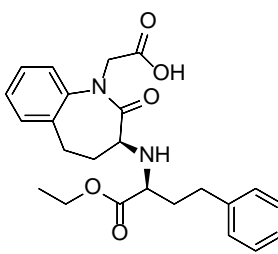


Product data sheet



MedKoo Cat#: 317310 Name: Benazepril hydrochloride CAS#: 86541-74-4 (HCl) Chemical Formula: C ₂₄ H ₂₉ ClN ₂ O ₅ Molecular Weight: 460.95		 H-Cl
Product supplied as:	Powder	
Purity (by HPLC):	≥ 98%	
Shipping conditions	Ambient temperature	
Storage conditions:	Powder: -20°C 3 years; 4°C 2 years. In solvent: -80°C 3 months; -20°C 2 weeks.	

1. Product description:

Benazepril Hydrochloride is the hydrochloride salt of benazepril, a carboxyl-containing angiotensin-converting enzyme (ACE) inhibitor with antihypertensive activity. Benazeprilat competitively binds to and inhibits ACE, thereby blocking the conversion of angiotensin I to angiotensin II. This prevents the potent vasoconstrictive actions of angiotensin II, resulting in vasodilation. Benazeprilat also decreases angiotensin II-induced aldosterone secretion by the adrenal cortex, which leads to an increase in sodium excretion and subsequently increases water outflow. Benazepril hydrochloride reduces blood pressure and myocardial hypertrophy in spontaneous hypertensive rats.

2. CoA, QC data, SDS, and handling instruction

SDS and handling instruction, CoA with copies of QC data (NMR, HPLC and MS analytical spectra) can be downloaded from the product web page under “QC And Documents” section. Note: copies of analytical spectra may not be available if the product is being supplied by MedKoo partners. Whether the product was made by MedKoo or provided by its partners, the quality is 100% guaranteed.

3. Solubility data

Solvent	Max Conc. mg/mL	Max Conc. mM
DMF	30.0	65.08
DMF:PBS (pH 7.2) (1:1)	0.50	1.08
DMSO	64.53	139.99
Ethanol	46.50	100.88
Water	26.03	56.47

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	2.17 mL	10.85 mL	21.69 mL
5 mM	0.43 mL	2.17 mL	4.34 mL
10 mM	0.22 mL	1.08 mL	2.17 mL
50 mM	0.04 mL	0.22 mL	0.43 mL

5. Molarity Calculator, Reconstitution Calculator, Dilution Calculator

Please refer the product web page under section of “Calculator”

6. Recommended literature which reported protocols for in vitro and in vivo study

In vitro study

1. Li H, Wang Y, Zhou Z, Tian F, Yang H, Yan J. Combination of leflunomide and benazepril reduces renal injury of diabetic nephropathy rats and inhibits high-glucose induced cell apoptosis through regulation of NF-κB, TGF-β and TRPC6. Ren Fail. 2019 Nov;41(1):899-906. doi: 10.1080/0886022X.2019.1665547. PMID: 31552773; PMCID: PMC6764370.

In vivo study

1. Xue L, Feng X, Wang C, Zhang X, Sun W, Yu K. Benazepril hydrochloride improves diabetic nephropathy and decreases proteinuria by decreasing ANGPTL-4 expression. BMC Nephrol. 2017 Oct 4;18(1):307. doi: 10.1186/s12882-017-0724-1. PMID: 28978304; PMCID: PMC5628429.

7. Bioactivity

Product data sheet



Biological target: Benazepril hydrochloride is an angiotensin converting enzyme inhibitor.

In vitro activity

The effects of combination use of leflunomide and benazepril on diabetic nephropathy (DN) were investigated in vitro. Rat glomerular mesangial cells (RMCs) were treated with high-glucose (150 mg/ml) and the leflunomide and benazepril with both concentrations of 50 $\mu\text{mol/l}$ were used to treat the high-glucose induced cells. Treatment of leflunomide and benazepril significantly reduced expression levels of NF- κB , TGF- β and TRPC6 in high-glucose induced RMCs. It was also observed that leflunomide and benazepril reduced high-glucose induced cell apoptosis of RMCs.

Reference: Ren Fail. 2019 Nov;41(1):899-906. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6764370/>

In vivo activity

The effects of benazepril hydrochloride (BH) on proteinuria and ANGPTL-4 expression were evaluated in a diabetic nephropathy (DN) rat model. A total of 72 Wistar male rats were randomly divided into three groups: normal control (NC), DN group and BH treatment (BH) groups. Weight was significantly lower but glucose levels were significantly higher in both the DN and BH groups than in the NC group ($P < 0.05$). Compared with the DN group, proteinuria, urea, creatinine, triglycerides and total cholesterol levels were decreased, whereas the albumin level was increased after BH treatment (all $P < 0.05$). Furthermore, BH diminished kidney volume and ameliorated the pathological changes associated with DN. ANGPTL-4 expression was significantly decreased after BH treatment, and ANGPTL-4 expression was highly correlated with biochemical indicators of DN ($P < 0.05$). These results suggest that benazepril hydrochloride improves DN and decreases proteinuria by decreasing ANGPTL-4 expression.

Reference: BMC Nephrol. 2017 Oct 4;18(1):307. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5628429/>

Note: The information listed here was extracted from literature. MedKoo has not independently retested and confirmed the accuracy of these methods. Customer should use it just for a reference only.