**TMRE**

Cat. No.: HY-D0985A  
CAS No.: 115532-52-0  
Molecular Formula: C₂₆H₂₇ClN₂O₇  
Molecular Weight: 514.95  
Target: Others  
Pathway: Others  
Storage: 4°C, protect from light  
* In solvent : -80°C, 6 months; -20°C, 1 month (protect from light)

**SOLVENT & SOLUBILITY**

### SOLVENT & SOLUBILITY

#### In Vitro

DMSO : ≥ 150 mg/mL (291.29 mM)

* “≥” means soluble, but saturation unknown.

<table>
<thead>
<tr>
<th>Concentration</th>
<th>1 mg</th>
<th>5 mg</th>
<th>10 mg</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 mM</td>
<td>1.9419 mL</td>
<td>9.7097 mL</td>
<td>19.4194 mL</td>
</tr>
<tr>
<td>5 mM</td>
<td>0.3884 mL</td>
<td>1.9419 mL</td>
<td>3.8839 mL</td>
</tr>
<tr>
<td>10 mM</td>
<td>0.1942 mL</td>
<td>0.9710 mL</td>
<td>1.9419 mL</td>
</tr>
</tbody>
</table>

Preparing Stock Solutions

Please refer to the solubility information to select the appropriate solvent.

**BIOLOGICAL ACTIVITY**

### Description

TMRE is a mitochondria specific dye (λ_{ex}=550 nm, λ_{em}=575 nm).

### In Vitro

TMRE is a mitochondria specific dye (λ_{ex}=550 nm, λ_{em}=575 nm).[1] Multidirectional dynamic movement of TMRE is observed in epithelial cells and bidirectional dynamic movement is seen in the superficial cortical fiber cells of live bovine lenses. In the epithelium, the movement of TMRE fluorescence is up to 5 μm/min whereas in the superficial cortex the observed movement is up to 18.5 μm/min. The movement of TMRE fluorescence is abolished with treatment of the uncoupler, carbonyl cyanide m-chlorophenylhydrazone (CCCP).[2]

**PROTOCOL**

### Cell Assay [1]

The entire experiment should be performed at room temperature because temperature will directly impact mitochondrial transmembrane potential and TMRE staining. Cells should never be placed, centrifuged, incubated, or washed at 4°C or have ice-cold buffers or media added. Treat the cells with a cytotoxic stimulus. Harvest cells and
resuspend at $5 \times 10^5$ cells/mL in culture medium containing 150 nM TMRE. Incubate for 5 min at room temperature in the dark. Add Carbonyl cyanide 4-(trifluoromethoxy)phenylhydrazone (FCCP) (5 μM final concentration) to an aliquot of untreated cells and incubate for 5 min at room temperature in the dark. Turn on the appropriate laser on the flow cytometer. Set up a histogram plot to detect TMRE using log scale\(^1\).

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

REFERENCES
