Oxymatrine

Cat. No.: HY-N0158

CAS No.: 16837-52-8

Molecular Formula: $C_{15}H_{24}N_2O_2$

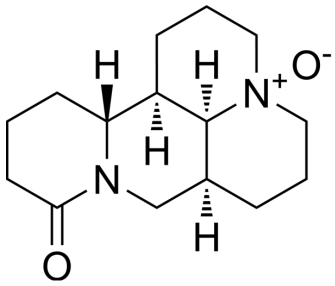
Molecular Weight: 264.36

Target: TGF-beta/Smad; Apoptosis

Pathway: Stem Cell/Wnt; TGF-beta/Smad; Apoptosis

Storage:

Powder	-20°C	3 years
	4°C	2 years
In solvent	-80°C	6 months
	-20°C	1 month



SOLVENT & SOLUBILITY

In Vitro

H_2O : 100 mg/mL (378.27 mM; Need ultrasonic)
DMSO : 100 mg/mL (378.27 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	3.7827 mL	18.9136 mL	37.8272 mL
	5 mM	0.7565 mL	3.7827 mL	7.5654 mL
	10 mM	0.3783 mL	1.8914 mL	3.7827 mL

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

In Vivo

1. Add each solvent one by one: PBS
   Solubility: 100 mg/mL (378.27 mM); Clear solution; Need ultrasonic
2. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.08 mg/mL (7.87 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.08 mg/mL (7.87 mM); Clear solution
4. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.08 mg/mL (7.87 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Oxymatrine, an alkaloid from Sophora flavescens Alt. with anti-inflammatory, antifibrosis, and antitumor effects, inhibits the iNOS expression and TGF-β/Smad pathway. Oxymatrine inhibits bocavirus minute virus of canines (MVC) replication, reduces viral gene expression and decreases apoptosis induced by viral infection.

In Vitro	Oxymatrine, an alkaloid component extracted from the roots of Sophora species, has been shown to have antiinflammatory, antifibrosis, and antitumor effects and the ability to protect against myocardial damage, etc. The potential signaling pathways involved in the clinical application of oxymatrine might include the TGF-β/Smad, tolllike receptor 4/nuclear factor kappa-light-chain-enhancer of activated B cells, toll-like receptor9/TRAF6, Janus kinase/signal transduction and activator of transcription, phosphatidylinositol-3 kinase/Akt, delta-opioid receptorarrestinl-Bcl-2, CD40, epidermal growth factor receptor, nuclear factor erythroid-2-related factor 2/hemeoxygenase-1 signaling pathways, and dimethylarginine dimethylaminohydrolase/asymmetric dimethylarginine metabolism pathway[1]. Oxymatrine significantly inhibits the proliferation of DU145 and PC-3 cell lines in a time- and dose-dependent manner. By contrast, following treatment with oxymatrine, PNT1B healthy human prostate cell proliferation is not inhibited[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	The volume and weight of tumors in mice significantly decreased in a dose-dependent manner. Oxymatrine may reduce prostate cancer cell growth by promoting cell apoptosis in vivo[2]. Oxymatrine is effective in reducing the production and deposition of collagen in the liver tissue of experimental rats. Oxymatrine could promote the expression of Smad 7 and inhibit the expression of Smad 3 and CBP in CCl4-induced hepatic fibrosis in SD rats, could modulate the fibrogenic signal transduction of TGFβ-Smad pathway[3]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

PROTOCOL

Cell Assay [2]	DU145, PC-3 and PNT1B cell lines (3×10^4 cells/well) are seeded into 96-well plates and incubated overnight at 37°C in 5% CO_2. Subsequently, the cells are incubated with different concentrations of oxymatrine (0, 2, 4, 6 and 8 mg/mL). MTT (10 mL; 5 mg/mL) is added and the mixture is incubated in darkness at 37°C for 2 h. Absorbance is measured at a wavelength of 490 nm using a microplate reader[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
Animal Administration [2][3]	Rats: One hundred healthy male SD rats (weight 140-160 g) are used in the study. All 100 rats are randomLy divided into three groups: Control (n=20), Treatment (n=40) and Model group (n=40). For the model group, 300 g/L CCl_4 soluted in liquid paraffin is injected subcutaneously at a dosage of 3 mL/kg twice per week[6]. The treated rats receive Oxymatrine celiac injections at 10 mg/kg twice a week besides the injection of CCl_4[3]. Mice: BALB/c homozygous (nu/nu) nude mice are used in the study. 24 tumor-bearing mice are randomLy divided into three groups: The control group is treated with PBS, and two groups are treated with different concentrations of oxymatrine (50 mg/kg and 100 mg/kg body weight). Oxymatrine is administered to the mice, using daily intraperitoneal injections[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

CUSTOMER VALIDATION

- Cell Death Dis. 2020 Aug 10;11(8):695.
- J Med Chem. 2019 Sep 12;62(17):7961-7975.
- Life Sci. 2020 Sep 15;257:118090.
- Front Bioeng Biotechnol. 2020 May 8;8:392.
- Int Immunopharmacol. 2023 Oct 1;124(Pt B):111000.

See more customer validations on www.MedChemExpress.com

REFERENCES

[1]. Lu ML, et al. Potential Signaling Pathways Involved in the Clinical Application of Oxymatrine. Phytother Res. 2016 Jul;30(7):1104-12.

[2]. Wu C, et al. Oxymatrine inhibits the proliferation of prostate cancer cells in vitro and in vivo. Mol Med Rep. 2015 Jun;11(6):4129-34.

[3]. Wu XL, et al. Effect of Oxymatrine on the TGFbeta-Smad signaling pathway in rats with CCl4-induced hepatic fibrosis. World J Gastroenterol. 2008 Apr 7;14(13):2100-5.

[4]. Ding Y, et al. Oxymatrine Inhibits Bocavirus MVC Replication, Reduces Viral Gene Expression and Decreases Apoptosis Induced by Viral Infection. Virol Sin. 2019 Feb;34(1):78-87.

Tel: 609-228-6898 Fax: 609-228-5909 E-mail: tech@MedChemExpress.com

Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA