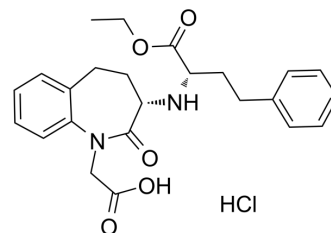


Benazepril hydrochloride

Cat. No.:	HY-B0093A
CAS No.:	86541-74-4
Molecular Formula:	C ₂₄ H ₂₉ ClN ₂ O ₅
Molecular Weight:	460.95
Target:	Angiotensin-converting Enzyme (ACE)
Pathway:	Metabolic Enzyme/Protease
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

DMSO : 100 mg/mL (216.94 mM; Need ultrasonic)
H₂O : 10 mg/mL (21.69 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent Concentration	Mass		
		1 mg	5 mg	10 mg
	1 mM	2.1694 mL	10.8472 mL	21.6943 mL
	5 mM	0.4339 mL	2.1694 mL	4.3389 mL
	10 mM	0.2169 mL	1.0847 mL	2.1694 mL

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

In Vivo

- Add each solvent one by one: PBS
Solubility: 55 mg/mL (119.32 mM); Clear solution; Need ultrasonic
- Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
Solubility: ≥ 2.5 mg/mL (5.42 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
Solubility: ≥ 2.5 mg/mL (5.42 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% corn oil
Solubility: ≥ 2.5 mg/mL (5.42 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Benazepril hydrochloride, an angiotensin converting enzyme inhibitor, which is a medication used to treat high blood pressure. Target: angiotensin converting enzyme (ACE) Benazepril hydrochloride 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 hydrochloride 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 hydrochloride group (MB) and evening benazepril hydrochloride group (EB). Benazepril hydrochloride 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 hydrochloride, morning versus evening dosing of benazepril hydrochloride 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.

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

Tel: 609-228-6898

Fax: 609-228-5909

E-mail: tech@MedChemExpress.com

Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA