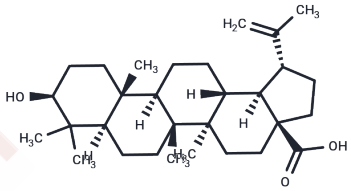
Data Sheet (Cat.No.T2830)

TargetMol

Betulinic acid

Chemical Properties



CAS No. : 472-15-1

Formula: C30H48O3

Molecular Weight: 456.70

Storage: Keep away from direct sunlight
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	Betulinic acid (ALS-357) is a pentacyclic lupane-type triterpene derivative of betulin (isolated from the bark of Betula alba, the common white birch) which has antiretroviral, antimalarial, and anti-inflammatory properties, as well as a more recently discovered potential as an anticancer agent, by inhibition of topoisomerase.
Targets(IC50)	Apoptosis,Mitophagy,NF-κB,HIV Protease,Endogenous Metabolite,Aminopeptidase, Parasite,Autophagy,Topoisomerase
In vitro	In LNCaP cell cultures of athymic nude mice, Betulinic acid inhibits the growth of prostate cancer cells and tumors (xenografts). This inhibitory effect is partly due to the downregulation of protease-dependent Sp1/3/4 and several SP-regulated genes.
In vivo	As an anti-melanoma agent, Betulinic acid inhibits the activity of aminopeptidase N (IC50: 7.3 μM). It exhibits anti-HIV properties by blocking HIV replication in H9 lymphocytes (EC50: 1.4 μM) and inhibiting the growth of uninfected H9 cells (IC50: 13 μM). Moreover, Betulinic acid shows potential as an anti-cancer candidate, suppressing the activity of eukaryotic topoisomerase I (IC50: 5 μM).
Kinase Assay	Topoisomerase I-DNA interaction: Annealed 25-mer duplex of oligonucleotide-1 and oligonicleotide-2 is incubated with 25 or 50 units of rat liver topoisomerase I at 8 °C for 15 min in the presence or absence of betulinic acid in binding buffer. After incubation the reaction mixtures are electrophoresed in 7% non-denaturing polyacrylamide gel at 4 °C in 0.167 × TBE buffer and DNA bands are stained with ethidium bromid

Solubility Information

Solubility	Ethanol: 10.00 mg/mL (21.90 mM),Sonication is recommended. H2O: < 1 mg/mL (insoluble or slightly soluble), DMSO: 33.30 mg/mL (72.91 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+90% Corn Oil: 1.5 mg/mL (3.28 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	2.1896 mL	10.9481 mL	21.8962 mL
5 mM	0.4379 mL	2.1896 mL	4.3792 mL
10 mM	0.219 mL	1.0948 mL	2.1896 mL
50 mM	0.0438 mL	0.219 mL	0.4379 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

Fujioka T, et al. J Nat Prod, 1994, 57(2), 243-247.
Tangliang Zhao1*, Yi Bao1*,Xinxin Gan1*, Jie Wang1*, Qiong Chen1*, Zhihui Dai2*, Bing Liu 1, Anbang Wang1, Shuhan Sun2, Fu Yang2,3, Linhui Wang1 DNA methylation-regulated QPCT promotes sunitinib resistance by increasing HRAS stability in renal cell carcinoma. Theranostics. 2019, Vol. 9, Issue 21
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Melzig MF, et al. Planta Med, 1998, 64(7), 655-657.
Chowdhury AR, et al. Med Sci Monit, 2002, 8(7), BR254-265.
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Kalra J, et al. Betulinic acid alleviates dextran sulfate sodium-induced colitis and visceral pain in mice. Naunyn Schmiedebergs Arch Pharmacol. 2017 Dec 26.
Tangliang Zhao1*, Yi Bao1*,Xinxin Gan1, et al. DNA methylation-regulated QPCT promotes sunitinib resistance by increasing HRAS stability in renal cell carcinoma. Theranostics. 2019, Vol. 9, Issue 22