Amifostine trihydrate

Cat. No.: HY-B0639A

CAS No.: 112901-68-5

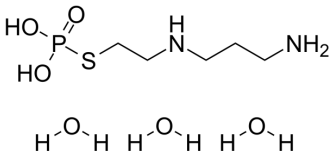
Molecular Formula: $C_5H_{21}N_2O_6PS$

Molecular Weight: 268.27

Target: MDM-2/p53; HIF/HIF Prolyl-Hydroxylase

Pathway: Apoptosis; Metabolic Enzyme/Protease

Storage: 4°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

H_2O : 125 mg/mL (465.95 mM; Need ultrasonic)

Preparing Stock Solutions

Concentration \ Solvent \ Mass	1 mg	5 mg	10 mg
1 mM	3.7276 mL	18.6379 mL	37.2759 mL
5 mM	0.7455 mL	3.7276 mL	7.4552 mL
10 mM	0.3728 mL	1.8638 mL	3.7276 mL

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

BIOLOGICAL ACTIVITY

Description

Amifostine trihydrate (WR2721 trihydrate) is a broad-spectrum cytoprotective agent and a radioprotector. Amifostine trihydrate selectively protects normal tissues from damage caused by radiation and chemotherapy. Amifostine trihydrate is potent hypoxia-inducible factor-α1 (HIF-α1) and p53 inducer. Amifostine trihydrate protects cells from damage by scavenging oxygen-derived free radicals. Amifostine trihydrate reduces renal toxicity and has antiangiogenic action[1][2][3][4].

In Vitro

Amifostine (0.78125-100 μM, 24 h) trihydrate reduces tert-Butyl hydroperoxide (TBHP)-induced cell damage in a dose-dependent manner and significantly reduces H9c2 cells apoptosis at a concentration of 100 μM[5].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

In Vivo

Amifostine (i.v., 400 mg/kg, 4 h) trihydrate has a protective effect against myocardial I/R injury in male C57BL/6 mice[5].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	Male C57BL/6 mice with myocardial I/R injury[5]

Dosage:	400 mg/kg
Administration:	Intravenous injection; 4 hours
Result:	Attenuated cardiomyocyte apoptosis and reduced the production of I/R-induced ROS. Significantly reduced the expression of cleaved caspase 3 and Bax while enhanced the expression of SOD1, SOD2 and Bcl2. Significantly increased SOD activity and reduced MDA levels.

CUSTOMER VALIDATION

- ACS Appl Mater Interfaces. 2023 Mar 14.
- Int Immunopharmacol. 2020 Nov;88:106998.
- Sci Rep. 2023 Jun 28;13(1):10485.
- University of Pardubice. 2023 Apr 27.

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REFERENCES

[1]. John R Kouvaris, et al. Amifostine: the first selective-target and broad-spectrum radioprotector. Oncologist. 2007 Jun;12(6):738-47.

[2]. Shao-Ze Wu, et al. Amifostine Pretreatment Attenuates Myocardial Ischemia/Reperfusion Injury by Inhibiting Apoptosis and Oxidative Stress. Oxid Med Cell Longev. 2017;2017:4130824.

[3]. D Maurici, et al. Amifostine (WR2721) restores transcriptional activity of specific p53 mutant proteins in a yeast functional assay. Oncogene. 2001 Jun 14;20(27):3533-40.

[4]. Efstathia Giannopoulou, et al. Amifostine inhibits angiogenesis in vivo. J Pharmacol Exp Ther. 2003 Feb;304(2):729-37.

[5]. Michael I Koukourakis, et al. Amifostine induces anaerobic metabolism and hypoxia-inducible factor 1 alpha. Cancer Chemother Pharmacol. 2004 Jan;53(1):8-14.

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

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