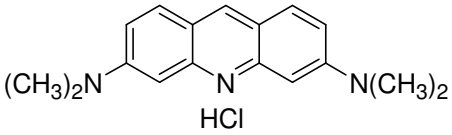
Acridine Orange (AO) Solution

3,6-Acridinediamine

Instruction Manual

Catalog Number	PK-CA707-40039
Description	Acridine orange (AO) forms a complex with double-stranded DNA to emit green fluorescence (525 nm). AO also forms a complex with single-stranded DNA or RNA to emit red fluorescence (650 nm). One molecule of AO intercalates with three base pairs of double-stranded DNA and emits green fluorescence with the maximum wavelength at 525 nm (excitation 502 nm). One molecule of AO can also interact with one phosphate group of single-stranded DNA or RNA to form an aggregated, or stacked, structure, that emits red fluorescence with the maximum wavelength at 650 nm (excitation 460 nm). Therefore, AO is utilized for the detection of both double-stranded DNA and single-stranded DNA or RNA. It enables simultaneous determination of DNA and RNA with argon laser excitation or flow cytometry. The dye is membrane-permeant and its nucleic acid binding property has been used for cell-cycle studies. Acridine orange has also been used for the detection of microorganisms in cerebrospinal fluid and other clinical specimens. We offer a highly purified form of acridine orange while most of the other commercially available grades of AO are either in zinc chloride complex form or of low purity.
Quantity	10 ml (10 mg/ml)
Excitation / Emission Maxima	λex\λem = 493/526 nm; Extinction coefficient: >35,000
Molecular Structure	
Molecular Weight / Molecular Formula	301.82 Da; $C_{17}H_{20}ClN_3$
Purity	>98% (as determined by HPLC)
Appearance / Formulation / Solubility	Yellow solution in water.
Storage & Stability	Store desiccated at 4°C. Protect from light!
Applications	Nucleus stain (nucleic acid stain) General Staining Procedure: 1. Prepare 10-50 µM AO solution with PBS or an appropriate buffer.[a)] 2. Add AO solution with 1/10 of the volume of cell culture medium to the cell culture.[b)] 3. Incubate the cell at 37 °C for 10-20 minutes. 4. Wash cells twice with PBS or an appropriate buffer. 5. Observe the cells using a fluorescence microscope with 500 nm excitation and 530 nm emission filters. [a)] Since AO may be carcinogenic, extreme care is necessary during handling. [b)] You may replace the culture medium with 1/10 concentration of AO buffer solution.
References	1) Cytometry.12(4),330(1991) 2) Methods Cell Biol. 33, 285(1990) 3) J Cell Physiol. 143(2), 279(1990) 4) J. Clin. Microbiol. 14(2), 201(1981)
Caution	Potentially harmful. Avoid prolonged or repeated exposure. Avoid getting in eyes, on skin, or on clothing. Wash thoroughly after handling. If eye or skin contact occurs, wash affected areas with plenty of water for 15 minutes and seek medical advice. In case of inhaling or swallowing, move individual to fresh air and seek medical advice immediately.

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