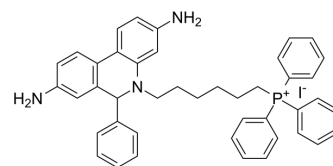


MitoSOX Red

Cat. No.:	HY-D1055
CAS No.:	1003197-00-9
Molecular Formula:	C ₄₃ H ₄₃ IN ₃ P
Molecular Weight:	759.7
Target:	Reactive Oxygen Species; Mitochondrial Metabolism; Fluorescent Dye
Pathway:	Immunology/Inflammation; Metabolic Enzyme/Protease; NF-κB; Others
Storage:	-20°C, protect from light, stored under nitrogen * In solvent : -80°C, 6 months; -20°C, 1 month (protect from light, stored under nitrogen)



SOLVENT & SOLUBILITY

In Vitro	DMSO : 100 mg/mL (131.63 mM; Need ultrasonic)					
	Preparing Stock Solutions	<div>Solvent Concentration</div>	Mass	1 mg	5 mg	10 mg
		1 mM		1.3163 mL	6.5815 mL	13.1631 mL
		5 mM		0.2633 mL	1.3163 mL	2.6326 mL
		10 mM		0.1316 mL	0.6582 mL	1.3163 mL
Please refer to the solubility information to select the appropriate solvent.						
In Vivo	1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline Solubility: ≥ 2.5 mg/mL (3.29 mM); Clear solution					

BIOLOGICAL ACTIVITY

Description	<p>MitoSOX Red is a live cell fluorescent probe that specifically targets mitochondria and is cell membrane permeable. MitoSOX Red enters mitochondria and is oxidized by superoxide but not by other ROS or RNS generating systems. The oxidized MitoSOX Red then binds to nucleic acids in mitochondria/nucleus, producing strong red fluorescence. MitoSOX Red can be used as a fluorescent indicator to specifically detect superoxide. In addition, superoxide dismutase (SOD) can prevent the oxidation of MitoSOX Red.</p> <p>Excitation/emission wavelength: 510/580 nm.</p>
In Vitro	<p>General Protocol</p> <p>1. Preparation of MitoSOX Red working solution</p> <p>1.1 Preparation of the stock solution</p> <p>Dissolve 50 µg MitoSOX Red in 13 µL DMSO to obtain 5 mM of stock solution.</p> <p>Note: It is recommended to store the stock solution at -20°C and -80°C away from light and avoid repetitive freeze-thaw</p>

cycles.

1.2 Preparation of MitoSOX Red working solution

Dilute the stock solution in serum-free cell culture medium or PBS to obtain 1-10 μM of working solution.

Note: Please adjust the concentration of MitoSOX Red working solution according to the actual situation.

2. Cell staining

2.1 Suspension cells 6-well plate

a. Centrifuge at 1000 g at 4°C for 3-5 minutes and then discard the supernatant. Wash twice with PBS, 5 minutes each time. The cell density is $1 \times 10^6/\text{mL}$.

b. Add 1 mL of working solution, and then incubate at room temperature for 5-30 minutes.

c. Centrifuge at 400 g at 4°C for 3-4 minutes and then discard the supernatant.

d. Wash twice with PBS, 5 minutes each time.

e. Resuspend cells with serum-free cell culture medium or PBS. Observation by fluorescence microscopy or flow cytometry.

2.2 Adherent cells

a. Culture adherent cells on sterile coverslips.

b. Remove the coverslip from the medium and aspirate excess medium.

c. Add 100 μL of working solution, gently shake it to completely cover the cells, and then incubate at room temperature for 5-30 minutes.

d. Wash twice with medium, 5 minutes each time. Observation by fluorescence microscopy or flow cytometry.

Storage

-20°C, 1 year. Protect from light

Precautions

1. Please adjust the concentration of MitoSOX Red working solution according to the actual situation.

2. This product is for R&D use only, not for drug, household, or other uses.

3. For your safety and health, please wear a lab coat and disposable gloves to operate.

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

CUSTOMER VALIDATION

- Adv Funct Mater. 2024 Jan 12.
- Biomaterials. 2023 Aug 26, 122295.
- J Hazard Mater. 2023 Jun 13;457:131840.
- Redox Biol. 2024 Mar 19, 103129.
- Redox Biol. 2024 Jan 6, 103034.

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REFERENCES

- [1]. Fengjiao Jin, et al. The PI3K/Akt/GSK-3 β /ROS/eIF2B pathway promotes breast cancer growth and metastasis via suppression of NK cell cytotoxicity and tumor cell susceptibility. Cancer Biol Med. 2019 Feb;16(1):38-54.
- [2]. Price OT, et al. Quantitative fluorescence of 5-FU-treated fetal rat limbs using confocal laser scanning microscopy and Lysotracker Red. Cytometry A. 2003;53(1):9-21.
- [3]. Fengjiao Jin, et al. The PI3K/Akt/GSK-3 β /ROS/eIF2B pathway promotes breast cancer growth and metastasis via suppression of NK cell cytotoxicity and tumor cell susceptibility. Cancer Biol Med. 2019 Feb;16(1):38-54.

Caution: Product has not been fully validated for medical applications. For research use only.

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