Amifostine thiol

Cat. No.: HY-137864

CAS No.: 31098-42-7

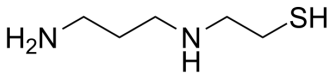
Molecular Formula: $C_5H_{14}N_2S$

Molecular Weight: 134.24

Target: MDM-2/p53

Pathway: Apoptosis

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

DMSO : 250 mg/mL (1862.34 mM; Need ultrasonic)
H_2O : 100 mg/mL (744.93 mM; Need ultrasonic)

Preparing Stock Solutions	Mass / Solvent / Concentration	1 mg	5 mg	10 mg
	1 mM	7.4493 mL	37.2467 mL	74.4934 mL
	5 mM	1.4899 mL	7.4493 mL	14.8987 mL
	10 mM	0.7449 mL	3.7247 mL	7.4493 mL

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

In Vivo

1. Add each solvent one by one: PBS
Solubility: 16.67 mg/mL (124.18 mM); Clear solution; Need ultrasonic

BIOLOGICAL ACTIVITY

Description

Amifostine thiol (WR-1065) is an active metabolite of the cytoprotector Amifostine (HY-B0639). Amifostine thiol is a cytoprotective agent with radioprotective abilities. Amifostine thiol activates p53 through a JNK-dependent signaling pathway[1][2][3].

IC_{50} & Target

p53[2]

In Vitro

Amifostine thiol can reduce both the direct and delayed detrimental effects of both high and low-LET radiation exposures[1].
Amifostine thiol attenuates both the DNA damage and the G1-phase arrest induced by radiation[1].
Amifostine thiol (4 mM; 30 minutes) protects RKO36 cells from chromosomal damage and death induced by ionizing radiation[1].
Amifostine thiol (4 mM; 30 minutes) protects irradiated RKO36 cells from delayed genomic instability[1].
Amifostine thiol is cytotoxic to RKO36 cells at milimolar concentrations, especially after continuous treatment[1].

Amifostine thiol at 40 μM protects RKO36 cells from delayed genomic instability but not from cell death and immediate chromosomal damage[1].
Amifostine thiol activates JNK resulting in the phosphorylation of p53 at threonine 81[2].
Amifostine thiol affects phosphorylation of topoisomerase IIα leading to changes in enzyme activity and cell cycle progression in CHO AA8 cells[3].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

CUSTOMER VALIDATION

- Front Cell Dev Biol. 2020 Jul 29;8:703.

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REFERENCES

[1]. Jaroslaw Dziegielewski, et al. WR-1065, the Active Metabolite of Amifostine, Mitigates Radiation-Induced Delayed Genomic Instability. Free Radic Biol Med. 2008 Dec 15; 45(12): 1674-1681.

[2]. Olivier Pluquet, 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. J Biol Chem. 2003 Apr 4;278(14):11879-87.

[3]. J. S. Murley, et al. WR-1065, an active metabolite of the cytoprotector amifostine, affects phosphorylation of topoisomerase IIα leading to changes in enzyme activity and cell cycle progression in CHO AA8 cells. Cell Prolif. 1997 Jun; 30(6): 283-294.

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

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