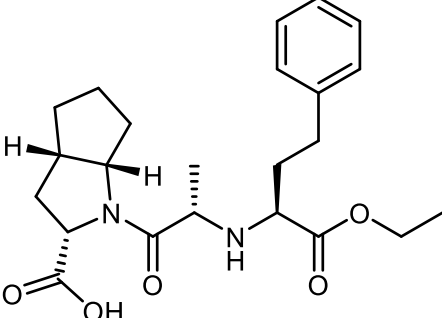


# Product data sheet



MedKoo Cat#: 318650 Name: Ramipril CAS: 87333-19-5 Chemical Formula: C <sub>23</sub> H <sub>32</sub> N <sub>2</sub> O <sub>5</sub> Exact Mass: 416.2311 Molecular Weight: 416.51	
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.

## Product description:

Ramipril, also known as HOE-498, is an inhibitor of the angiotensin- converting enzyme (ACE) that is reported to quickly hydrolyze into its active metabolite, Ramiprilat.

## 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
Water	1	2.40

## 4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	2.40 mL	12.00 mL	24.01 mL
5 mM	0.48 mL	2.40 mL	4.80 mL
10 mM	0.24 mL	1.20 mL	2.40 mL
50 mM	0.05 mL	0.24 mL	0.48 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

- Kohlstedt K, Brandes RP, Müller-Esterl W, Busse R, Fleming I. Angiotensin-converting enzyme is involved in outside-in signaling in endothelial cells. *Circ Res.* 2004 Jan 9;94(1):60-7. doi: 10.1161/01.RES.0000107195.13573.E4. Epub 2003 Nov 13. PMID: 14615289.
- Ceconi C, Francolini G, Bastianon D, Gitti GL, Comini L, Ferrari R. Differences in the effect of angiotensin-converting enzyme inhibitors on the rate of endothelial cell apoptosis: in vitro and in vivo studies. *Cardiovasc Drugs Ther.* 2007 Dec;21(6):423-9. doi: 10.1007/s10557-007-6068-5. Epub 2007 Nov 15. PMID: 18004652.

### In vivo study

- Ateya AM, El Hakim I, Shahin SM, El Borolossy R, Kreutz R, Sabri NA. Effects of Ramipril on Biomarkers of Endothelial Dysfunction and Inflammation in Hypertensive Children on Maintenance Hemodialysis: the SEARCH Randomized Placebo-Controlled Trial. *Hypertension.* 2022 Aug;79(8):1856-1865. doi: 10.1161/HYPERTENSIONAHA.122.19312. Epub 2022 Jun 10. PMID: 35686561.
- Bouchenaki H, Bernard A, Bessaguet F, Frachet S, Richard L, Sturtz F, Magy L, Bourthoumiou S, Demiot C, Danigo A. Neuroprotective Effect of Ramipril Is Mediated by AT2 in a Mouse MODEL of Paclitaxel-Induced Peripheral Neuropathy. *Pharmaceutics.* 2022 Apr 12;14(4):848. doi: 10.3390/pharmaceutics14040848. PMID: 35456682; PMCID: PMC9030366.

## 7. Bioactivity

# Product data sheet



## Biological target:

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Ramipril is an ACE inhibitor with IC50 of 5 nM. Ramipril enhances the activity of ACE-associated CK2 and the phosphorylation of ACE Ser1270 in cultured endothelial cell. Prolonged Ramipril treatment increases ACE expression in primary cultures of human endothelial cells and in vivo (mouse lung).

## In vitro activity

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Prolonged ramiprilat treatment increased ACE expression in primary cultures of human endothelial cells and in vivo (mouse lung), a response that was prevented by pretreatment with the JNK inhibitor SP600125. ACE is involved in outside-in signaling in endothelial cells.

Reference: Circ Res. 2004 Jan 9;94(1):60-7. <https://pubmed.ncbi.nlm.nih.gov/14615289/>

## In vivo activity

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Ramipril prevented the functional and morphological alterations in paclitaxel mice. This work highlights the potential of ramipril as a novel preventive treatment for paclitaxel-induced peripheral neuropathy, and suggests there is involvement of angiotensin II type 2 receptor in the neuroprotective role of ramipril in paclitaxel-induced peripheral neuropathy.

Reference: Pharmaceutics. 2022 Apr 12;14(4):848. <https://pubmed.ncbi.nlm.nih.gov/35456682/>

*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.*