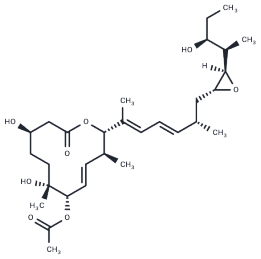
Data Sheet (Cat.No.T16551)

TargetMol

Pladienolide B

Chemical Properties



CAS No. :	445493-23-2
Formula:	C30H48O8
Molecular Weight:	536.7
Storage:	Store at low temperature Pure form: -20°C for 3 years | In solvent: -80°C for 1 year Actual storage temperature shall be subject to the COA.

Biological Description

Description	Pladienolide B is a potent spliceosome inhibitor, a macrolide isolated from Streptomyces obtusususus Mer-12, which targets the SF3B1 subunit of the spliceosome. Pladienolide B exerts its antitumor effects by inhibiting pre-mRNA splicing and inducing necrosis.Pladienolide B possesses antitumor activity and can be used to study leukemia and lymphoid tumors. Pladienolide B has antitumor activity and can be used to study leukemia and lymphoid tumors.
Targets(IC50)	Apoptosis
In vitro	Pladienolide B (0.1-2 nM; 24-72 h; HeLa cells) decreases SF3b1 expression, induces cell cycle arrest and apoptosis, and suppresses cell viability in human cervical carcinoma cells in a concentration- and time-dependent manner. [3]
In vivo	Pladienolide B (2.5-10 mg/kg; i.v.; daily for 5 days) demonstrated strong growth inhibitory or regressive activities against PC-3, OVCAR-3, DU-145, WiDr, and HCT-116, BSY-1 xenografts in BALB/c nu/nu mice, exhibiting intense antitumor activities.[4]

Solubility Information

Solubility	DMSO: 100 mg/mL (186.32 mM) (< 1 mg/ml refers to the product slightly soluble or insoluble)

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	1.8632 mL	9.3162 mL	18.6324 mL
5 mM	0.3726 mL	1.8632 mL	3.7265 mL
10 mM	0.1863 mL	0.9316 mL	1.8632 mL
50 mM	0.0373 mL	0.1863 mL	0.3726 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

Effenberger KA, et al. Coherence between cellular responses and in vitro splicing inhibition for the anti-tumor drug pladienolide B and its analogs. J Biol Chem. 2014 Jan 24;289(4):1938-47.

Jia S, Wen X, Zhu M, et al.The pluripotent-to-totipotent state transition in mESCs activates the intrinsic apoptotic pathway through DUX-induced DNA replication stress.Cellular and Molecular Life Sciences.2024, 81(1): 1-12.

Aouida M, et al. CRISPR/Cas9-mediated target validation of the splicing inhibitor Pladienolide B. Biochim Open. 2016 Feb 24;3:72-75.

Zhang Q, et al. Inhibition of SF3b1 by pladienolide B evokes cycle arrest, apoptosis induction and p73 splicing in human cervical carcinoma cells. Artif Cells Nanomed Biotechnol. 2019 Dec;47(1):1273-1280.

Mizui Y, et al. Pladienolides, new substances from culture of Streptomyces platensis Mer-11107. III. In vitro and in vivo antitumor activities. J Antibiot (Tokyo). 2004 Mar;57(3):188-96.