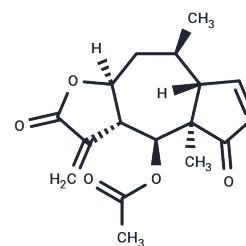


Bigelovin

Chemical Properties

CAS No. :	3668-14-2
Formula:	C ₁₇ H ₂₀ O ₅
Molecular Weight:	304.34
Storage:	Keep away from direct sunlight Powder: -20°C for 3 years In solvent: -80°C for 1 year <small>Actual storage temperature shall be subject to the COA.</small>



Biological Description

Description	Bigelovin is a selective retinoid X receptor α agonist. Bigelovin suppresses tumor growth through inducing apoptosis and autophagy via the inhibition of mTOR pathway regulated by ROS generation. It is also known as a potent cytotoxic sesquiterpene lactone from <i>Inula</i> sp.
Targets(IC50)	Apoptosis, Reactive Oxygen Species, Retinoid Receptor, Autophagy, RAR/RXR, ROS
In vitro	BigV exhibited potential anti-tumor activities against human liver cancer in vitro and in vivo. BigV reduced the cell proliferation and colony formation. BigV induced apoptosis through improving the cleavage of Caspase-3 and poly (ADP-ribose) polymerase 1 (PARP-1). The process was along with the activation of autophagy, as proved by the enhanced accumulation of autophagosomes, the microtubule-associated light chain 3B-II (LC3B-II) and Beclin-1, and p62 decrease. Further, the autophagy blockage markedly sensitized BigV-induced cell death, indicating the cytoprotective function of autophagy in liver cancer cell lines. In addition, BigV treatment inactivated the pathway of protein kinase B (AKT)/mammalian target of rapamycin (mTOR)/ribosomal protein S6 kinase (p70S6K). Of note, BigV-induced cell death was abolished by over-expressing the phosphorylation of mTOR. Intriguingly, the induction of apoptosis and autophagy were eliminated by the pretreatment of reactive oxygen species (ROS) scavenger N-acetyl-L-cysteine (NAC), suggesting that ROS played an important role in the regulation of BigV-induced cell death.
In vivo	In vivo studies demonstrated that BigV significantly suppressed the growth of HepG2 cancer xenograft tumors through the activation of apoptosis and autophagy in a dose-dependent manner with low systemic toxicity. Revealed that BigV had significant antitumor effects against human liver cancer and it may potentially be used as a novel antitumor agent for the prevention of liver cancer.

Solubility Information

Solubility	DMSO: 60 mg/mL (197.15 mM), Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
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In vivo Formulation	10% DMSO+40% PEG300+5% Tween 80+45% Saline: 2 mg/mL (6.57 mM), Sonication is recommended. <i>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.</i>
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Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	3.2858 mL	16.429 mL	32.858 mL
5 mM	0.6572 mL	3.2858 mL	6.5716 mL
10 mM	0.3286 mL	1.6429 mL	3.2858 mL
50 mM	0.0657 mL	0.3286 mL	0.6572 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

Bei Wang, et al. Bigelovin, a sesquiterpene lactone, suppresses tumor growth through inducing apoptosis and autophagy via the inhibition of mTOR pathway regulated by ROS generation in liver cancer. *Biochem Biophys Res Commun.* 2018 May 5;499(2):156-163.

Inhibitor · Natural Compounds · Compound Libraries · Recombinant Proteins

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