Lumiprobe Corporation
115 Airport Dr Suite 160
Westminster, Maryland 21157
USA
Phone: +1 888 973 6353
Fax: +1 888 973 6354
Email: order@lumiprobe.com

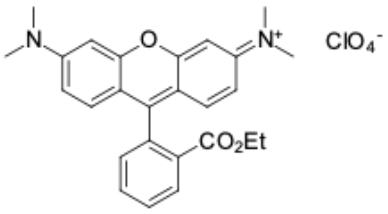
LumiTracker® Mito TMRE

http://www.lumiprobe.com/p/tmre-mitochondrial-dye

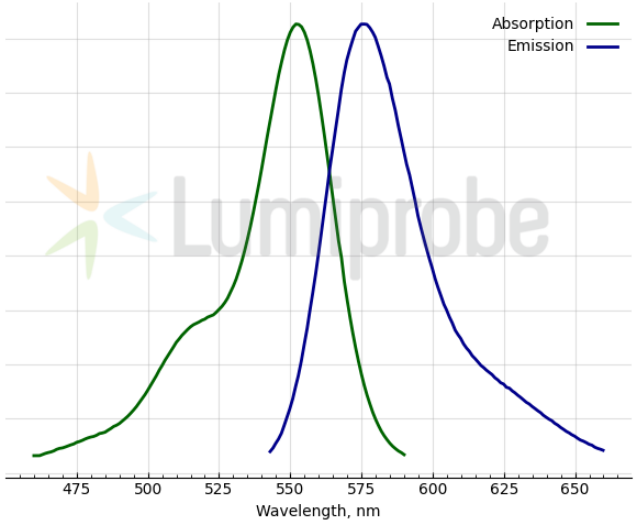
TMRE is widely used for labeling mitochondria in live cells but not compatible with fixation. This lipophilic and positively charged dye rapidly permeates plasma membrane without interacting with membrane proteins and forming aggregates. TMRE selectively accumulates in active mitochondria due to their transmembrane potential.

In addition to staining mitochondria for imaging purposes, TMRE is used for quantitative measurements of mitochondria membrane potential using Nernst equation. The dye serves as a tool to study mitochondrial function changes and cell viability in response to stimuli or pharmaceuticals of interest. Mitochondrial depolarization caused by apoptosis, necrosis or other factors is characterized by decreased membrane potential and is indicated with decreased fluorescence compared to intact cells that have polarized mitochondria.

TMRE applications include fluorescent microscopy, flow cytometry, microplate assays. The dye has an excitation maximum at 549 nm: it can be effectively excited by the blue (488 nm) or yellow-green (561 nm) lasers. Emission of the dye can be detected in PE channel (maximum at 574 nm).



Structure of TMRE mitochondrial dye



Absorption and emission spectra of TMRE

General properties	
Appearance:	dark colored solid
Molecular weight:	514.96
CAS number:	115532-52-0
Molecular formula:	$C_{26}H_{27}N_2ClO_7$
IUPAC name:	3,6-bis(dimethylamino)-9-(2-ethoxycarbonylphenyl)xanthylium perchlorate
Solubility:	good in DMF, DMSO
Quality control:	NMR ^1H, HPLC-MS (95%)
Storage conditions:	24 months after receival at -20°C in the dark. Transportation: at room temperature for up to 3 weeks. Avoid prolonged exposure to light. Desiccate.
Legal statement:	This Product is offered and sold for research purposes only. It has not been tested for safety and efficacy in food, drug, medical device, cosmetic, commercial or any other use. Supply does not express or imply authorization to use for any other purpose, including, without limitation, in vitro diagnostic purposes, in the manufacture of food or pharmaceutical products, in medical devices or in cosmetic products.

Spectral properties

Excitation/absorption maximum, nm:	552
Emission maximum, nm:	575