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产品名称：3,6-双(二甲基氨基)吖啶
产品别名：Acridine Orange hydrochloride ；吖啶橙

生物活性：

Description

Acridine Orange hydrochloride is a cell-permeable fluorescent dye that binds to nucleic acids, resulting in an altered spectral emission.

In Vitro

Acridine Orange has been employed extensively as a cytochemical stain and has shown to stain differentially DNA and RNA, and double-restranded nucleic acids in situ. Acridine Orange can either intercalate into double helical nucleic acids (green fluorescence at 530 nm), or bind electrostatically to phosphate groups of single-stranded molecules (red fluorescence at 640 nm). This unique characteristic makes acridine orange useful for cell-cycle studies[1]. Acridine Orange staining of unfixed cells may be used as a simple, fast means of obtaining information on cell ploidy levels and cell cycle status from DNA measurements (green fluorescence), and cell transcriptional activity from RNA staining (red fluorescence), in human and murine cells lines, peripheral blood and bone marrow specimens from patients with leukemia and mitogenically (phytohemagglutinin) or antigenically (mixed lymphocyte culture) stimulated human peripheral blood cultures[2].

Solvent&Solubility

In Vitro:

H_2O : 50 mg/mL (**165.67 mM;** Need ultrasonic and warming)

DMSO : 30 mg/mL (**99.40 mM;** Need ultrasonic)

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
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

*请根据产品在不同溶剂中的溶解度选择合适的溶剂配制储备液；一旦配成溶液，请分装保存，避免反复冻融造成的产品失效。

储备液的保存方式和期限：-80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture and light)。-80°C 储存时，请在 6 个月内使用，-20°C 储存时，请在 1 个月内使用。

References

[1]. McMaster GK, et al. Analysis of single- and double-stranded nucleic acids on polyacrylamide and agarosegels by using glyoxal and acridine orange. Proc Natl Acad Sci U S A. 1977 Nov;74(11):4835-8.

[2]. 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.

实验参考：

Cell Assay

Two-step, pH 3.0: Aliquots (0.2 mL, containing approximately 2-5x10^5 cells) are withdrawn from cultures and are added to 0.5 mL of a solution containing: 0.1% (v/v) Triton X-100, 0.2 M sucrose, 10^{-4} M EDTA and 2x10^{-2} M citrate-phosphate buffer, at pH 3.0. Triton X-100 is included in the various procedures at the indicated pH to increase cell permeability yet maintain cellular integrity. The chelating agent EDTA is used to facilitate RNA denaturation. The cells are stained one minute later by addition of 1 mL of a solution containing 0.002% (20 μg/mL) AO, 0.1 M NaCl and 10^{-2} M citrate-phosphate buffer, pH 3.8. Cations are included in the staining mixture to ensure staining specificity. The final AO concentration is approximately

	$4x10^{-5}$ M[2].
References	[1]. McMaster GK, et al. Analysis of single- and double-stranded nucleic acids on polyacrylamide and agarosegels by using glyoxal and acridine orange. Proc Natl Acad Sci U S A. 1977 Nov;74(11):4835-8. [2]. 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.