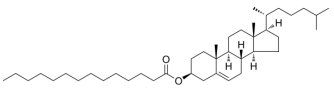
Cholesterol myristate

Cat. No.: HY-N2338

CAS No.: 1989-52-2

Molecular Formula: $C_{41}H_{72}O_2$

Molecular Weight: 597.01



Target: nAChR; GABA Receptor; Potassium Channel; Endogenous Metabolite

Pathway: Membrane Transporter/Ion Channel; Neuronal Signaling; Metabolic Enzyme/Protease

Storage:

Powder	-20°C	3 years
	4°C	2 years
In solvent	-80°C	2 years
	-20°C	1 year

SOLVENT & SOLUBILITY

In Vitro

Ethanol : 3.33 mg/mL (5.58 mM; Need ultrasonic)

H_2O : < 0.1 mg/mL (insoluble)

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	1.6750 mL	8.3751 mL	16.7501 mL
5 mM	0.3350 mL	1.6750 mL	3.3500 mL
10 mM	---	---	---

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

BIOLOGICAL ACTIVITY

Description

Cholesterol myristate is a natural steroid present in traditional Chinese medicine. Cholesterol myristate binds to several ion channels such as the nicotinic acetylcholine receptor, GABAA receptor, and the inward-rectifier potassium ion channel.

IC_{50} & Target

Human Endogenous Metabolite

In Vitro

Mesenchymal stem cells (MSCs) transfected by the Id1 promoter reporter construct, cholesterol myristate increases the activity of Id1 promoter. Cholesterol myristate inhibits the apoptosis of MSCs induced by serum-free. Cholesterol myristate increases the expression of Id1 and its target gene bcl-x/l in MSCs treated with serum-free. Moreover, noggin, a BMP antagonist, reduces the anti-apoptotic effects of cholesterol myristate[1]. Cholesterol myristate inhibits the apoptosis of PC12 cells induced in serum-free condition. Cholesterol myristate significantly increases the expression of BMP4, BMPRIA, p-Smad1/5/8, Id1 and its antiapoptotic target gene Bcl-xL in PC12 cells treated in serum-free condition[1].

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

PROTOCOL

Cell Assay [1]

MSCs are cultured with or without serum in 96-well plates and treated with cholesterol myristate in various concentrations (0, 30 and 300 μg/mL) for 3 days. Each sample is repeated in five independent wells and is incubated for 72 h. After incubation, 20 μL MTT (5 mg/mL) is added and the culture is incubated for a further 4 h. The culture medium is discarded and replaced with 150 μL DMSO. The absorbance at 490nm is measured[1].

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

REFERENCES

[1]. Chen DF, et al. Cholesterol myristate suppresses the apoptosis of mesenchymal stem cells via upregulation of inhibitor of differentiation. Steroids. 2010 Dec 12;75(13-14):1119-26.

[2]. Chen DF, et al. BMP-Id pathway targeted by cholesterol myristate suppresses the apoptosis of PC12 cells. Brain Res. 2011 Jan 7;1367:33-42.

[3]. Levitan I, et al. Cholesterol binding to ion channels. Front Physiol. 2014 Feb 26;5:65.

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