Aliskiren

Cat. No.: HY-12176

CAS No.: 173334-57-1

Molecular Formula: $C_{30}H_{53}N_3O_6$

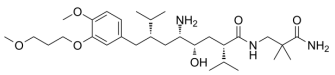
Molecular Weight: 551.76

Target: Renin; Autophagy

Pathway: Metabolic Enzyme/Protease; Autophagy

Storage:

Powder	-20°C	3 years
	4°C	2 years
In solvent	-80°C	6 months
	-20°C	1 month



SOLVENT & SOLUBILITY

In Vitro

Ethanol : 100 mg/mL (181.24 mM; Need ultrasonic)
DMSO : 100 mg/mL (181.24 mM; Need ultrasonic)

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	1.8124 mL	9.0619 mL	18.1238 mL
5 mM	0.3625 mL	1.8124 mL	3.6248 mL
10 mM	0.1812 mL	0.9062 mL	1.8124 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 (4.53 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (4.53 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (4.53 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Aliskiren is an orally active, highly potent and selective renin inhibitor, with IC_{50} of 1.5 nM. Aliskiren can be used for the research of hypertension, cardiovascular diseases and cancer cachexia[1][2][3].

IC_{50} & Target

IC50: 1.5 nM (renin)[1]

In Vivo

Aliskiren (< 10 mg/kg, Orally, daily) inhibits plasma renin activity and lowers blood pressure in sodium-depleted marmosets

[2].

Aliskiren (10 mg/kg, Intragastrically, once) significantly alleviates multiple cachexia‐associated symptoms in BALB/c mice bearing C26 mouse colon carcinoma cells, including BW loss, tumor burden, muscle wasting, muscular dysfunction, and shortened survival[3].

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

CUSTOMER VALIDATION

- Neurobiol Dis. 2014 Nov;71:292-304.
- Lipids Health Dis. 2018 Jul 31;17(1):183.
- Front Biosci-Landmrk. 2023 Oct 17, 28(10), 238.
- Toxicology Research and Application. 2018, 2:239784731880115.
- Toxicology Research and Application. September 25, 2018.

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REFERENCES

[1]. Wang C, et al. Aliskiren targets multiple systems to alleviate cancer cachexia. Oncol Rep. 2016 Nov;36(5):3014-3022.

[2]. Yuji Nakamura, et al. Discovery of DS-8108b, a Novel Orally Bioavailable Renin Inhibitor. ACS Med. Chem. Lett., 2012, 3 (9), pp 754–758

[3]. Buczko W, et al. Pharmacokinetics and pharmacodynamics of aliskiren, an oral direct renin inhibitor. Pharmacol Rep. 2008 Sep-Oct;60(5):623-31.

[4]. Wood JM, et al. Structure-based design of aliskiren, a novel orally effective renin inhibitor.Biochem Biophys Res Commun, 2003, 308(4), 698-705.

[5]. Gradman AH, et al.Aliskiren, a novel orally effective renin inhibitor, provides dose-dependent antihypertensive efficacy and placebo-like tolerability in hypertensive patients. Circulation, 2005, 111(8), 1012-1018.

[6]. Chang AY, et al. Interplay between brain stem angiotensins and monocyte chemoattractant protein-1 as a novel mechanism for pressor response after ischemic stroke. Neurobiol Dis. 2014 Nov;71:292-304.

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