0.4982 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

Chowdhury SR, et al. Simultaneous evaluation of substrate-dependent oxygen consumption rates and mitochondrial membrane potential by TMRM and safranin in cortical mitochondria. Biosci Rep. 2015 Dec 8;36(1): e00286.

Hu Z, Wang D, Gong J, et al.MSCs Deliver Hypoxia-Treated Mitochondria Reprogramming Acinar Metabolism to Alleviate Severe Acute Pancreatitis Injury.Advanced Science.2023: 2207691.

Monteith A, et al. Imaging of mitochondrial and non-mitochondrial responses in cultured rat hippocampal neurons exposed to micromolar concentrations of TMRM. PLoS One. 2013;8(3):e58059.