Myristoleic acid

Cat. No.: HY-113332

CAS No.: 544-64-9

Molecular Formula: $C_{14}H_{26}O_2$

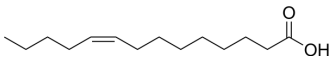
Molecular Weight: 226.36

Target: Apoptosis; Endogenous Metabolite

Pathway: Apoptosis; Metabolic Enzyme/Protease

Storage: -20°C, sealed storage, away from moisture

* In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture)



SOLVENT & SOLUBILITY

In Vitro

DMSO : ≥ 100 mg/mL (441.77 mM)

* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions

Concentration \ Solvent \ Mass	1 mg	5 mg	10 mg
1 mM	4.4177 mL	22.0887 mL	44.1774 mL
5 mM	0.8835 mL	4.4177 mL	8.8355 mL
10 mM	0.4418 mL	2.2089 mL	4.4177 mL

Please refer to the solubility information to select the appropriate solvent.

BIOLOGICAL ACTIVITY

Description

Myristoleic acid, a cytotoxic component in the extract from Serenoa repens, induces apoptosis and necrosis in human prostatic LNCaP cells[1].

IC_{50} & Target

Human Endogenous Metabolite

In Vitro

Myristoleic acid induces both apoptosis (100 μg/mL, 89.5%) and necrosis (100 μg/mL, 81.8%) in LNCaP cells[1].

Myristoleic acid inhibited RANKL-induced osteoclast formation in vitro, especially, at later stages of differentiation[2].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Cell Proliferation Assay[1]

Cell Line:	Human prostatic carcinoma LNCaP cells.
Concentration:	0, 50, 100, 150, 200, 250 μg/mL.
Incubation Time:	24 h.

Result:	When LNCaP cells were treated with 130 μg/mL extract or 100 μg/mL myristoleic acid for 24 hr, the proportion of apoptotic cells was 16.5 and 8.8%, and that of necrotic one was 46.8 and 81.8%, respectively.

In Vivo

Myristoleic acid (2 mg/kg, IP every 24 h for 4 days) prevents RANKL-induced bone loss and osteoclast formation in mice[2].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	C57BL/6 mice at 5 weeks[2].
Dosage:	0.2, 2 mg/kg
Administration:	IP every 24 h for 4 days.
Result:	Co-administration of myristoleic acid suppressed generation of TRAP-positive osteoclasts induced by sRANKL and attenuated the increases in osteoclastic indices of Oc.S/BS, N.Oc/B. Pm and ES/BS in a dose-dependent manner.

REFERENCES

[1]. Xiaoyan Gao, et al. Ozone initiated heterogeneous oxidation of unsaturated carboxylic acids by ATR-FTIR spectroscopy. Spectrochim Acta A Mol Biomol Spectrosc. 2019 May 5;214:177-183.

[2]. Jun-Oh Kwon, et al. Myristoleic acid inhibits osteoclast formation and bone resorption by suppressing the RANKL activation of Src and Pyk2. Eur J Pharmacol. 2015 Dec 5;768:189-98.

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