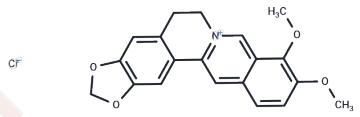
Data Sheet (Cat.No.T0461)

TargetMol

Berberine chloride

Chemical Properties



CAS No. : 633-65-8

Formula: C20H18ClNO4

Molecular Weight: 371.80

Storage: Powder: -20°C for 3 years | In solvent: -80°C for 1 year
Actual storage temperature shall be subject to the COA.

Biological Description

Description	Berberine chloride (Natural Yellow 18) is an alkaloid derived from Hydrastis canadensis L. of the Berberidaceae family, serving as a commonly used intestinal antibacterial agent. Berberine chloride exhibits biological activities including anti-inflammatory, hypoglycemic, lipid-regulating, antitumor, and cardiovascular protective effects. Berberine chloride can be utilized in research on chronic diseases and tumors.
Targets(IC50)	Reactive Oxygen Species,Endogenous Metabolite,Antibacterial,Antibiotic,Parasite, Autophagy,ROS,Topoisomerase
In vitro	**Methods**: Copper complexes (0–100 μM), berberine chloride (0–100 μM), and a combination treatment (copper complexes (0–100 μM) + BBC (50 μM)) were added to MDA-MB-231 VIM RFP (triple-negative breast cancer cells) and MCF-10A (normal human mammary epithelial cells). Incubation time: 24, 48, 72 h; cell viability was assessed using the CCK-8 assay. **Results**: Berberine chloride significantly inhibited cell growth, and combination therapy significantly enhanced cytotoxicity against cancer cells. [1] **Methods**: LoVo cells were treated with 40 μM berberine chloride for 24 h, and cell cycle distribution was analyzed by flow cytometry. **Results**: Berberine chloride induced G_2/M phase arrest in LoVo cells. [2]
In vivo	**Methods**: Using a LoVo cell xenograft model in nude mice, Berberine chloride was administered orally at doses of 10, 30, and 50 mg/kg for 10 consecutive days, and the tumor suppression rate was calculated. **Results**: The tumor suppression rate for 50 mg/kg Berberine chloride reached 45.3%, with no significant toxicity observed in mouse body weight or spleen.[2]

Solubility Information

Solubility	DMSO: 21.00 mg/mL (56.48 mM),Sonication is recommended. Ethanol: < 1 mg/mL (insoluble or slightly soluble), H2O: < 1 mg/mL (insoluble or slightly soluble), (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+40% PEG300+5% Tween 80+45% Saline: 1.00 mg/mL (2.69 mM),Sonication is recommended. *Please add the solvents sequentially, clarifying the solution as much as possible before adding the next one. Dissolve by heating and/or sonication if necessary. Working solution is recommended to be prepared and used immediately. The formulation provided above is for reference purposes only. In vivo formulations may*

In vivo Formulation	*vary and should be modified based on specific experimental conditions.*

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	2.6896 mL	13.4481 mL	26.8962 mL
5 mM	0.5379 mL	2.6896 mL	5.3792 mL
10 mM	0.269 mL	1.3448 mL	2.6896 mL
50 mM	0.0538 mL	0.269 mL	0.5379 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

Reference

Alajroush DR, et al. Enhancement of antitumor effects of berberine chloride with a copper(II) complex against human triple negative breast cancer: In vitro studies. Results Chem. 2024 Dec;12:101882.

Cai Y, et al. Berberine inhibits the growth of human colorectal adenocarcinoma in vitro and in vivo. J Nat Med. 2014 Jan;68(1):53-62.

Kløve S, et al. Toll-Like Receptor-4 Is Involved in Mediating Intestinal and Extra-Intestinal Inflammation in Campylobacter coli-Infected Secondary Abiotic IL-10-/- Mice. Microorganisms. 2020;8(12):1882. Published 2020 Nov 27.