Fluvastatin

Cat. No.: HY-14664

CAS No.: 93957-54-1

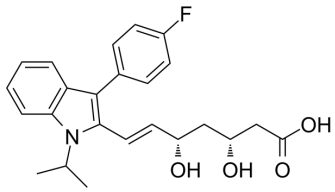
Molecular Formula: $C_{24}H_{26}FNO_4$

Molecular Weight: 411.47

Target: HMG-CoA Reductase (HMGCR); Autophagy

Pathway: Metabolic Enzyme/Protease; Autophagy

Storage: -20°C, stored under nitrogen
* In solvent : -80°C, 6 months; -20°C, 1 month (stored under nitrogen)



SOLVENT & SOLUBILITY

In Vitro

DMSO : 5 mg/mL (12.15 mM; ultrasonic and warming and heat to 60°C)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	2.4303 mL	12.1516 mL	24.3031 mL
	5 mM	0.4861 mL	2.4303 mL	4.8606 mL
	10 mM	0.2430 mL	1.2152 mL	2.4303 mL

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

In Vivo

1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 0.5 mg/mL (1.22 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 0.5 mg/mL (1.22 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Fluvastatin (XU 62-320 free acid) is a first fully synthetic, competitive HMG-CoA reductase inhibitor with an IC_{50} of 8 nM. Fluvastatin protects vascular smooth muscle cells against oxidative stress through the Nrf2-dependent antioxidant pathway [1][2][3].

IC_{50} & Target

IC50: 8 nM (HMG-CoA reductase)[1].

In Vitro

Fluvastatin (XU 62-320 free acid) is a competitive inhibitor of hydroxymethylglutaryl-coenzyme A reductase (HMGCR), the enzyme that catalyzes the conversion of HMG-CoA to mevalonic acid, the rate-limiting step in cholesterol biosynthesis. Human hepatocellular carcinoma cell (HCC) studies indicate that Fluvastatin induces G2/M phase arrest. In the presence of Fluvastatin (XU 62320), HCC cells show a decrease of Bcl-2 and procaspase-9 expression, and an increase in Bax, cleaved caspase-3, and cytochrome c. Fluvastatin (XU 62320) is antilipemic and is used to reduce plasma cholesterol levels and

prevent cardiovascular disease.

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

CUSTOMER VALIDATION

- Chem Eng J. 1 January 2023, 138972.
- Pharmacol Res. 2023 Mar 10;106724.
- Cell Prolif. 2021 Jan;54(1):e12953.
- Front Bioeng Biotechnol. 2022 Mar 17;10:826093.
- Front Cell Dev Biol. 2020 May 28;8:404.

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REFERENCES

[1]. Makabe S, et al. Fluvastatin protects vascular smooth muscle cells against oxidative stress through the Nrf2-dependent antioxidant pathway. Atherosclerosis. 2010 Dec;213(2):377-84.

[2]. Wu Zhang, et al. Fluvastatin, a lipophilic statin, induces apoptosis in human hepatocellular carcinoma cells through mitochondria-operated pathway. Indian J Exp Biol. 2010 Dec;48(12):1167-74.

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