Data Sheet (Cat.No.T5963)

TargetMol

Menadione bisulfite sodium

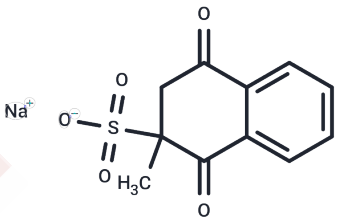
Chemical Properties

CAS No. : 130-37-0

Formula: C11H9NaO5S

Molecular Weight: 276.24

Storage: Powder: -20°C for 3 years | In solvent: -80°C for 1 year
Actual storage temperature shall be subject to the COA.



Biological Description

Description	Menadione bisulfite sodium (Vitamin K3 sodium bisulfite) is used clinically in China to treat hemorrhagic diseases caused by vitamin K deficiency and globally as a vitamin K supplement.
Targets(IC50)	Others,Endogenous Metabolite
In vitro	MSB inhibited Aβ42 amyloid formation in a dose dependent manner, delayed the secondary structural conversion of Aβ42 from random coil to ordered β-sheet, and attenuated the ability of Aβ42 aggregates to disrupt membranes; moreover, the quinone backbone rather than lipophilicity is esstial for the inhibitory effects of MSB. Next, in cells expressing a pathogenic APP mutation (Osaka mutation) that results in the formation of intraneuronal Aβ oligomers, MSB inhibited the intracellular aggregation of Aβ. Moreover, MSB treatment significantly extended the life span of Caenorhabditis elegans CL2120, a strain that expresses human Aβ42. Together, these results suggest that MSB and its derivatives may be further explored as potential therapeutic agents for the prevention or treatment of Alzheimer's disease(AD)[1].

Solubility Information

Solubility	DMSO: 100 mg/mL (362 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+40% PEG300+5% Tween 80+45% Saline: 10 mg/mL (36.2 mM),Solution. 10% DMSO+90% Saline: < 10 mg/mL (36.2 mM),Lower concentrations may be soluble, but exact solubility limit is unknown. *Please add the solvents sequentially, clarifying the solution as much as possible before adding the next one. Dissolve by heating and/or sonication if necessary. Working solution is recommended to be prepared and used immediately. The formulation provided above is for reference purposes only. In vivo formulations may vary and should be modified based on specific experimental conditions.*

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	3.620 mL	18.1002 mL	36.2004 mL
5 mM	0.724 mL	3.620 mL	7.2401 mL
10 mM	0.362 mL	1.810 mL	3.620 mL
50 mM	0.0724 mL	0.362 mL	0.724 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

Reference

Yu Z , Yudan Z , Zhuoyi W , et al. Menadione sodium bisulfite inhibits the toxic aggregation of amyloid-β(1-42)[J]. Biochimica et Biophysica Acta (BBA) - General Subjects, 2018, 1862(10):2226-2235.
Astakhova T , Morozov A , Erokhov P , et al. Combined Effect of Bortezomib and Menadione Sodium Bisulfite on Proteasomes of Tumor Cells: The Dramatic Decrease of Bortezomib Toxicity in a Preclinical Trial[J]. Cancers, 2018, 10(10).