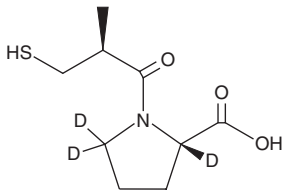
PRODUCT INFORMATION

Captopril-d_3

Item No. 25235

CAS Registry No.: 1356383-38-4
Formal Name: (S)-1-((S)-3-mercapto-2-methylpropanoyl) pyrrolidine-2-carboxylic-2,5,5-d_3 acid
MF: $C_9H_{12}D_3NO_3S$
FW: 220.3
Chemical Purity: ≥98% (Captopril)
Deuterium Incorporation: ≥99% deuterated forms (d_1-d_3); ≤1% d_0
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

Captopril-d_3 is intended for use as an internal standard for the quantification of captopril (Item No. 15313) 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).

Captopril-d_3 is supplied as a solid. A stock solution may be made by dissolving the captopril-d_3 in the solvent of choice, which should be purged with an inert gas. Captopril-d_3 is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide. The solubility of captopril-d_3 in these solvents is approximately 30 mg/ml.

Description

Captopril is a first generation nonpeptidic ACE inhibitor (IC_{50} = 6.3 nM) that was designed based on bradykinin-potentiating peptides isolated from the venom of *B. jararaca*, a pit viper native to Brazil. [1-3] It does not exhibit a domain preference for binding either the C- or N-terminal active sites of the somatic form of ACE.[1] Acute and chronic administration of captopril reduces blood pressure in spontaneously hypertensive Wistar-Kyoto rats and does not induce hypotension in salt-repleted normotensive Wistar-Kyoto rats.[4] Captopril is also a competitive and reversible inhibitor of leukotriene (LTA_4) hydrolase, which results in the disruption of LTB_4 synthesis with an IC_{50} value of 14 µM.[5]

References

1. Dalkas, G.A., Marchand, D., Galleyrand, J.C., *et al.* Study of a lipophilic captopril analogue binding to angiotensin I converting enzyme. *J. Pept. Sci.* **16(2)**, 91-97 (2010).
2. Redelinghuys, P., Nchinda, A.T., and Sturrock, E.D. Development of domain-selective angiotensin I-converting enzyme inhibitors. *Ann. N.Y. Acad. Sci* **1056(1)**, 160-175 (2005).
3. Cushman, D.W. and Ondetti, M.A. Design of angiotensin converting enzyme inhibitors. *Nat. Med.* **5(10)**, 1110-1113 (1999).
4. Rubin, B., Antonaccio, M.J., and Horovitz, Z.P. Captopril (SQ 14,225) (D-3-mercapto-2-methylpropranoyl-L-proline): A novel orally active inhibitor of angiotensin-converting enzyme and antihypertensive agent. *Prog. Cardiovasc. Dis.* **21(3)**, 183-194 (1978).
5. Orning, L., Krivi, G., Bild, G., *et al.* Inhibition of leukotriene A_4 hydrolase/aminopeptidase by captopril. *J. Biol. Chem.* **266(25)**, 16507-16511 (1991).

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