Data Sheet (Cat.No.T14118)

TargetMol

Acridine Orange hydrochloride

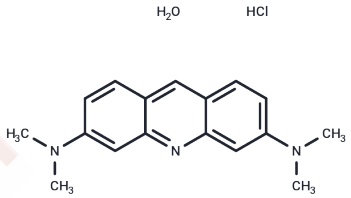
Chemical Properties

CAS No. : 65-61-2

Formula: C17H20ClN3

Molecular Weight: 301.81

Storage: Store at low temperature
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 hydrochloride is a fluorescent dye of cell-permeable. It binds to nucleic acids, resulting in an altered spectral emission.It is used as a supravital stain and in fluorescence cytochemistry. It may cause mutations in microorganisms.
Targets(IC50)	Others,Parasite,Autophagy
Cell Research	Instructions I. Solution preparation 1. Stock solution: Acridine Orange hydrochloride is soluble in water, PBS or appropriate buffer. The commonly used stock solution concentration is 0.1-1 mg/mL. Store at 4°C away from light to prevent degradation. 2. Working solution: Dilute the stock solution to the required concentration. The commonly used concentration range is 0.1-10 μg/mL. The specific concentration is adjusted according to the experimental requirements. Freshly prepare the working solution to ensure the best effect. II. Nucleic acid staining method operation steps 1. Cell staining: 1) Soak the cell pellet or tissue section in the cell culture medium in the Acridine Orange working solution. The staining time is generally 5-30 minutes. The specific time can be optimized according to the sample. 2) If it is a suspended cell, you can directly add the Acridine Orange solution and incubate at room temperature. 3) If it is a fixed cell or tissue section, you need to perform an appropriate fixation process (such as formaldehyde fixation) first. 2. Washing after staining: Wash cells or sections with PBS or appropriate buffer to remove unbound dye. 3. Fluorescence microscopy: Observation under a fluorescence microscope, the excitation wavelength is usually 460-490 nm, and the emission wavelength is 515-530 nm (green fluorescence) and 590-620 nm (red fluorescence). Note: Acridine Orange emits red fluorescence when bound to DNA and green fluorescence when bound to RNA, which can distinguish these two nucleic acids. 4. Cell apoptosis and cell cycle detection 1) Apoptosis detection: Acridine Orange can be used to detect cell apoptosis. In early apoptotic cells, DNA staining shows green fluorescence, while in late apoptotic or necrotic cells, DNA shows red fluorescence.

Cell Research	2) Cell cycle analysis: After staining cells with Acridine Orange, the fluorescence intensity can be analyzed by flow cytometry to obtain information about the cell cycle stage (G0/G1, S, G2/M). Precautions 1. Photosensitivity: Acridine Orange is sensitive to light. Avoid exposing the dye to strong light and store it in a light-proof environment. 2. Toxicity: Acridine Orange may be toxic at high concentrations, and should be used with caution, especially in cell culture or microbiological experiments. The concentration should be reasonably controlled according to the experimental needs. 3. Contamination problem: Acridine Orange may cause microbial mutations. Therefore, in microbiological experiments, the corresponding experimental safety regulations must be followed. 4. Staining time: Too long a staining time may increase the background signal and affect the experimental results. Therefore, the staining time needs to be controlled. The above information is based on published literature. Experimental procedures should be appropriately modified to meet specific research demands.

Solubility Information

Solubility	DMSO: 27.94 mg/mL (92.57 mM),Sonication is recommended. H2O: 50 mg/mL (165.67 mM),Sonication and heating are recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	3.3133 mL	16.5667 mL	33.1334 mL
5 mM	0.6627 mL	3.3133 mL	6.6267 mL
10 mM	0.3313 mL	1.6567 mL	3.3133 mL
50 mM	0.0663 mL	0.3313 mL	0.6627 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

Qing Y,et al. Targeting lysosomal HSP70 induces acid sphingomyelinase-mediated disturbance of lipid metabolism and leads to cell death in T cell malignancies. Clin Transl Med. 2023 Mar;13(3):e1229.
Wu Q, Song M, Luo S, et al.Unveil the mechanism for EHMT--A novel triterpenoid inhibits proliferation and induces apoptosis in colon cancer through ROS-mediated JNK signaling pathway.Biomedicine & Pharmacotherapy.2024, 174: 116469.
Traganos F, et al. Simultaneous staining of ribonucleic and deoxyribonucleic acids in unfixed cells using acridine orange in a flow cytofluorometric system. J Histochem Cytochem. 1977 Jan;25(1):46-56.

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