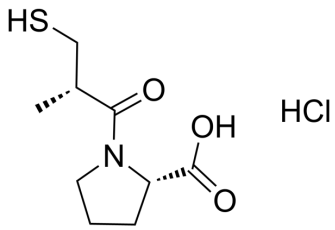
Captopril hydrochloride

Cat. No.:	HY-B0368A
CAS No.:	198342-23-3
Molecular Formula:	$C_9H_{16}ClNO_3S$
Molecular Weight:	253.75
Target:	Angiotensin-converting Enzyme (ACE)
Pathway:	Metabolic Enzyme/Protease
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.



BIOLOGICAL ACTIVITY

Description	Captopril (SQ 14225) hydrochloride, antihypertensive agent, is a thiol-containing competitive, orally active angiotensin-converting enzyme (ACE) inhibitor (IC_{50}=0.025 μM) and has been widely used for research of hypertension and congestive heart failure. Captopril hydrochloride is also a New Delhi metallo-β-lactamase-1 (NDM-1) inhibitor with an IC_{50} of 7.9 μM[1][2][3].
IC_{50} & Target	ACE[1]
In Vitro	Captopril (SQ 14225) hydrochloride has been shown to have similar morbidity and mortality benefits to those of diuretics and beta-blockers in hypertensive patients. Captopril hydrochloride has been shown to delay the progression of diabetic nephropathy, and enalapril and lisinopril prevent the development of nephropathy in normoalbuminuric patients with diabetes[4]. An equimolar ratio of the cis and trans states of Captopril hydrochloride exists in solution and that the enzyme selects only the trans state of the inhibitor that presents architectural and stereoelectronic complementarity with its substrate binding groove[5]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

CUSTOMER VALIDATION

- Nat Commun. 2023 May 2;14(1):2523.
- Phytomedicine. 2023 Sep 23, 155118.
- Eur J Med Chem. 13 January 2022, 114121.
- Mar Drugs. 2023 Sep 29, 21(10), 522.
- J Cell Mol Med. 2022 Jul 21.

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REFERENCES

[1]. Afrin S, et al. Eritadenine from Edible Mushrooms Inhibits Activity of Angiotensin Converting Enzyme in Vitro. J Agric Food Chem. 2016;64(11):2263-2268.

[2]. Esmaeili S, et al. Captopril/enalapril inhibit promiscuous esterase activity of carbonic anhydrase at micromolar concentrations: An in vitro study. Chem Biol Interact. 2017;265:24-35.

[3]. Li N, et al. Simplified captopril analogues as NDM-1 inhibitors. Bioorg Med Chem Lett. 2014;24(1):386-389.

[4]. Tzakos, A.G., et al., The molecular basis for the selection of captopril cis and trans conformations by angiotensin I converting enzyme. Bioorg Med Chem Lett, 2006. 16(19): p. 5084-7.

[5]. Song, J.C. and C.M. White, Clinical pharmacokinetics and selective pharmacodynamics of new angiotensin converting enzyme inhibitors: an update. Clin Pharmacokinet, 2002. 41(3): p. 207-24.

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