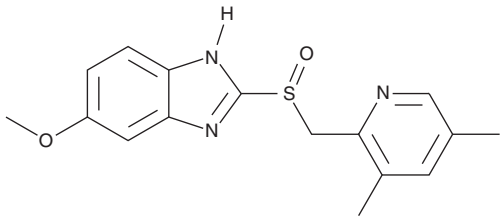
PRODUCT INFORMATION

4-desmethoxy Omeprazole

Item No. 22122

CAS Registry No.: 110374-16-8
Formal Name: 2-[[(3,5-dimethyl-2-pyridinyl)methyl]sulfinyl]-6-methoxy-1H-benzimidazole
Synonyms: 4-desmethoxy OMEP, 4-desmethoxy OMP, 4-desmethoxy OMZ, Esomeprazol Magnesium Impurity B, Omeprazole EP Impurity B
MF: $C_{16}H_{17}N_3O_2S$
FW: 315.4
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

4-desmethoxy Omeprazole is supplied as a crystalline solid. A stock solution may be made by dissolving the 4-desmethoxy omeprazole in the solvent of choice, which should be purged with an inert gas. 4-desmethoxy Omeprazole is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of 4-desmethoxy omeprazole in ethanol is approximately 5 mg/ml and approximately 30 mg/ml in DMSO and DMF.

4-desmethoxy Omeprazole is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, 4-desmethoxy omeprazole should first be dissolved in DMSO and then diluted with the aqueous buffer of choice. 4-desmethoxy 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

4-desmethoxy Omeprazole is a potential impurity found in commercial omeprazole and esomeprazole magnesium preparations. Omeprazole (Item No. 14880) is a selective and irreversible inhibitor of the gastric H^+/K^+ ATPase pump (IC_{50} = 1.1 µM).[1] It is a racemic mixture of two enantiomers, (S)-omeprazole (esomeprazole magnesium; Item No. 17326) and (R)-omeprazole (Item No. 18874), which are prodrugs of the active sulfonamide which is formed by acid-stimulated conversion.[2,3] Both enantiomers are extensively metabolized by the cytochrome P450 (CYP) isomers CYP2C19 and CYP3A4.[3]

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)**, (2004).
2. Richardson, P., Hawkey, C.J., and Stack, W.A. Proton pump inhibitors. Pharmacology and rationale for use in gastrointestinal disorders. *Drugs* **56(3)**, 307-335 (1998).
3. Shi, S., and Klotz, U. Proton pump inhibitors: An update of their clinical use and pharmacokinetics. *Eur. J. Clin. Pharmacol.* **64(10)**, 935-951 (2008).

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.

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