# Amifostine thiol

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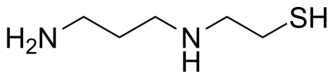
|---|---|
| **Cat. No.:** | HY-137864 |
| **CAS No.:** | 31098-42-7 |
| **Molecular Formula:** | $C_5H_{14}N_2S$ |
| **Molecular Weight:** | 134.24 |
| **Target:** | MDM-2/p53 |
| **Pathway:** | Apoptosis |
| **Storage:** | 4°C, protect from light, stored under nitrogen<br>* In solvent : -80°C, 6 months; -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.

## 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.





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