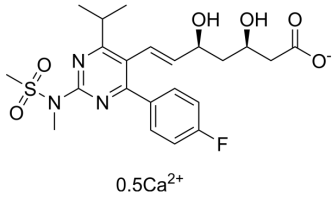
Rosuvastatin Calcium

Cat. No.:	HY-17504
CAS No.:	147098-20-2
Molecular Formula:	$C_{22}H_{27}Ca_{0.5}FN_3O_6S$
Molecular Weight:	500.57
Target:	HMG-CoA Reductase (HMGCR); Autophagy; Potassium Channel; Bacterial
Pathway:	Metabolic Enzyme/Protease; Autophagy; Membrane Transporter/Ion Channel; Anti-infection
Storage:	4°C, sealed storage, away from moisture * In solvent : -80°C, 2 years; -20°C, 1 year (sealed storage, away from moisture)



SOLVENT & SOLUBILITY

In Vitro

DMSO : 25 mg/mL (49.94 mM; Need ultrasonic)
H_2O : 1 mg/mL (2.00 mM; Need ultrasonic)

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	1.9977 mL	9.9886 mL	19.9772 mL
5 mM	0.3995 mL	1.9977 mL	3.9954 mL
10 mM	0.1998 mL	0.9989 mL	1.9977 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: ≥ 2.08 mg/mL (4.16 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.08 mg/mL (4.16 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.08 mg/mL (4.16 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Rosuvastatin Calcium is a competitive HMG-CoA reductase (HMGCR) inhibitor, with an IC_{50} of 11 nM. Rosuvastatin Calcium potently blocks hERG current with an IC_{50} of 195 nM[2]. Rosuvastatin Calcium reduces the expression of the mature hERG and the interaction of heat shock protein 70 (Hsp70) with the hERG protein. Rosuvastatin Calcium effectively lowers low-density lipoprotein (LDL) cholesterol, triglycerides, and C-reactive protein levels[1][2][3].

IC_{50} & Target

IC50: 11 nM (HMG-CoA), 195 nM (hERG)[1][2]

In Vivo	Rosuvastatin Calcium (10 mg/kg, intraperitoneal) prolonges QTc in conscious and unrestraines guinea pigs from 201±1 to 210±2 ms[2]. Rosuvastatin (20 mg/kg/day, for 2 weeks) significantly reduces very low-density lipoproteins Calcium (VLDL) in diabetes mellitus rats induced by Streptozocin[4]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

CUSTOMER VALIDATION

- Acta Pharmacol Sin. 2023 Jan 31.
- Front Bioeng Biotechnol. 2022 Mar 17;10:826093.
- Front Cell Dev Biol. 2022 Mar 3;10:806081.
- Front Cell Dev Biol. 2021 May 6;9:651579.
- Eur J Pharmacol. 2023 Jul 13;955:175911.

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REFERENCES

[1]. Watanabe, M., et al., Synthesis and biological activity of methanesulfonamide pyrimidine- and N-methanesulfonyl pyrrole-substituted 3,5-dihydroxy-6-heptenoates, a novel series of HMG-CoA reductase inhibitors. Bioorg Med Chem, 1997. 5(2): p. 437-44.

[2]. Plante I, et al. Rosuvastatin blocks hERG current and prolongs cardiac repolarization. J Pharm Sci. 2012 Feb;101(2):868-78.

[3]. Feng PF, et al. Intracellular Mechanism of Rosuvastatin-Induced Decrease in Mature hERG Protein Expression on Membrane. Mol Pharm. 2019 Apr 1;16(4):1477-1488.

[4]. Carswell C.I., et al. Rosuvastatin. Drugs, 2002. 62(14): p. 2075-85; discussion 2086-7.

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

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