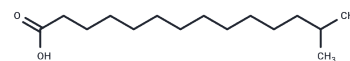


13-Methyltetradecanoic acid

Chemical Properties

CAS No. :	2485-71-4
Formula:	C ₁₅ H ₃₀ O ₂
Molecular Weight:	242.4
Storage:	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	13-Methyltetradecanoic acid (13-MTD) is a saturated branched-chain fatty acid with potent anticancer effects. It induces apoptosis in various human cancer cells, such as bladder cancer and T-cell lymphoma. The pro-apoptotic mechanism is primarily mediated through the mitochondrial pathway, involving the down-regulation of Bcl-2 and up-regulation of Bax, which leads to mitochondrial dysfunction, cytochrome c release, and subsequent proteolytic activation of caspases. Additionally, 13-MTD down-regulates AKT phosphorylation and activates the phosphorylation of p38 and c-Jun N-terminal kinase (JNK).
Targets(IC50)	Apoptosis,Bcl-2 Family,Akt,Mitochondrial Metabolism
In vitro	13-Methyltetradecanoic acid (0-140 µg/mL) dose- and time-dependently inhibits bladder cancer cell proliferation. At 70 µg/mL, it increases the sub-G1 population from 9.25% to 85.3%. Mechanistically, it disrupts the Bcl-2/Bax balance, activates caspases, suppresses AKT, and activates JNK/p38 signaling to promote apoptosis [1].
In vivo	In vivo, 13-Methyltetradecanoic acid (70 mg/kg/day, oral gavage, 30 days) significantly suppresses tumor growth in a Jurkat lymphoma xenograft model using BALB/C nude mice. Research confirms its effective oral antitumor potency, with a mechanism consistent with the in vitro observations of p-AKT inhibition and Caspase-3 activation [2].

Solubility Information

Solubility	Ethanol: 80 mg/mL (330.03 mM) (< 1 mg/ml refers to the product slightly soluble or insoluble)
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Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	4.1254 mL	20.6271 mL	41.2541 mL
5 mM	0.8251 mL	4.1254 mL	8.2508 mL
10 mM	0.4125 mL	2.0627 mL	4.1254 mL
50 mM	0.0825 mL	0.4125 mL	0.8251 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

Tianxin Lin, et al. 13-Methyltetradecanoic acid induces mitochondrial-mediated apoptosis in human bladder cancer cells. *Urol Oncol.* May-Jun 2012;30(3):339-45.

Qingqing Cai, et al. 13-methyltetradecanoic acid exhibits anti-tumor activity on T-cell lymphomas in vitro and in vivo by down-regulating p-AKT and activating caspase-3. *PLoS One.* 2013 Jun 7;8(6):e65308.

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