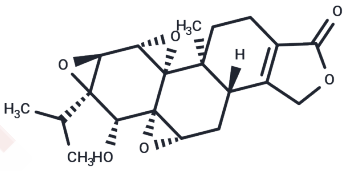
Data Sheet (Cat.No.T2179)

TargetMol

Triptolide

Chemical Properties



CAS No. :	38748-32-2
Formula:	C20H24O6
Molecular Weight:	360.40
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	Triptolide (PG490) belongs to the tricyclic diterpenoid group of natural products and is an inhibitor of NF-κB activation. Triptolide exhibits immunosuppressive, anti-rheumatic, anti-inflammatory, anti-proliferative and anti-tumor activities.
Targets(IC50)	Apoptosis,Mdm2,HSP,NF-κB
In vitro	**METHODS**: Neuroblastoma cells BE(2)-C were treated with Triptolide (5-100 nM) for 24 h. Cell viability was measured using the CCK-8 Assay. **RESULTS**: A concentration-dependent response to Triptolide was observed in BE(2)-C cells. At 50 nM Triptolide, cell viability was significantly reduced to 50%. [1] **METHODS**: Breast cancer cells MCF-7 were treated with Triptolide (10-50 nmol/L) for 24 h, and the expression levels of target proteins were detected using Western Blot. **RESULTS**: Triptolide decreased the messenger RNA and protein levels of ERα in MCF-7 cells in a dose-dependent manner. [2]
In vivo	**METHODS**: To assay antitumor activity in vivo, Triptolide (0.4 mg/kg) was administered by gavage to BALB/c-nu+/nu+ mice harboring the breast cancer tumor MCF-7 once daily for three weeks. **RESULTS**: Triptolide inhibited the growth of MCF-7 cell xenografts in a mouse model. [2] **METHODS**: To investigate the effects on ulcerative colitis (UC), Triptolide (0.1-0.4 mg/kg) was administered orally to DSS-induced UC mice once daily for seven days. **RESULTS**: Triptolide has anti-inflammatory and therapeutic effects on UC mice. [3]
Cell Research	Triptolide is dissolved in DMSO (1 mg/mL) and stored, and then diluted with RPMI 1640 medium before use[3]. The viability of differentiated PC12 cells treated with different concentrations of Triptolide. After differentiated PC12 cells are cultured on 96-well plates with RPMI 1640 medium for stabilization, differentiated PC12 cells are incubated with different concentrations of Triptolide (0.01, 0.1, and 1 nM) for 24 hours. The concentrations in this study are chosen. Then cell viability is determined by the MTT assay. Each condition and experiment is repeated three times[3].

Solubility Information

Solubility	DMSO: 51.00 mg/mL (141.51 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	2.7747 mL	13.8735 mL	27.7469 mL
5 mM	0.5549 mL	2.7747 mL	5.5494 mL
10 mM	0.2775 mL	1.3873 mL	2.7747 mL
50 mM	0.0555 mL	0.2775 mL	0.5549 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

Yan X, et al. Triptolide inhibits cell proliferation and tumorigenicity of human neuroblastoma cells. Mol Med Rep. 2015 Feb;11(2):791-6.
Zhang G M, Huang S S, Ye L X, et al. Reciprocal positive regulation between BRD4 and YAP in GNAQ-mutant uveal melanoma cells confers sensitivity to BET inhibitors. Pharmacological Research. 2022: 106464.
Geng W, Guo X, Zhang L, et al. Resveratrol inhibits proliferation, migration and invasion of multiple myeloma cells via NEAT1-mediated Wnt/β-catenin signaling pathway[J]. Biomedicine & Pharmacotherapy. 2018 Nov;107:484-494.
Li H, et al. Triptolide inhibits human breast cancer MCF-7 cell growth via downregulation of the ERα-mediated signaling pathway. Acta Pharmacol Sin. 2015 May;36(5):606-13.
Geng W, Guo X, Zhang L, et al. Resveratrol inhibits proliferation, migration and invasion of multiple myeloma cells via NEAT1-mediated Wnt/β-catenin signaling pathway Resveratrol inhibits proliferation, migration and invasion of multiple myeloma cells via NEAT1-mediated Wnt/β-catenin signaling pathway. Biomedicine & Pharmacotherapy. 2018 Nov;107:484-494.
Wu H, et al. Effect of Triptolide on Dextran Sodium Sulfate-Induced Ulcerative Colitis and Gut Microbiota in Mice. Front Pharmacol. 2020 Jan 29;10:1652.
Zhang H, Cai J, Li C, et al.Wogonin inhibits latent HIV-1 reactivation by downregulating histone crotonylation. Phytomedicine.2023: 154855.
Leuenroth SJ, et al. Proc Natl Acad Sci, 2007, 104(11), 4389-4394.
Wang Y, Jing Y, Huang D, et al.Triptolide ameliorates renal tubulointerstitial fibrosis through EZH2.bioRxiv.2023: 2023.01. 29.526092.
Wu Y, Tang K, Wang C, et al.Establishment of interpretable cytotoxicity prediction models using machine learning analysis of transcriptome features.Acta Pharmaceutica Sinica B.2025
Xu L, et al. Food Chem Toxicol, 2013, 57, 371-379.
Ganguly S, et al. Targeting HSF1 disrupts HSP90 chaperone function in chronic lymphocytic leukemia. Oncotarget. 2015 Oct 13;6(31):31767-79.
Xu P, et al. Triptolide Inhibited Cytotoxicity of Differentiated PC12 Cells Induced by Amyloid-Beta25-35 via the Autophagy Pathway. PLoS One. 2015 Nov 10;10(11):e0142719.
Kong LL, et al. Inhibition of P-glycoprotein Gene Expression and Function Enhances Triptolide-induced Hepatotoxicity in Mice. Sci Rep. 2015 Jul 2;5:11747.
Zhang W, et al. Triptolide Combined with Radiotherapy for the Treatment of Nasopharyngeal Carcinoma via NF-κB-Related Mechanism. Int J Mol Sci. 2016 Dec 19;17(12). pii: E2139.

Tel:781-999-4286 E_mail:info@targetmol.com Address:34 Washington Street,Wellesley Hills,MA 02481