

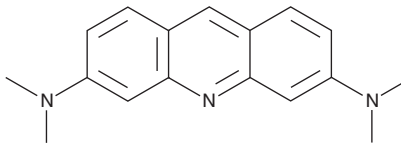
# PRODUCT INFORMATION



## Acridine Orange

Item No. 14338

**CAS Registry No.:** 494-38-2  
**Formal Name:** N<sup>3</sup>,N<sup>3</sup>,N<sup>6</sup>,N<sup>6</sup>-tetramethyl-3,6-acridinediamine  
**Synonyms:** C.I. 46005B, NSC 194350  
**MF:** C<sub>17</sub>H<sub>19</sub>N<sub>3</sub>  
**FW:** 265.4  
**Ex./Em. Max:** 502/525 nm (dsDNA), 460/650 nm (ssDNA or RNA), 475/590 nm (low pH)  
**Supplied as:** A crystalline solid  
**Storage:** -20°C  
**Stability:** ≥4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

### Laboratory Procedures

Acridine orange is supplied as a crystalline solid. A stock solution may be made by dissolving the acridine orange in the solvent of choice, which should be purged with an inert gas. Acridine orange is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide. The solubility of acridine orange in these solvents is approximately 0.3, 20, and 2 mg/ml, respectively.

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. Organic solvent-free aqueous solutions of acridine orange can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of acridine orange in PBS (pH 7.2) is approximately 1 mg/ml. We do not recommend storing the aqueous solution for more than one day.

### Description

Acridine orange is a cell-permeable, nucleic acid-selective fluorescent cationic dye useful for cell cycle determination and detection of cellular autophagy.<sup>1-3</sup> It exhibits excitation/emission spectra of 502/525, 460/650, and 475/590 nm when bound to dsDNA, bound to ssDNA or RNA, and under acidic conditions, respectively.<sup>1,2</sup> The ratio of acridine orange emission at 590 to emission at 525 nm can be used to quantify the increase in the number of acidic vesicular organelles observed during cellular autophagy.

### References

- Virant-Klun, I., Tomazevic, T., and Meden-Vrtovec, H. Sperm single-stranded DNA, detected by acridine orange staining, reduces fertilization and quality of ICSI-derived embryos. *J. Assist. Reprod. Genet.* **19(7)**, 319-328 (2002).
- Han, J. and Burgess, K. Fluorescent indicators for intracellular pH. *Chem. Rev.* **110(5)**, 2709-2728 (2010).
- Thomé, M.P., Filippi-Chiela, E.C., Villodre, E.S., *et al.* Ratiometric analysis of Acridine Orange staining in the study of acidic organelles and autophagy. *J. Cell Sci.* **129(24)**, 4622-4632 (2016).

#### WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

#### SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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