Data Sheet (Cat.No.TQ0133)

TargetMol

Amifostine thiol dihydrochloride

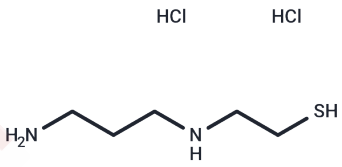
Chemical Properties

CAS No. : 14653-77-1

Formula: C5H16Cl2N2S

Molecular Weight: 207.165

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	Amifostine thiol dihydrochloride (WR 1065) can activate p53 through a JNK-dependent signaling pathway. It also protects normal tissues from the toxic effects of certain cancer drugs.
Targets(IC50)	p53,MDM-2/p53
In vitro	The DNA-binding activity is increased in a WR-1065 concentration-dependent manner. Cells treated with 1 mM WR-1065 dihydrochloride for 24 h revealed that all of the p53-induced genes analyzed are transactivated following WR-1065 dihydrochloride treatment, in a p53-dependent manner. Significantly, treatment with WR-1065 dihydrochloride leads to a 3-fold increase in luciferase expression driven by AP-1 and a 5-fold increase when this reporter gene is driven by NF-κB when these values are normalized to the level of the cotransfected β-galactosidase gene [2].
In vivo	WR-1065 attenuates the severity of 6-OHDA-induced catalepsy when compared with 6-OHDA-lesioned rats. Also, it has been observed that WR-1065 dihydrochloride improves catalepsy in a dose-dependent manner. Pretreatment with three different doses of WR-1065 dihydrochloride (20, 40, and 80 μg/2 μL/rat) for 3 days before 6-OHDA administration, significantly elevates SOD activity and restores it to normal range compare with 6-OHDA lesioned rats [3].
Cell Research	For Western analysis, cells are treated with 1 mM WR-1065 for 24 h, and subconfluent cultures of cells are harvested and lysed in RIPA buffer supplemented with protease inhibitors. Protein concentrations are determined by a detergent-compatible assay. Western blots are blocked and incubated in antibody in PBS/0.2% Tween 20/5% nonfat dry milk. Blots are incubated with 1 μg/mL antibody for 1 h at room temperature, followed by washing in PBS/0.2% Tween 20 and incubation in peroxidase-conjugated secondary antibody and chemiluminescence detection [2].
Animal Research	Seventy-two rats are divided randomly into 9 equal groups: 1) Control group receives no injection and is left untreated for the entire period of the experiment as intact animals; 2) Sham-operated group is subjected only to surgical procedure; 3) Vehicle (saline)-treated group receives 2 μL saline (Intra-SNc); 4) Lesioned group receives 6-hydroxydopamine; 5) Vehicle+6OHDA group receives saline as a vehicle 3 days once daily (2 μL/rat) before 6-OHDA injection; 6 to 8) Rats in these groups are pretreated with Intra-SNc injection of WR-1065 (20, 40 and 80 μg/2 μL/rat) 3 days before 6-OHDA injection; 9) Non-lesioned animals receive intra-SNc injection of WR-1065 dihydrochloride (80 μg/2 μL/rat) for three days [3].

Solubility Information

Solubility	DMSO: 24 mg/mL (115.85 mM),Sonication is recommended. H2O: 100 mg/mL (482.71 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: 1 mg/mL (4.83 mM),Sonication is recommended. *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	4.827 mL	24.1348 mL	48.2695 mL
5 mM	0.9654 mL	4.827 mL	9.6539 mL
10 mM	0.4827 mL	2.4135 mL	4.827 mL
50 mM	0.0965 mL	0.4827 mL	0.9654 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

Pluquet O, et al. The cytoprotective aminothiol WR1065 activates p53 through a non-genotoxic signaling pathway involving c-Jun N-terminal kinase. J Biol Chem. 2003 Apr 4;278(14):11879-87.

Shen H, et al. Binding of the aminothiol WR-1065 to transcription factors influences cellular response to anticancer drugs. J Pharmacol Exp Ther. 2001 Jun;297(3):1067-73.

Afshin Kheradmand, et al. Effect of WR-1065 on 6-hydroxydopamine-induced catalepsy and IL-6 level in rats. Iran J Basic Med Sci. 2016 May; 19(5): 490-496.