

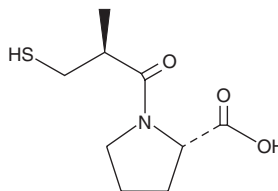
# PRODUCT INFORMATION



## Captopril

Item No. 15313

**CAS Registry No.:** 62571-86-2  
**Formal Name:** 1-[(2S)-3-mercapto-2-methyl-1-oxopropyl]-L-proline  
**Synonyms:** SA 333, SQ 14,225  
**MF:** C<sub>9</sub>H<sub>15</sub>NO<sub>3</sub>S  
**FW:** 217.3  
**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

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

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 captopril can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of captopril in PBS, pH 7.2, is approximately 3 mg/ml. We do not recommend storing the aqueous solution for more than one day.

### Description

Captopril is an inhibitor of angiotensin-converting enzyme (ACE; IC<sub>50</sub> = 23 nM for the rabbit lung enzyme).<sup>1,2</sup> It inhibits contractions in isolated guinea pig ileal segments induced by angiotensin I or bradykinin (IC<sub>50</sub>s = 23 and 3 nM, respectively) but not those induced by angiotensin II, histamine, acetylcholine, serotonin (5-HT), or prostaglandin E<sub>1</sub> (PGE<sub>1</sub>; IC<sub>50</sub>s = >10 μM for all).<sup>2</sup> Captopril (0.1-1 mg/kg) inhibits angiotensin I-induced pressor responses in conscious normotensive rats.<sup>1</sup> It reduces mean blood pressure in two kidney-one clip renal hypertensive (2K-1C) rats and spontaneously hypertensive rats (SHRs). Captopril also reduces cytopathogenicity induced by herpes simplex virus 1 (HSV-1) in SH-SY5Y human neuroblastoma cells.<sup>3</sup> Formulations containing captopril have been used in the treatment of hypertension, congestive heart failure, and diabetic nephropathy.

### References

1. Rubin, B., Antonaccio, M.J., and Horovitz, Z.P. Captopril (SQ 14,225) (D-3-mercapto-2-methylpropanoyl-L-proline): A novel orally active inhibitor of angiotensin-converting enzyme and antihypertensive agent. *Prog. Cardiovasc. Dis.* **21(3)**, 183-194 (1978).
2. DeForrest, J.M., Waldron, T.L., Krapcho, J., et al. Preclinical pharmacology of zofenopril, an inhibitor of angiotensin I converting enzyme. *J. Cardiovasc. Pharmacol.* **13(6)**, 887-894 (1989).
3. Wofford, A., Merritt, J., Jackson, C.A., et al. Abstract P630: Captopril reduces cytopathic effects in herpes simplex virus 1 (HSV-1) Infected SH-SY5Y cells. *Hypertension* **66**, (2015).

#### 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

Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

Copyright Cayman Chemical Company, 11/16/2022

#### CAYMAN CHEMICAL

1180 EAST ELLSWORTH RD  
ANN ARBOR, MI 48108 · USA

**PHONE:** [800] 364-9897  
[734] 971-3335

**FAX:** [734] 971-3640

CUSTSERV@CAYMANCHEM.COM  
WWW.CAYMANCHEM.COM