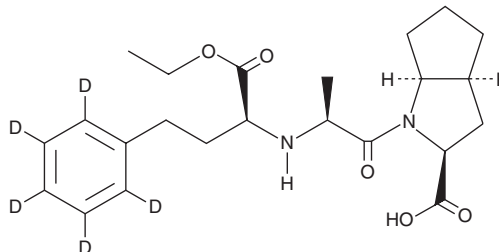


# PRODUCT INFORMATION



## Ramipril-d<sub>5</sub> Item No. 25425

**CAS Registry No.:** 1132661-86-9  
**Formal Name:** (2S,3aS,6aS)-1-[(2S)-2-[[[(1S)-1-(ethoxycarbonyl)-3-(phenyl-2,3,4,5,6-d<sub>5</sub>)propyl]amino]-1-oxopropyl]octahydrocyclopenta[b]pyrrole-2-carboxylic acid  
**MF:** C<sub>23</sub>H<sub>27</sub>D<sub>5</sub>N<sub>2</sub>O<sub>5</sub>  
**FW:** 421.5  
**Chemical Purity:** ≥98% (Ramipril)  
**Deuterium Incorporation:** ≥99% deuterated forms (d<sub>1</sub>-d<sub>5</sub>); ≤1% d<sub>0</sub>  
**Supplied as:** A 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-d<sub>5</sub> is intended for use as an internal standard for the quantification of ramipril (Item No. 15558) by GC- or LC-MS. The accuracy of the sample weight in this vial is between 5% over and 2% under the amount shown on the vial. If better precision is required, the deuterated standard should be quantitated against a more precisely weighed unlabeled standard by constructing a standard curve of peak intensity ratios (deuterated versus unlabeled).

Ramipril-d<sub>5</sub> is supplied as a solid. A stock solution may be made by dissolving the ramipril-d<sub>5</sub> in the solvent of choice, which should be purged with an inert gas. Ramipril-d<sub>5</sub> is slightly soluble in chloroform and methanol.

### Description

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

### 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).

#### WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

#### SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

#### WARRANTY AND LIMITATION OF REMEDY

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