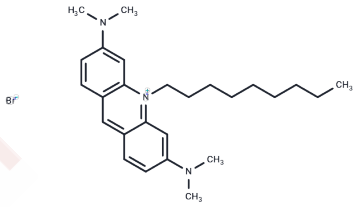
Data Sheet (Cat.No.T14117)

TargetMol

Acridine Orange 10-Nonyl Bromide

Chemical Properties



CAS No. : 75168-11-5

Formula: C26H38BrN3

Molecular Weight: 472.5

Storage: Keep away from moisture,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	Acridine Orange 10-Nonyl Bromide is a mitochondrial fluorescent probe that binds to cardiolipin in the inner mitochondrial membrane, dependent on the mitochondrial membrane potential, with an excitation wavelength of 490 nm and an emission wavelength of 510–525 nm.
Targets(IC50)	Mitochondrial Metabolism
In vitro	When Acridine Orange 10-Nonyl Bromide (AO-10NB, 45 μM) binds to cardiolipin, its fluorescence spectrum changes significantly: the excitation wavelength shifts from 496 nm to 450 nm, while the emission wavelength shifts from 525 nm to 640 nm. Studies have shown that when thin-walled vesicles containing cardiolipin (0–30 μM) are gradually added to the AO-10NB solution, the red fluorescence emission intensity at 640 nm changes regularly with the increase in the content of phospholipids or other acidic phospholipids in the liposome center. This change in fluorescence characteristics can be used as a sensitive probe to detect the distribution of phospholipids in the membrane center. [2]
In vivo	Acridine Orange 10-Nonyl Bromide serves as a fluorescent probe specifically for cardiolipin, exhibiting excitation (λex) at 489 nm and emission (λem) at 525 nm, enabling the quantification of cardiolipin in isolated mitochondria[1]. Interaction with cardiolipin alters its excitation and emission wavelengths from 496 and 525 nm to 450 and 640 nm, respectively. Moreover, the addition of varying levels of cardiolipin (0 to 30 μM) and other acidic phospholipids to Acridine Orange 10-Nonyl Bromide (45 μM) in thin-walled vesicles results in measurable changes in the red fluorescence emission at 640 nm, reflective of the liposome composition[2].

Solubility Information

Solubility	DMSO: 4.39 mg/mL (9.29 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+40% PEG300+5% Tween-80+45% Saline: 1.5 mg/mL (3.17 mM),Sonication is recommended. 10% DMSO+90% Saline: 0.44 mg/mL (0.93 mM),Suspension.

In vivo Formulation	*Please add the solvents sequentially, clarifying the solution as much as possible before adding the next one. Dissolve by heating and/or sonication if necessary. Working solution is recommended to be prepared and used immediately. The formulation provided above is for reference purposes only. In vivo formulations may vary and should be modified based on specific experimental conditions.*

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	2.1164 mL	10.582 mL	21.164 mL
5 mM	0.4233 mL	2.1164 mL	4.2328 mL
10 mM	0.2116 mL	1.0582 mL	2.1164 mL
50 mM	0.0423 mL	0.2116 mL	0.4233 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

Ratinaud MH, et al. In situ flow cytometric analysis of nonyl acridine orange-stained mitochondria from splenocytes. Cytometry. 1988 May;9(3):206-12.
Gallet PF, et al. Direct cardiolipin assay in yeast using the red fluorescence emission of 10-N-nonyl acridine orange. Eur J Biochem. 1995 Feb 15;228(1):113-9.