Olmesartan

Cat. No.: HY-17004

CAS No.: 144689-24-7

Molecular Formula: $C_{24}H_{26}N_6O_3$

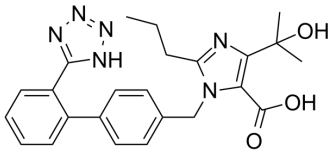
Molecular Weight: 446.5

Target: Angiotensin Receptor

Pathway: GPCR/G Protein

Storage:

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



SOLVENT & SOLUBILITY

In Vitro

DMSO : 20.83 mg/mL (46.65 mM; Need ultrasonic)

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	2.2396 mL	11.1982 mL	22.3964 mL
5 mM	0.4479 mL	2.2396 mL	4.4793 mL
10 mM	0.2240 mL	1.1198 mL	2.2396 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 (5.60 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (5.60 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (5.60 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Olmesartan (RNH-6270) is an angiotensin II receptor (AT1R) antagonist used to treat high blood pressure[1][2].

In Vitro

Olmesartan (0.7-5 mM; 24, 48 and 72 h) inhibits the growth of HeLa cells as a concentration- and time-dependent mode[3].

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

Cell Viability Assay[3]

Cell Line:	Human cervical cancer cell line (HeLa)

Concentration:	0.7- 5 mM
Incubation Time:	24, 48 and 72 h
Result:	IC_{50}s against HeLa cell line are 4.685 and 1.651 mM for 48 and 72 h, respectively.

In Vivo

Repeated dosing of olmesartan (1 mg/kg, 2 mg/kg, p.o.) dose-dependently decreases mean arterial blood pressure (MAP) in SHR without significant influence on body weight and food intake during 10 weeks[1]. Olmesartan (5 mg/kg/d, p.o.) and Hyd treatments lower systolic blood pressure to the same degree in mice. Olmesartan treatment inhibits cardiac hypertrophy, evaluated by echocardiography, heart weight, cross-sectional area of cardiomyocytes, and gene expression. Olmesartan treatment reverses decreased gene expressions of ACE2 and Mas receptor of Ren-Tg mice and inhibits enhanced NADPH oxidase (Nox)4 expression and reactive oxygen species[2].

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

CUSTOMER VALIDATION

- Biomed Pharmacother. 2017 Sep;93:429-434.
- Sleep. 2018 Mar 1;41(3).
- Am J Physiol Cell Physiol. 2021 Nov 24.
- Int J Biochem Cell Biol. 2020 Apr;121:105703.
- Pharm Res. 2024 Mar 14.

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REFERENCES

[1]. Yanagihara H, et al. Effects of telmisartan and olmesartan on insulin sensitivity and renal function in spontaneously hypertensive rats fed a high fat diet. J Pharmacol Sci. 2016 Jul;131(3):190-7.

[2]. Tanno T, et al. Olmesartan Inhibits Cardiac Hypertrophy in Mice Overexpressing Renin Independently of Blood Pressure: Its Beneficial Effects on ACE2/Ang(1-7)/Mas Axis and NADPH Oxidase Expression. J Cardiovasc Pharmacol. 2016 Jun;67(6):503-9.

[3]. Bakhtiari E, et al. Synergistic, cytotoxic and apoptotic activities of olmesartan with NF-κB inhibitor against HeLa human cell line. Toxicol Mech Methods. 2015;25(8):614-21.

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