

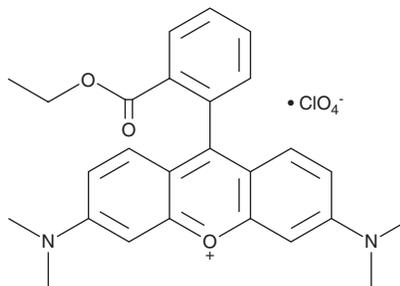
PRODUCT INFORMATION



Tetramethylrhodamine ethyl ester (perchlorate)

Item No. 21426

CAS Registry No.: 115532-52-0
Formal Name: 3,6-bis(dimethylamino)-9-[2-(ethoxycarbonyl)phenyl]-xanthylium, perchlorate
Synonyms: TMRE, TMR ethyl ester
MF: C₂₆H₂₇N₂O₃ • ClO₄
FW: 515.0
Purity: ≥98%
UV/Vis.: λ_{max}: 226, 256, 352, 399, 550 nm
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

Tetramethylrhodamine ethyl ester (TMRE) (perchlorate) is supplied as a crystalline solid. A stock solution may be made by dissolving the TMRE (perchlorate) in the solvent of choice, which should be purged with an inert gas. TMRE (perchlorate) is soluble in organic solvents such as DMSO and dimethyl formamide. The solubility of TMRE (perchlorate) in these solvents is approximately 30 mg/ml. TMRE (perchlorate) is also slightly soluble in ethanol.

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 TMRE (perchlorate) can be prepared by directly dissolving the crystalline solid in aqueous buffers. TMRE (perchlorate) is slightly solubility in PBS (pH 7.2). We do not recommend storing the aqueous solution for more than one day.

Description

TMRE (perchlorate) is a non-cytotoxic cell-permeant fluorogenic dye most commonly used to assess mitochondrial function using live cell fluorescence microscopy and flow cytometry.^{1,2} It displays excitation/emission spectra of 550/575 nm, respectively. Due to the polarization of the mitochondrial membrane, TMRE is taken up into healthy mitochondria. However, when the membrane is depolarized, as in apoptosis, it is not taken up or is released from the mitochondria. Thus, the strength of the fluorescence signal in mitochondria is used to assess cell viability.

References

1. Farkas, D. L., Wei, M.-d., Febroriello, P. *et al.* Simultaneous imaging of cell and mitochondrial membrane potentials. *Biophys J.* **56(6)**, 1053-1069 (1989).
2. Sunaga, D., Tanno, M., Kuno, A., *et al.* Accelerated recovery of mitochondrial membrane potential by GSK-3β inactivation affords cardiomyocytes protection from oxidant-induced necrosis. *PLoS One* **9(11)**, e112529 (2014).

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.

WARRANTY AND LIMITATION OF REMEDY

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