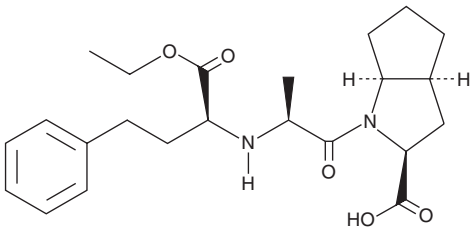
PRODUCT INFORMATION

Ramipril

Item No. 15558

CAS Registry No.: 87333-19-5
Formal Name: (2S,3aS,6aS)-1-[(2S)-2-[[(1S)-1-(ethoxycarbonyl)-3-phenylpropyl]amino]-1-oxopropyl]octahydrocyclopenta[b]pyrrole-2-carboxylic acid
Synonym: HOE 498
MF: $C_{23}H_{32}N_2O_5$
FW: 416.5
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

Ramipril is supplied as a crystalline solid. A stock solution may be made by dissolving the ramipril in the solvent of choice, which should be purged with an inert gas. Ramipril is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of ramipril in ethanol is approximately 25 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 ramipril can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of ramipril in PBS (pH 7.2) is approximately 0.2 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

Ramipril is a prodrug form of the angiotensin-converting enzyme (ACE) inhibitor ramiprilat (Item No. 15557).[1] Ramipril (2.5 mg/kg per day, p.o.) reduces systolic blood pressure in spontaneously hypertensive rats.[2] It reduces aortic valve backscatter and improves aortic flow in a rabbit model of aortic valve stenosis.[3] Ramipril also decreases paw swelling and serum levels of TNF-α and prostaglandin E_2 (PGE_2) as well as cardiac collagen deposition and fibrosis in a rat model of adjuvant-induced arthritis.[4]

References

1. Leung, D., Abbenante, G., and Fairlie, D.P. Protease inhibitors: Current status and future prospects. *J. Med. Chem.* **43(3)**, 305-341 (2000).
2. Cachofeiro, V., Maeso, R., Rodrigo, E., *et al.* Nitric oxide and prostaglandins in the prolonged effects of losartan and ramipril in hypertension. *Hypertension* **26(2)**, 236-243 (1995).
3. Ngo, D.T., Stafford, I., Sverdlov, A.L., *et al.* Ramipril retards development of aortic valve stenosis in a rabbit model: Mechanistic considerations. *Br. J. Pharmacol.* **162(3)**, 722-732 (2011).
4. Shi, Q., Abusarah, J., Baroudi, G., *et al.* Ramipril attenuates lipid peroxidation and cardiac fibrosis in an experimental model of rheumatoid arthritis. *Arthritis Res. Ther.* **14(5)**, R223 (2012).

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