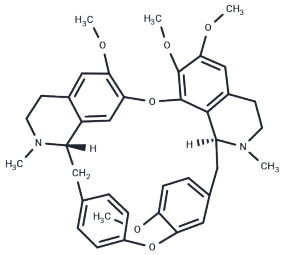
Data Sheet (Cat.No.T2996)

TargetMol

Tetrandrine

Chemical Properties



CAS No. : 518-34-3

Formula: C38H42N2O6

Molecular Weight: 622.75

Storage: Store at low temperature
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	Tetrandrine (Sinomenine A) is a naturally occurring biphenylisoquinoline alkaloid, a calcium channel inhibitor. Tetrandrine inhibits voltage-gated calcium channels (ICa) and Ca2+-activated potassium channels.
Targets(IC50)	Calcium Channel,Parasite,Potassium Channel
In vitro	**METHODS**: Leukemia cell lines K562, THP-1, U937, and HL60 were treated with Tetrandrine (1-3 μM) for 24-72 h, and cell numbers were measured. **RESULTS**: 2 μM and 3 μM Tetrandrine significantly inhibited cell proliferation. [1] **METHODS**: A panel of GFP-LC3-expressing tumor cell lines MCF-7, PLC-5, SK-Hep1, HeLa, and PC3 cells were treated with Tetrandrine (5 μM) for 16 h and GFP-LC3 spots were detected. **RESULTS**: Tetrandrine significantly induced GFP-LC3 spot formation with similar potency (5 μM) in all cell lines tested.Tetrandrine induced autophagy in multiple cell lines. [2]
In vivo	**METHODS**: To detect anti-tumor activity in vivo, athymic nude mice bearing THP-1 xenografts were administered Tetrandrine (25-50 mg/kg, 0.5% methylcellulose) by gavage once daily for 13 days. **RESULTS**: Tetrandrine treatment reduced tumor growth. [1]

Solubility Information

Solubility	DMSO: 12.45 mg/mL (19.99 mM),Sonication and heating are recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+40% PEG300+5% Tween 80+45% Saline: 0.7 mg/mL (1.12 mM),Solution. *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 vary and should be modified based on specific experimental conditions.*

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	1.6058 mL	8.0289 mL	16.0578 mL
5 mM	0.3212 mL	1.6058 mL	3.2116 mL
10 mM	0.1606 mL	0.8029 mL	1.6058 mL
50 mM	0.0321 mL	0.1606 mL	0.3212 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

Wu G, et al. c-MYC and reactive oxygen species play roles in tetrandrine-induced leukemia differentiation. Cell Death Dis. 2018 May 1;9(5):473.
Zhang Q, Wu Y, Yu Y, et al. Tetrandrine Prevents Neomycin-Induced Ototoxicity by Promoting Steroid Biosynthesis. Frontiers in Bioengineering and Biotechnology. 2022, 10
Song J, Xu J, Guo J, et al. The enhancement of Tetrandrine to gemcitabine-resistant PANC-1 cytochemical sensitivity involves the promotion of PI3K/Akt/mTOR-mediated apoptosis and AMPK-regulated autophagy. Acta Histochemica. 2021, 123(6): 151769.
Wong VKW, et al. Tetrandrine, an Activator of Autophagy, Induces Autophagic Cell Death via PKC-α Inhibition and mTOR-Dependent Mechanisms. Front Pharmacol. 2017 Jun 8;8:351.
Dong Y, et al. Life Sci, 1997, 60(8), PL135-140.