Cholesterol-d_7

Cat. No.: HY-N0322S

CAS No.: 83199-47-7

Molecular Formula: $C_{27}H_{39}D_7O$

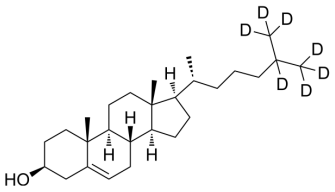
Molecular Weight: 393.7

Target: Estrogen Receptor/ERR; Endogenous Metabolite

Pathway: Vitamin D Related/Nuclear Receptor; Metabolic Enzyme/Protease

Storage:

Powder	-20°C	3 years
In solvent	-80°C	6 months
	-20°C	1 month



SOLVENT & SOLUBILITY

In Vitro

Ethanol : 20 mg/mL (50.80 mM; Need ultrasonic)
Ethanol : 20 mg/mL (50.80 mM; Need ultrasonic and warming)
DMSO : 1 mg/mL (2.54 mM; ultrasonic and warming and heat to 60°C)
DMSO : 1 mg/mL (2.54 mM; ultrasonic and warming and heat to 60°C)

Preparing Stock Solutions

Mass / Solvent / Concentration	1 mg	5 mg	10 mg
1 mM	2.5400 mL	12.7000 mL	25.4001 mL
5 mM	0.5080 mL	2.5400 mL	5.0800 mL
10 mM	0.2540 mL	1.2700 mL	2.5400 mL

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

BIOLOGICAL ACTIVITY

Description

Cholesterol-d_7 is the deuterium labeled Cholesterol. Cholesterol is the major sterol in mammals. It is making up 20-25% of structural component of the plasma membrane. Plasma membranes are highly permeable to water but relatively impermeable to ions and protons. Cholesterol plays an important role in determining the fluidity and permeability characteristics of the membrane as well as the function of both the transporters and signaling proteins[1][2]. Cholesterol is also an endogenous estrogen-related receptor α (ERRα) agonist[3].

In Vitro

Stable heavy isotopes of hydrogen, carbon, and other elements have been incorporated into drug molecules, largely as tracers for quantitation during the drug development process. Deuteration has gained attention because of its potential to affect the pharmacokinetic and metabolic profiles of drugs[1].

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

REFERENCES

[1]. Casaburi I, et al. Cholesterol as an Endogenous ERRα Agonist: A New Perspective to Cancer Treatment. Front Endocrinol (Lausanne). 2018 Sep 11;9:525.

[2]. Dietschy JM, et al. Thematic review series: brain Lipids. Cholesterol metabolism in the central nervous system during early development and in the mature animal. J Lipid Res. 2004 Aug;45(8):1375-97.

[3]. Fukui K, et al. Effect of Cholesterol Reduction on Receptor Signaling in Neurons. J Biol Chem. 2015 Sep 14.

[4]. Russak EM, et al. Impact of Deuterium Substitution on the Pharmacokinetics of Pharmaceuticals. Ann Pharmacother. 2019;53(2):211-216.

Caution: Product has not been fully validated for medical applications. For research use only.

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