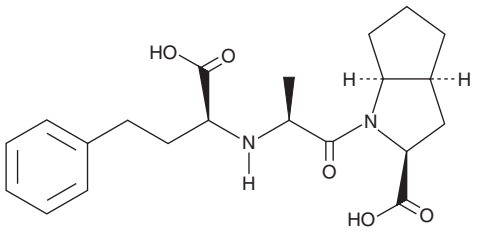
PRODUCT INFORMATION

Ramiprilat

Item No. 15557

CAS Registry No.:	87269-97-4
Formal Name:	(2S,3aS,6aS)-1-[(2S)-2-[[(1S)-1-carboxy-3-phenylpropyl]amino]-1-oxopropyl]octahydro-cyclopenta[b]pyrrole-2-carboxylic acid
Synonym:	Ramipril Diacid
MF:	$C_{21}H_{28}N_2O_5$
FW:	388.5
Purity:	≥98%
Supplied as:	A crystalline solid
Storage:	-20°C
Stability:	≥4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

Ramiprilat is supplied as a crystalline solid. A stock solution may be made by dissolving the ramiprilat in the solvent of choice, which should be purged with an inert gas. Ramiprilat is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of ramiprilat in ethanol is approximately 1 mg/ml and approximately 30 mg/ml in DMSO and DMF.

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. Organic solvent-free aqueous solutions of ramiprilat can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of ramiprilat in PBS (pH 7.2) is approximately 10 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

Ramiprilat is the active metabolite of ramipril (Item No. 15558) and functions as an angiotensin-converting enzyme inhibitor (pK_i = 9.08 in human heart) to suppress the conversion of angiotensin I to angiotensin II and the degradation of bradykinin, thereby preventing vasoconstriction.[1,2] Furthermore, ramiprilat is reported to interfere with the targeting of B_2 kinin receptors to endothelial cell membranes further preventing bradykinin signaling.[2] In addition to its cardioprotective effects in both animal models and clinical studies, ramiprilat has been reported to inhibit matrix metalloproteinase-3 and -9 activity in isolated Crohn's disease fistulas.[3,4]

References

1. Vago, T., Bevilacqua, M., Conci, F., *et al.* Angiotensin converting enzyme binding sites in human heart and lung: Comparison with rat tissues. *Br. J. Pharmacol.* **107(3)**, 821-825 (1992).
2. Benzing, T., Fleming, I., Blaukat, A., *et al.* Angiotensin-converting enzyme inhibitor ramiprilat interferes with the sequestration of the B_2 kinin receptor within the plasma membrane of native endothelial cells. *Circulation* **99(15)**, 2034-2040 (1999).
3. Yusuf, S., Sleight, P., Pogue, J., *et al.* Effects of an angiotensin-converting-enzyme inhibitor, ramipril, on cardiovascular events in high-risk patients. *N. Engl. J. Med.* **342(3)**, 145-153 (2000).
4. Efsen, E., Sørmark, T., Hansen, A., *et al.* Ramiprilate inhibits functional matrix metalloproteinase activity in Crohn's disease fistulas. *Basic Clin. Pharmacol. Toxicol.* **109(3)**, 208-216 (2011).

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