# Data Sheet

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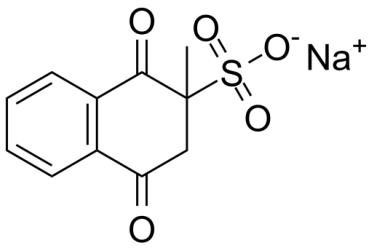
| **Product Name:** | Menadione bisulfite (sodium) |
| **Cat. No.:** | CS-6059 |
| **CAS No.:** | 130-37-0 |
| **Molecular Formula:** | C11H9NaO5S |
| **Molecular Weight:** | 276.24 |
| **Target:** | Others |
| **Pathway:** | Others |
| **Solubility:** | DMSO : ≥ 36 mg/mL (130.32 mM) |



## BIOLOGICAL ACTIVITY:

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 μM) treatment[1]. 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[1].

## PROTOCOL (Extracted from published papers and Only for reference)

**Kinase Assay:** [1]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 $MgCl_2$, 5 mM DTT, 2 mM PMSF, 5 mM EDTA, 400 mM sorbitol and 10 μg/mL Protease Inhibitor cocktail. A quantity of 40 μg Symbiodinium protein extract is incubated in the reaction buffer. The mixture consists of 50 μM 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.

## 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

## CAIndexNames:

2-Naphthalenesulfonic acid, 1,2,3,4-tetrahydro-2-methyl-1,4-dioxo-, sodium salt (1:1)

## SMILES:

O=S(C(CC(C1=C2C=CC=C1)=O)(C)C2=O)([O-])=O.[Na+]

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

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