

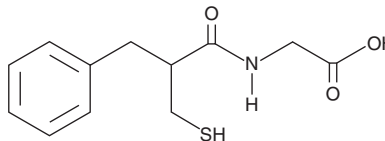
PRODUCT INFORMATION



Thiorphan

Item No. 15600

CAS Registry No.: 76721-89-6
Formal Name: N-[2-(mercaptomethyl)-1-oxo-3-phenylpropyl]-glycine
Synonym: DL-Thiorphan
MF: C₁₂H₁₅NO₃S
FW: 253.3
Purity: ≥95%
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

Thiorphan is supplied as a crystalline solid. A stock solution may be made by dissolving the thiorphan in the solvent of choice, which should be purged with an inert gas. Thiorphan is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide. The solubility of thiorphan 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 thiorphan can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of thiorphan in PBS (pH 7.2) is approximately 0.5 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

Thiorphan is an inhibitor of neprilysin (NEP; IC₅₀ = 0.007 μM).¹ It selectively inhibits NEP over NEP2 (IC₅₀ = 22 μM), as well as angiotensin-converting enzyme (ACE) and endothelin-converting enzyme 1 (ECE1; K_is = >0.1 and >10 μM, respectively, in cell-free assays).^{1,2} Thiorphan (10 μM) increases bradykinin-induced relaxation of isolated porcine coronary artery rings precontracted with potassium chloride under hypoxic, but not normoxic, conditions.³ Thiorphan reduces increases in gastric acid output induced by pentagastrin (Item No. 28546) by 64% in rats when administered intracerebroventricularly at a dose of 50 μg, but not when administered intravenously at doses of 1.7 and 17 mg/kg.⁴ Thiorphan (2 mg/ml, i.c.v.) increases cortical levels of insoluble amyloid-β (1-40) (Aβ40) and decreases time spent in the platform quadrant in the Morris water maze, indicating impaired reference memory, in rats.⁵

References

1. Whyteside, A.R. and Turner, A.J. *FEBS Lett.* **582(16)**, 2382-2386 (2008).
2. Inguibert, N., Coric, P., Poras, H., et al. *J. Med. Chem.* **45(7)**, 1477-1486 (2002).
3. Krassó, I., Pataricza, J., and Papp, J.G. *J. Pharm. Pharmacol.* **55(3)**, 339-345 (2003).
4. Chicau-Chover, M., Dubrasquet, M., Chariot, J., et al. *Eur. J. Pharmacol.* **154(3)**, 247-254 (1998).
5. Mouri, A., Zou, L.B., Iwata, N., et al. *Behav. Brain Res.* **168(1)**, 83-91 (2006).

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, 10/03/2022

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