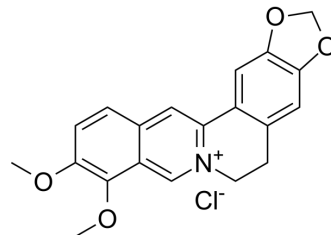


Berberine chloride

Cat. No.:	HY-18258
CAS No.:	633-65-8
Molecular Formula:	C ₂₀ H ₁₈ ClNO ₄
Molecular Weight:	371.81
Target:	Topoisomerase; Autophagy; Bacterial; Reactive Oxygen Species; Antibiotic; Endogenous Metabolite; Parasite
Pathway:	Cell Cycle/DNA Damage; Autophagy; Anti-infection; Immunology/Inflammation; Metabolic Enzyme/Protease; NF-κB
Storage:	4°C, sealed storage, away from moisture * In solvent : -80°C, 1 year; -20°C, 6 months (sealed storage, away from moisture)



SOLVENT & SOLUBILITY

In Vitro

DMSO : 8.33 mg/mL (22.40 mM; Need ultrasonic)
H₂O : < 0.1 mg/mL (ultrasonic) (insoluble)

	Solvent Concentration	Mass		
		1 mg	5 mg	10 mg
Preparing Stock Solutions	1 mM	2.6895 mL	13.4477 mL	26.8955 mL
	5 mM	0.5379 mL	2.6895 mL	5.3791 mL
	10 mM	0.2690 mL	1.3448 mL	2.6895 mL

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

In Vivo

- Add each solvent one by one: 0.5% CMC-Na/saline water
Solubility: 11 mg/mL (29.59 mM); Suspended solution; Need ultrasonic
- Add each solvent one by one: PBS
Solubility: 10 mg/mL (26.90 mM); Suspended solution; Need ultrasonic
- Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
Solubility: ≥ 1.25 mg/mL (3.36 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
Solubility: ≥ 1.25 mg/mL (3.36 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Berberine chloride is an alkaloid that acts as an antibiotic. Berberine chloride induces reactive oxygen species (ROS) generation and inhibits DNA topoisomerase. Antineoplastic properties^[1].

IC₅₀ & Target

ROS^[1]

DNA topoisomerase^[1]

In Vitro

Berberine (1.25-160 µM; 72 hours) has potential inhibitory effects on the proliferation of four colorectal carcinoma cell lines LoVo, HCT116, SW480, and HT-29^[1].

Berberine (1.25-160 µM; 24-72 hours) induces a time- and dose-dependent inhibition of LoVo cell growth^[1].

LoVo cells are exposure to Berberine (10-80 µM) for 24 h. Cell cycle analysis of 40 µM Berberine-treated LoVo cells by flow cytometry shows accumulation of cells in the G2/M phase^[1].

Berberine (10-80 µM) suppresses cyclin B1, cdc2 and cdc25c protein expression after 24 h, especially at the dose of 80.0 µM^[1].

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

Cell Proliferation Assay^[1]

Cell Line:	Four colorectal carcinoma cell lines LoVo, HCT116, SW480, and HT-29
Concentration:	1.25, 2.5, 5, 10, 20, 40, 80, and 160 µM
Incubation Time:	72 hours
Result:	Inhibited the proliferation of four cell lines. The IC ₅₀ ranged from 40.8±4.1 µM (LoVo) to 98.6±2.9 µM (HCT116).

Cell Proliferation Assay^[1]

Cell Line:	Colorectal carcinoma cell lines LoVo
Concentration:	1.25, 2.5, 5, 10, 20, 40, 80, and 160 µM
Incubation Time:	24, 48, 72 hours
Result:	Induced a time- and dose-dependent inhibition of cell growth. By 72 h, 160.0 µM induced 71.1±1.9 % growth inhibitions in LoVo cells.

Cell Cycle Analysis^[1]

Cell Line:	LoVo cells
Concentration:	0, 10, 20, 40, or 80 µM
Incubation Time:	24 hours
Result:	Exposure to 40.0 µM induced G2/M-phase cell cycle arrest, an increase in the G2/M-phase population and a progressive decline in the G1 population.

Western Blot Analysis^[1]

Cell Line:	LoVo cells
Concentration:	10, 20, 40, or 80 µM
Incubation Time:	24 hours
Result:	Suppressed cyclin B1, cdc2 and cdc25c protein expression.

In Vivo

Berberine (10, 30, or 50 mg/kg/day; gastrointestinal gavage; for 10 consecutive days) inhibits the growth of human colorectal adenocarcinoma in vivo. Berberine at doses of 30 and 50 mg/kg/day taken by gastrointestinal gavage shows inhibitory rates of 33.1% and 45.3% on the human colorectal adenocarcinoma xenograft growth in nude mice^[1].

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

Animal Model:	5-week-old BALB/c nu/nu mice with human colorectal adenocarcinoma LoVo xenografts ^[1]
Dosage:	10, 30, or 50 mg/kg/day
Administration:	Gastrointestinal gavage; for 10 consecutive days
Result:	Showed inhibitory rates of 33.1 % and 45.3 % at doses of 30 and 50 mg/kg/day.

CUSTOMER VALIDATION

- Acta Pharmacol Sin. 2022 Aug 10.
- Int J Nanomedicine. 2023 Jul 31.
- JCI Insight. 2023 Jul 24;8(14):e166306.
- Phytomedicine. 2023 Dec 2, 155247.
- Phytomedicine. 2023 Jul 17, 154962.

See more customer validations on www.MedChemExpress.com

REFERENCES

[1]. 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.

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

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