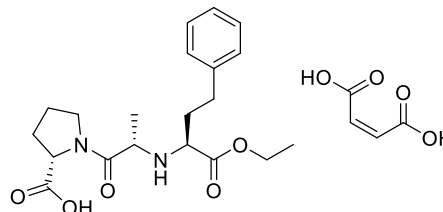


Product data sheet



MedKoo Cat#: 317770 Name: Enalapril Maleate CAS#: 76095-16-4 (maleate) Chemical Formula: C ₂₄ H ₃₂ N ₂ O ₉ Molecular Weight: 492.52	
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:

Enalapril maleate is an effective and potent angiotensin-converting enzyme inhibitor that is used to treat hypertension and heart failure. The compound has been used to study diabetic angiopathy in diabetic rats and inhibition of ACE in hog plasma. ACE inhibitors disturb the renin-angiotensin-aldosterone system. As a prodrug, enalapril is converted by de-esterification into its active form enalaprilat. Enalaprilat 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 and results in vasodilation. Enalapril also decreases angiotensin II-induced aldosterone secretion by the adrenal cortex, which leads to an increase in sodium excretion and subsequently increases water outflow.

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
DMSO	37.5	76.14
DMF	15.0	30.46
Ethanol	0.25	0.51
PBS (pH 7.2)	1.0	2.03
Water	33.33	67.67

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	2.03 mL	10.15 mL	20.30 mL
5 mM	0.41 mL	2.03 mL	4.06 mL
10 mM	0.20 mL	1.02 mL	2.03 mL
50 mM	0.04 mL	0.20 mL	0.41 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. Laham HZ, Khabour OF, Alzoubi KH, Sadiq MF. Enalapril protect human lymphocytes from genotoxicity of Hydrochlorothiazide. Pak J Pharm Sci. 2019 Nov;32(6):2667-2671. PMID: 31969300.
2. Lee C, Chun J, Hwang SW, Kang SJ, Im JP, Kim JS. Enalapril inhibits nuclear factor-κB signaling in intestinal epithelial cells and peritoneal macrophages and attenuates experimental colitis in mice. Life Sci. 2014 Jan 24;95(1):29-39. doi: 10.1016/j.lfs.2013.11.005. Epub 2013 Nov 15. PMID: 24239644.

In vivo study

1. Moraes DS, Lelis DF, Andrade JMO, Meyer L, Guimarães ALS, De Paula AMB, Farias LC, Santos SHS. Enalapril improves obesity associated liver injury ameliorating systemic metabolic markers by modulating Angiotensin Converting Enzymes ACE/ACE2

Product data sheet



expression in high-fat feed mice. Prostaglandins Other Lipid Mediat. 2021 Feb;152:106501. doi: 10.1016/j.prostaglandins.2020.106501. Epub 2020 Oct 10. PMID: 33049402.

2. Ma H, Zhang Q, Shi J, Gao Y, Sun C, Zhang W. Enalapril inhibits inflammatory osteolysis induced by wear debris in a mouse model. J Int Med Res. 2020 Jun;48(6):300060520931612. doi: 10.1177/0300060520931612. PMID: 32552231; PMCID: PMC7303775.

7. Bioactivity

Biological target:

Enalapril (maleate) (MK-421 (maleate)), the active metabolite of enalapril, is an angiotensin-converting enzyme (ACE) inhibitor.

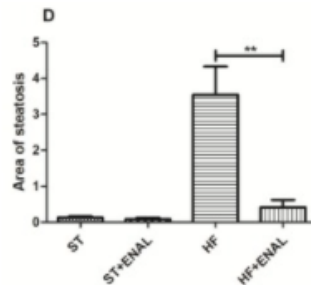
In vitro activity

Enalapril significantly inhibited LPS-induced I κ B α phosphorylation/degradation, NF- κ B binding activity, and pro-inflammatory cytokine production in both IEC and peritoneal macrophages. The administration of enalapril significantly reduced the severity of colitis, as assessed based on histology in both murine colitis models. Furthermore, in colon tissue, the up-regulation of I κ B α phosphorylation with colitis induction was attenuated in enalapril-treated mice.

Reference: Life Sci. 2014 Jan 24;95(1):29-39. <https://pubmed.ncbi.nlm.nih.gov/24239644/>

In vivo activity

Enalapril (ENAL) was efficient in decreasing steatosis in mice fed a hyperlipidemic diet, histological observation of hepatic tissue showed a considerable increase of dispersed fat droplets in the liver of HF animals and a statistically significant lower mean in the HF + ENAL group ($p = 0.0123$) (Fig. 3D; E).



Reference: Prostaglandins Other Lipid Mediat. 2021 Feb;152:106501. <https://pubmed.ncbi.nlm.nih.gov/33049402/>

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.