

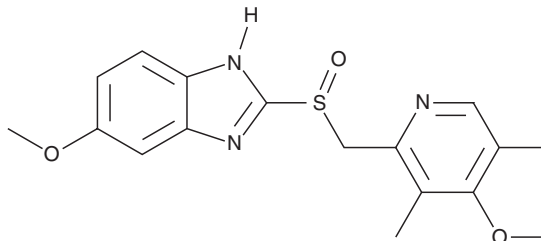
PRODUCT INFORMATION



Omeprazole

Item No. 14880

CAS Registry No.: 73590-58-6
Formal Name: 6-methoxy-2-[[[(4-methoxy-3,5-dimethyl-2-pyridinyl)methyl]sulfinyl]-1H-benzimidazole
Synonyms: OMEP, OMP, OMZ
MF: C₁₇H₁₉N₃O₃S
FW: 345.4
Purity: ≥98%
UV/Vis.: λ_{max}: 302 nm
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

Omeprazole is supplied as a crystalline solid. A stock solution may be made by dissolving the omeprazole in the solvent of choice. Omeprazole is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF), which should be purged with an inert gas. The solubility of omeprazole in ethanol is approximately 5 mg/ml and approximately 30 mg/ml in DMSO and DMF.

Omeprazole is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, omeprazole should first be dissolved in DMSO and then diluted with the aqueous buffer of choice. Omeprazole has a solubility of approximately 0.5 mg/ml in a 1:1 solution of DMSO:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

Omeprazole is an inhibitor of gastric H⁺/K⁺ ATPase (IC₅₀ = 1.1 μM for the pig ATPase).¹ It is a racemic mixture of esomeprazole (Item No. 17303) and (R)-omeprazole (Item No. 18874).² Omeprazole (100 μM) decreases zymosan-induced oxygen free radical production in isolated human neutrophils.³ It is active against 17 strains of *H. pylori* (MIC₅₀s = 12.5-50 μg/ml).⁵ It decreases histamine-induced acid secretion in dogs (ED₅₀ = 0.35 μmol/kg).⁴ Formulations containing omeprazole have been used in the treatment of duodenal and gastric ulcers, gastroesophageal reflux disease, and erosive esophagitis.

References

1. Smolka, A.J., Goldenring, J.R., Gupta, S., *et al.* Inhibition of gastric H,K-ATPase activity and gastric epithelial cell IL-8 secretion by the pyrrolizine derivative ML 3000. *BMC Gastroenterol.* **4**(4), 1-11 (2004).
2. Lind, T., Rydberg, L., Kylebäck, A., *et al.* Esomeprazole provides improved acid control vs. omeprazole in patients with symptoms of gastro-oesophageal reflux disease. *Aliment. Pharmacol. Ther.* **14**(7), 861-867 (2000).
3. Suzuki, M., Mori, M., Miura, S., *et al.* Omeprazole attenuates oxygen-derived free radical production from human neutrophils. *Free Radic. Biol. Med.* **21**(5), 727-731 (1996).
4. Larsson, H., Carlsson, E., Junggren, U., *et al.* Inhibition of gastric acid secretion by omeprazole in the dog and rat. *Gastroenterology* **85**(4), 900-907 (1983).
5. Iwahi, T., Satoh, H., Nakao, M., *et al.* Lansoprazole, a novel benzimidazole proton pump inhibitor, and its related compounds have selective activity against *Helicobacter pylori*. *Antimicrob. Agents Chemother.* **35**(3), 490-496 (1991).

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, 07/07/2023

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