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PRODUCT INFORMATION



Lansoprazole-d₄

Item No. 25227

CAS Registry No.: 934294-22-1

Formal Name: 2-[[[3-methyl-4-(2,2,2-trifluoroethoxy)-2-pyridinyl]methyl]sulfinyl]-1H-benzimidazole-4,5,6,7-d₄

MF: C₁₆H₁₀D₄F₃N₃O₂S

FW: 373.4

Chemical Purity: ≥98% (Lansoprazole)

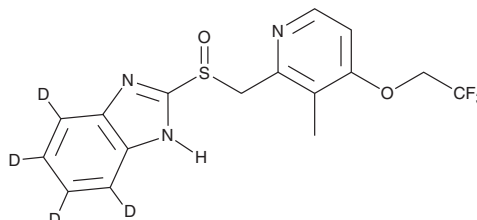
Deuterium

Incorporation: ≥99% deuterated forms (d₁-d₄); ≤1% d₀

Supplied as: A 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

Lansoprazole-d₄ is intended for use as an internal standard for the quantification of lansoprazole (Item No. 13627) by GC- or LC-MS. The accuracy of the sample weight in this vial is between 5% over and 2% under the amount shown on the vial. If better precision is required, the deuterated standard should be quantitated against a more precisely weighed unlabeled standard by constructing a standard curve of peak intensity ratios (deuterated versus unlabeled).

Lansoprazole-d₄ is supplied as a solid. A stock solution may be made by dissolving the lansoprazole-d₄ in the solvent of choice. Lansoprazole-d₄ is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF), which should be purged with an inert gas. The solubility of lansoprazole-d₄ in ethanol is approximately 5 mg/ml and approximately 30 mg/ml in DMSO and DMF.

Description

Lansoprazole is a proton pump inhibitor that inhibits the H⁺/K⁺-ATPase.¹ It inhibits K⁺ and H⁺ accumulation in gastric microsomes in a concentration-dependent manner (IC₅₀s = 6.3 and 7 μM, respectively) and inhibits H⁺/K⁺-ATPase activity by approximately 60% when used at a concentration of 10 μM. Lansoprazole inhibits the H⁺/K⁺-ATPase in parietal cells, thus inhibiting gastric acid secretion and increasing intragastric pH.² It is a substituted benzimidazole that binds covalently to proton pumps, providing complete and prolonged inhibition of acid secretion.^{3,4} Formulations containing lansoprazole have been used as proton pump inhibitors and in combination with antibiotics in the treatment of *H. pylori* infections and duodenal ulcer disease.

References

1. Nagaya, H., Satoh, H., Kubo, K., *et al.* Possible mechanism for the inhibition of gastric (H⁺ + K⁺)-adenosine triphosphatase by the proton pump inhibitor AG-1749. *J. Pharmacol. Exp. Ther.* 248(2), 799-805 (1989).
2. Schubert, M.L. Pharmacotherapy for acid/peptic disorders. *Yale J. Biol. Med.* 69(2), 197-201 (1996).
3. 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).
4. Klotz, U. Pharmacokinetic considerations in the eradication of *Helicobacter pylori*. *Clin. Pharmacokinet.* 38(3), 243-270 (2000).

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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