

## MitoSOX Red

### Introduction

MitoSOX Red, also called Mito-HE, is a novel probe for the selective detection of superoxide in the mitochondria of live cells. MitoSOX Red is live-cell permeant that selectively targets the mitochondria. Once in the mitochondria, MitoSOX can be oxidized by superoxide and exhibits bright red fluorescence. MitoSOX is oxidized by superoxide but not by other reactive oxygen species (ROS) or reactive nitrogen species (RNS), indicating that it is superoxide-specific. Meanwhile, oxidation of this probe can be prevented by superoxide dismutase (SOD) as well as superoxide scavengers.

### Components and Storage

The product should be stored at -20°C away from light and moisture. Stable for 1 year.

### Properties

Physical Appearance	Solid
M.Wt	759.70
Cas No.	1003197-00-9
Formula	C <sub>43</sub> H <sub>43</sub> IN <sub>3</sub> P
Ex/Em	510/580
Synonyms	Mito-HE
Solubility	Soluble in DMSO

### Protocol

- Preparation of the stock solution:** Dissolve 50 µg MitoSOX Red in 13 µL of DMSO to make a 5 mM stock solution. The stock solution is unstable, it is recommended to aliquot the stock solution into small volume. The stock solution should be stored at -20°C away from light and avoid repeated freeze/thaw cycles. For 1 mg MitoSOX Red, 263 µL of DMSO is needed to make the stock solution.

**\*Note:** Allow MitoSOX Red to warm to room temperature before opening.

- Preparation of the working solution:** Dilute the stock solution in a suitable buffer (for example, HBSS with Calcium and Magnesium) to make a 500 nM working solution. It is suggested to dilute MitoSOX Red when using it.

**\*Note:** The optimal concentration of the working solution varies depending on the type of cells. Usually, optimize the working solution concentration between 100 nM to 1  $\mu$ M, high working solution concentration has toxicity to cells.

- 3. Detection:** For adherent cells, grow cells to reach the desired density. Add an appropriate working solution to cover cells. Incubate cells for 30 min at 37°C away from light. Gently wash cells with pre-warmed buffer (for example, HBSS with Calcium and Magnesium) three times. Then detect the fluorescence signal of cells (Ex/Em: 510/580 nm).

**\*Note:** The volume of working solution and optimal time for incubation vary depending on the experimental condition. For suspension cells, harvest cells and perform similarly to the adherent cells. If positive control (MitoPQ) or negative control (Spermine NONOate) are needed, purchase the MitoPQ (Catalog Number: C3590) or Spermine NONOate (Catalog Number: B6612) on our website.

## Note

- MitoSOX Red is easy to be oxidized. Please avoid contact with air. In addition, MitoSOX Red is potentially toxic, pay attention to the protection.
- For your safety and health, please wear lab coats and gloves during the experiment.
- For research use only. Not to be used in clinical diagnostic or clinical trials.

**APExBIO Technology**

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