Fosinopril sodium

Cat. No.: HY-B0382

CAS No.: 88889-14-9

Molecular Formula: $C_{30}H_{45}NNaO_7P$

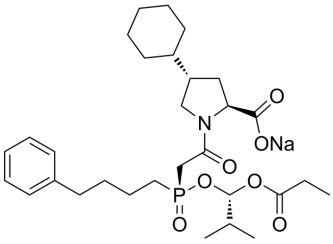
Molecular Weight: 585.64

Target: Angiotensin-converting Enzyme (ACE); Apoptosis

Pathway: Metabolic Enzyme/Protease; Apoptosis

Storage: 4°C, sealed storage, away from moisture

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



SOLVENT & SOLUBILITY

In Vitro

H_2O : 25 mg/mL (42.69 mM; ultrasonic and warming and heat to 60°C)
Ethanol : 16.67 mg/mL (28.46 mM; Need ultrasonic)
DMSO : 1.43 mg/mL (2.44 mM; Need ultrasonic)

Preparing Stock Solutions

Concentration \ Solvent \ Mass	1 mg	5 mg	10 mg
1 mM	1.7075 mL	8.5377 mL	17.0753 mL
5 mM	0.3415 mL	1.7075 mL	3.4151 mL
10 mM	0.1708 mL	0.8538 mL	1.7075 mL

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

In Vivo

1. Add each solvent one by one: PBS
   Solubility: 9.09 mg/mL (15.52 mM); Clear solution; Need ultrasonic

BIOLOGICAL ACTIVITY

Description

Fosinopril Sodium is the ester prodrug of an angiotensin-converting enzyme (ACE) inhibitor, used for the treatment of hypertension and some types of chronic heart failure.

IC_{50} & Target

IC_{50}: 0.18 μM; Ki: 1.675 μM

In Vitro

Fosinopril (0, 1, 10, 33, 100μM; 30 min) partially inhibits the cosedimentation of liposomes and recombinant LPLA2[1].
Fosinopril (250 nM) shows no inhibition of the soluble esterase activity of LPLA2[1].
Fosinopril (0.372, 0.744, 1.116 μM) displays a non-competitive inhibition effect on ACE activity with a K_i value of 1.675 μM[2].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

In Vivo

Fosinopril (orally; 4.67 mg/kg; 4 weeks) downregulates the creatine kinase (CK) and lactate dehydrogenase (LDH) levels and against cardiac dysfunction and structural alteration[3].

Fosinopril (orally; 4.67 mg/kg; 4 weeks) suppresses cleaved-caspase 3 expression and myocardial apoptosis in AMI rat model [3].

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

Animal Model:	HF post-acute myocardial infarction (AMI) rat model (SPF-grade Sprague-Dawley (SD) rats, 265 ± 15 g) [3]
Dosage:	4.67 mg/kg
Administration:	p.o.; 4 weeks
Result:	Against cardiac dysfunction and structural alteration and suppressed apoptosis.

CUSTOMER VALIDATION

- ACS Appl Mater Interfaces. 2023 Oct 4.

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REFERENCES

[1]. Ondetti, M.A., Structural relationships of angiotensin converting-enzyme inhibitors to pharmacologic activity. Circulation, 1988. 77(6 Pt 2): p. I74-8.

[2]. Piepho, R.W., Overview of the angiotensin-converting-enzyme inhibitors. Am J Health Syst Pharm, 2000. 57 Suppl 1: p. S3-7.

[3]. Sharma, S., et al., The hemodynamic effects of long-term ACE inhibition with fosinopril in patients with heart failure. Fosinopril Hemodynamics Study Group. Am J Ther, 1999. 6(4): p. 181-9.

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