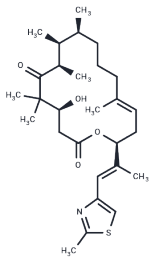
Data Sheet (Cat.No.TQ0202)

TargetMol

Epothilone D

Chemical Properties



CAS No. : 189453-10-9

Formula: C28H43NO4S

Molecular Weight: 489.72

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	Epothilone D is a natural polyketide compound isolated from the myxobacterium Sorangium cellulosum that binds to tubulin and inhibits microtubule disassembly, thereby blocking mitosis, cellular proliferation, and cell motility, Epothilone D is extensively utilized in cancer research to study microtubule dynamics, mitotic arrest, and cytoskeleton-targeted anticancer mechanisms.
Targets(IC50)	Microtubule Associated
In vitro	Epothilone D is a more potent microtubule stabilizer in vitro than epothilone A or B. In vitro, Epothilone D has shown potent cytotoxicity in a panel of human tumor cell lines, with similar potency to paclitaxel. Epothilone D also shows a definite advantage over paclitaxel in drug-resistant cell lines and retained its cytotoxicity against a multidrug-resistant cell line over-expressing P-glycoprotein [1].
In vivo	In a transgenic mouse model of Tauopathy (PS19 mice), which mimics features of Alzheimer's disease, intraperitoneal (i.p.) administration of Epothilone D (1 mg/kg or 3 mg/kg, weekly for 3 months) affected microtubule density and axonal integrity. These structural changes were associated with improvements in cognitive measures in the treated mice. At these dosages, the mice did not exhibit weight loss or neutropenia, indicating a tolerance profile distinct from higher chemotherapeutic doses [2].
Animal Research	Groups of mice (n=3) receive intraperitoneal (i.p.) injections of 3.7 mg/kg of Epothilone D (epoD) dissolved in 100% DMSO, followed by euthanization using approved at times ranging from 0.25 h to 24 h. In another study, groups of mice (n=3) receive injections of 3 mg/kg of epoD in 100% DMSO followed by euthanization 4, 6 and 10 days later. The Epothilone D (epoD) levels in the brain and blood samples are determined using LC-MS/MS protocols. Groups (n=10-13) of 3-month old PS19 tau Tg mice or 3-month old non-Tg littermates are administered weekly i.p. injections of 1 mg/kg epoD, 3 mg/kg of Epothilone D (epoD) or vehicle (DMSO), for a total of 3 months. Animals are monitored for signs of abnormal behavior or distress and are weighed weekly. After final dosing, the mice undergo motor function and cognitive testing. After euthanization, brains and optic nerve (ON) are recovered for immunohistochemical analyses. A subset of mice from each group also undergo necropsy evaluation with organ weights recorded [2].

Solubility Information

Solubility	DMSO: 80 mg/mL (163.36 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+40% PEG300+5% Tween-80+45% Saline: 3.3 mg/mL (6.74 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 vary and should be modified based on specific experimental conditions.*

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	2.042 mL	10.2099 mL	20.4198 mL
5 mM	0.4084 mL	2.042 mL	4.084 mL
10 mM	0.2042 mL	1.021 mL	2.042 mL
50 mM	0.0408 mL	0.2042 mL	0.4084 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

Konner J, et al. Phase I clinical, pharmacokinetic, and pharmacodynamic study of KOS-862 (Epothilone D) in patients with advanced solid tumors and lymphoma. Invest New Drugs. 2012 Dec;30(6):2294-302.
Brunden KR, et al. Epothilone D improves microtubule density, axonal integrity, and cognition in a transgenic mouse model of tauopathy. J Neurosci. 2010 Oct 13;30(41):13861-6.