Fluvastatin sodium

Cat. No.: HY-14664A

CAS No.: 93957-55-2

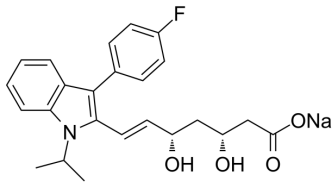
Molecular Formula: $C_{24}H_{25}FNNaO_4$

Molecular Weight: 433.45

Target: HMG-CoA Reductase (HMGCR); Autophagy; Ferroptosis

Pathway: Metabolic Enzyme/Protease; Autophagy; Apoptosis

Storage: 4°C, sealed storage, away from moisture
* In solvent : -80°C, 1 years; -20°C, 6 months (sealed storage, away from moisture)



SOLVENT & SOLUBILITY

In Vitro

H_2O : 50 mg/mL (115.35 mM; Need ultrasonic)
DMSO : 50 mg/mL (115.35 mM; Need ultrasonic)

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	2.3071 mL	11.5354 mL	23.0707 mL
5 mM	0.4614 mL	2.3071 mL	4.6141 mL
10 mM	0.2307 mL	1.1535 mL	2.3071 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: ≥ 2.5 mg/mL (5.77 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (5.77 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (5.77 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Fluvastatin sodium (XU 62320) is a first fully synthetic, competitive HMG-CoA reductase inhibitor with an IC_{50} of 8 nM. Fluvastatin sodium 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 sodium (XU 62320) 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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