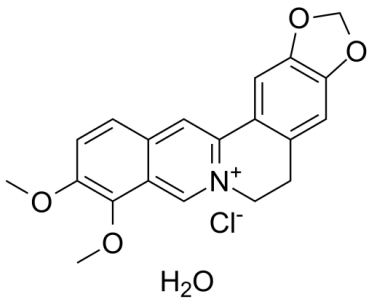
Data Sheet

Product Name:	Berberine (chloride hydrate)
Cat. No.:	CS-3213
CAS No.:	68030-18-2
Molecular Formula:	C20H20ClNO5
Molecular Weight:	389.83
Target:	Autophagy; Bacterial; Reactive Oxygen Species; Topoisomerase
Pathway:	Anti-infection; Autophagy; Cell Cycle/DNA Damage; Immunology/Inflammation; Metabolic Enzyme/Protease; NF-κB
Solubility:	DMSO : ≥ 3.9 mg/mL (10.00 mM); H2O : 1.25 mg/mL (3.21 mM; Need ultrasonic)



BIOLOGICAL ACTIVITY:

Berberine chloride hydrate (Natural Yellow 18 chloride hydrate) is an alkaloid isolated from the Chinese herbal medicine Huanglian, as an **antibiotic**. Berberine chloride hydrate induces reactive oxygen species (**ROS**) generation and inhibits **DNA topoisomerase**. Antineoplastic properties[1]. IC50 & Target: ROS[1]

DNA topoisomerase[1] **In Vitro:** Berberine chloride hydrate (Natural Yellow 18 chloride hydrate; 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 chloride hydrate (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 chloride hydrate (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 chloride hydrate (10-80 μM) suppresses cyclin B1, cdc2 and cdc25c protein expression after 24 h, especially at the dose of 80.0 μM[1]. **In Vivo:** Berberine chloride hydrate (Natural Yellow 18 chloride hydrate; 10, 30, or 50 mg/kg/day; gastrointestinal gavage; for 10 consecutive days) inhibits the growth of human colorectal adenocarcinoma in vivo. Berberine chloride hydrate 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].

PROTOCOL (Extracted from published papers and Only for reference)

Cell assay [3] HepG2 cells were seeded at a density of 1 × 105 cells/well in 0.5 ml DMEM containing 10% FBS onto the 48-well tissue culture plates, cells were serum-starved for 24 hours and then exposed to various concentrations of Berberine for 48 hours. The cell proliferation was assessed using BrdU incorporation though the BrdU ELISA colorimetric assay (Roche, Indianapolis, IN) according to the manufacturer's protocol. The ELISA OD value of treatment group was normalized to that of untreated control group. Each condition was tested in triplicate.

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.

CAIndexNames:

Benzo[g]-1,3-benzodioxolo[5,6-a]quinolizinium, 5,6-dihydro-9,10-dimethoxy-, chloride, hydrate (1:1:x)

SMILES:

COC1=C(OC)C2=C[N+]3=C(C(C(CC3)=C4)=CC5=C4OCO5)C=C2C=C1.[Cl-].O

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

Tel: 732-484-9848 Fax: 888-484-5008 E-mail: sales@ChemScene.com

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