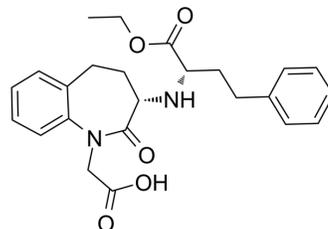


Benazepril

Cat. No.:	HY-B0093		
CAS No.:	86541-75-5		
Molecular Formula:	C ₂₄ H ₂₈ N ₂ O ₅		
Molecular Weight:	424.49		
Target:	Angiotensin-converting Enzyme (ACE)		
Pathway:	Metabolic Enzyme/Protease		
Storage:	Powder	-20°C	3 years
		4°C	2 years
	In solvent	-80°C	6 months
		-20°C	1 month



SOLVENT & SOLUBILITY

In Vitro

DMSO : 100 mg/mL (235.58 mM; Need ultrasonic)

Concentration	Solvent	Mass		
		1 mg	5 mg	10 mg
Preparing Stock Solutions	1 mM	2.3558 mL	11.7788 mL	23.5577 mL
	5 mM	0.4712 mL	2.3558 mL	4.7115 mL
	10 mM	0.2356 mL	1.1779 mL	2.3558 mL

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

In Vivo

- Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
Solubility: 2.5 mg/mL (5.89 mM); Clear solution; Need ultrasonic
- Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
Solubility: 2.5 mg/mL (5.89 mM); Clear solution; Need ultrasonic
- Add each solvent one by one: 10% DMSO >> 90% corn oil
Solubility: 2.5 mg/mL (5.89 mM); Clear solution; Need ultrasonic

BIOLOGICAL ACTIVITY

Description

Benazepril, an angiotensin converting enzyme inhibitor, which is a medication used to treat high blood pressure. Target: angiotensin converting enzyme (ACE). Benazepril is a medication used to treat high blood pressure (hypertension), congestive heart failure, and chronic renal failure. Upon cleavage of its ester group by the liver, benazepril is converted into its active form benazeprilat, a non-sulfhydryl angiotensin-converting enzyme (ACE) inhibitor [1]. Animals were randomly divided into 4 groups: sham STNx group (control), STNx group, morning benazepril group (MB) and evening benazepril group (EB). Benazepril was intragastrically administered at a dose of 10 mg/kg/day at 07:00 and 19:00 in the MB group and EB group respectively for 12 weeks. All the animals were synchronized to the light:dark cycle of 12:12 for 12 weeks. Systolic

blood pressure (SBP), 24-h urinary protein excretion and renal function were measured at 11 weeks. Blood samples and kidneys were collected every 4 h throughout a day to detect the expression pattern of renin activity (RA), angiotensin II (AngII) and aldosterone (Ald) by radioimmunoassay (RIA) and the mRNA expression profile of clock genes (bmal1, dbp and per2) by real-time PCR at 12 weeks. Our results showed that no significant differences were noted in the SBP, 24-h urine protein excretion and renal function between the MB and EB groups. There were no significant differences in average Ald and RA content of a day between the MB group and EB group. The expression peak of bmal1 mRNA was phase-delayed by 4 to 8 h, and the diurnal variation of per2 and dbp mRNA diminished in the MB and EB groups compared with the control and STNx groups. It was concluded when the similar SBP reduction, RAAS inhibition and clock gene profile were achieved with optimal dose of benazepril, morning versus evening dosing of benazepril has the same renoprotection effects [2]. Clinical indications: Congestive heart failure; End stage renal disease; Hypertension FDA Approved Date: Toxicity: headaches; cough; Anaphylaxis; angioedema; hyperkalemia

REFERENCES

- [1]. Hou FF, et al. Efficacy and safety of benazepril for advanced chronic renal insufficiency. *N Engl J Med*. 2006 Jan 12;354(2):131-40.
- [2]. Huang XM, et al. Effects of chronotherapy of benazepril on the diurnal profile of RAAS and clock genes in the kidney of 5/6 nephrectomy rats. *J Huazhong Univ Sci Technolog Med Sci*. 2013 Jun;33(3):368-74.
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Caution: Product has not been fully validated for medical applications. For research use only.

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