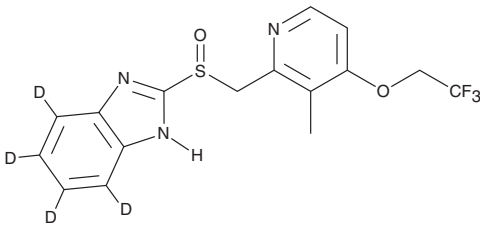
PRODUCT INFORMATION

Lansoprazole-d_4

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-d_4
MF: $C_{16}H_{10}D_4F_3N_3O_2S$
FW: 373.4
Chemical Purity: ≥98% (Lansoprazole)
Deuterium Incorporation: ≥99% deuterated forms (d_1-d_4); ≤1% d_0
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-d_4 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-d_4 is supplied as a solid. A stock solution may be made by dissolving the lansoprazole-d_4 in the solvent of choice. Lansoprazole-d_4 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-d_4 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 (IC_{50}s = 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).

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