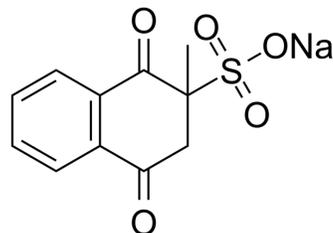


## Menadione bisulfite sodium

<b>Cat. No.:</b>	HY-B1897A
<b>CAS No.:</b>	130-37-0
<b>Molecular Formula:</b>	C <sub>11</sub> H <sub>9</sub> NaO <sub>5</sub> S
<b>Molecular Weight:</b>	276.24
<b>Target:</b>	Others
<b>Pathway:</b>	Others
<b>Storage:</b>	4°C, sealed storage, away from moisture * In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture)



### SOLVENT & SOLUBILITY

#### In Vitro

H<sub>2</sub>O : ≥ 100 mg/mL (362.00 mM)  
 DMSO : 100 mg/mL (362.00 mM; Need ultrasonic)  
 \* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions	Solvent Concentration	Mass	1 mg	5 mg	10 mg
	1 mM		3.6200 mL	18.1002 mL	36.2004 mL
	5 mM		0.7240 mL	3.6200 mL	7.2401 mL
	10 mM		0.3620 mL	1.8100 mL	3.6200 mL

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

#### In Vivo

- Add each solvent one by one: PBS  
Solubility: 120 mg/mL (434.40 mM); Clear solution; Need ultrasonic
- Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline  
Solubility: ≥ 2.5 mg/mL (9.05 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)  
Solubility: ≥ 2.5 mg/mL (9.05 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% corn oil  
Solubility: ≥ 2.5 mg/mL (9.05 mM); Clear solution

### BIOLOGICAL ACTIVITY

#### Description

Menadione bisulfite (sodium) is used as an agent to induce acute oxidative stress, and to function as a plant-defense activator against several pathogens.

#### In Vitro

Menadione sodium bisulfite (500 μM) treatment and the concomitant ROS increase have an important impact on the photosynthetic activity of the cells. Global and specific antioxidant defences decrease with Menadione sodium bisulfite (500

$\mu\text{M}$ ) treatment<sup>[1]</sup>. Menadione sodium bisulfite and PABA activate similar defense responses (PR, ROS, and HR). Menadione sodium bisulfite enhances resistance, both locally and systemically, to phoma stem canker disease caused by *Leptosphaeria maculans*. Menadione sodium bisulfite treatment induces resistance against downy mildew in pearl millet. Menadione sodium bisulfite acts through priming of specific sets of the plant innate-defense repertoire. Menadione sodium bisulfite treatment up-regulates the expression of a gene encoding a GRX480 protein, a member of the glutaredoxin family that regulates protein redox state<sup>[1]</sup>.

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

## PROTOCOL

### Kinase Assay <sup>[1]</sup>

Briefly, cells are lysed by sonication (6 cycles of 10 s separated by 30 s, on ice) in a buffer containing 25 mM Hepes at pH 7.5, 5 mM  $\text{MgCl}_2$ , 5 mM DTT, 2 mM PMSF, 5 mM EDTA, 400 mM sorbitol and 10  $\mu\text{g}/\text{mL}$  Protease Inhibitor cocktail. A quantity of 40  $\mu\text{g}$  Symbiodinium protein extract is incubated in the reaction buffer. The mixture consists of 50  $\mu\text{M}$  Ac-DEVD-AFC, 100 mM Hepes at pH 7.5, 10% (v/v) sucrose, 0.1% (v/v) CHAPS, 10 mM DTT and 10 mM PMSF. Samples are then incubated in black 96-well microplates and the fluorescence emitted is measured every 3 min for 90 min at 505 nm, with a 400 nm excitation wavelength provided by a FLX-Xenius spectrofluorometer. Caspase-like activities are then expressed in pmol of AFC cleavage per minute and illustrated as percentage of the controls.

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

## REFERENCES

[1]. Roberty S, et al. Differential antioxidant response between two Symbiodinium species from contrasting environments. *Plant Cell Environ.* 2016 Dec;39(12):2713-2724

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

Tel: 609-228-6898

Fax: 609-228-5909

E-mail: tech@MedChemExpress.com

Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA