Methoxyamine hydrochloride

Cat. No.: HY-Y0958

CAS No.: 593-56-6

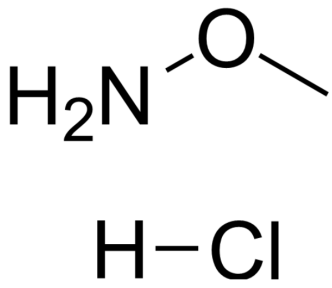
Molecular Formula: CH_6ClNO

Molecular Weight: 83.52

Target: DNA/RNA Synthesis; Apoptosis

Pathway: Cell Cycle/DNA Damage; Apoptosis

Storage: 4°C, sealed storage, away from moisture
* In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture)



SOLVENT & SOLUBILITY

In Vitro

DMSO : 50 mg/mL (598.66 mM; Need ultrasonic)

Preparing Stock Solutions	Concentration / Solvent / Mass	1 mg	5 mg	10 mg
	1 mM	11.9732 mL	59.8659 mL	119.7318 mL
	5 mM	2.3946 mL	11.9732 mL	23.9464 mL
	10 mM	1.1973 mL	5.9866 mL	11.9732 mL

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

In Vivo

1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.5 mg/mL (29.93 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (29.93 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (29.93 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Methoxyamine (O-Methylhydroxylamine) hydrochloride is an orally active and potent base excision repair (BER) inhibitor. Methoxyamine hydrochloride binds to 3' hydroxyl groups that are left behind by 3-methylpurine-DNA glycosylase (MPG) following excision of the damaged base and thus inhibits BER activity. Methoxyamine hydrochloride binds directly to the apyrimidinic (AP) sites. Methoxyamine hydrochloride synergistically enhances the therapeutic efficacy of DNA-damaging agents[1][2].

In Vitro

Methoxyamine (O-Methylhydroxylamine; 1 mM; 1-7 days) hydrochloride sensitizes pediatric (SJG2) GBM cells in vitro to Temozolomide (HY-17364; 100 μM) and induces apoptosis[1].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

In Vivo	Compared with vehicle and Methoxyamine alone, only the mice (NOD-SCID mice injecting SJG2 cells) receiving dual treatment (65 mg/kg Temozolomide + 100 mg/kg Methoxyamine; oral gavage; daily for 2 weeks, weekends off) has a significant increase in survival[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

REFERENCES

[1]. Sameer Agnihotri, et al. ATM regulates 3-methylpurine-DNA glycosylase and promotes therapeutic resistance to alkylating agents. Cancer Discov. 2014 Oct;4(10):1198-213.

[2]. Samideh Khoei, et al. Effects of resveratrol and methoxyamine on the radiosensitivity of iododeoxyuridine in U87MG glioblastoma cell line. Exp Biol Med (Maywood). 2016 Jun;241(11):1229-36.

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