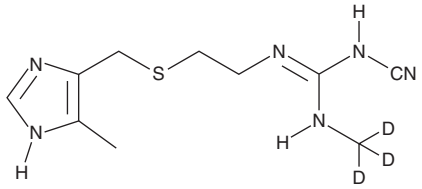
PRODUCT INFORMATION

Cimetidine-d_3

Item No. 29050

CAS Registry No.:	1185237-29-9
Formal Name:	N-cyano-N''-methyl-d_3-N'-[2-[[(4-methyl-1H-imidazol-5-yl)methyl]thio]ethyl]-guanidine
MF:	$C_{10}H_{13}D_3N_6S$
FW:	255.4
Chemical Purity:	≥95% (Cimetidine)
Deuterium Incorporation:	≥99% deuterated forms (d_1-d_3); ≤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

Cimetidine-d_3 is intended for use as an internal standard for the quantification of cimetidine (Item No. 18743) 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).

Cimetidine-d_3 is supplied as a solid. A stock solution may be made by dissolving the cimetidine-d_3 in the solvent of choice, which should be purged with an inert gas. Cimetidine-d_3 is soluble in methanol.

Description

Cimetidine is a histamine H_2 receptor antagonist (K_i = 0.6 µM).[1] It also acts as an inverse agonist, inhibiting basal cAMP production in CHO cells expressing recombinant H_2 receptors (IC_{50} = 1.2 µM). Cimetidine inhibits histamine-induced acid secretion from isolated bullfrog gastric mucosa (IC_{50} = 16 µM).[2] *In vivo*, it inhibits histamine-induced gastric acid secretion in gastric fistulae and Heidenhain pouches in dogs (ED_{50} = 1.88 µmol/kg, p.o.). Cimetidine (20 mg/kg per day) also reduces tumor growth and neovascularization in a CMT93 colon cancer mouse syngeneic model.[3]

References

1. Smit, M.J., Leurs, R., Alewijnse, A.E., *et al.* Inverse agonism of histamine H_2 antagonist accounts for upregulation of spontaneously active histamine H_2 receptors. *Proc. Natl. Acad. Sci. USA* **93(13),** 6802-6807 (1996).
2. Lin, T.M., Evans, D.C., Warrick, M.W., *et al.* Actions of nizatidine, a selective histamine H_2-receptor antagonist, on gastric acid secretion in dogs, rats and frogs. *J. Pharmacol. Exp. Ther.* **239(2),** 406-410 (1986).
3. Natori, T., Sata, M., Nagai, R., *et al.* Cimetidine inhibits angiogenesis and suppresses tumor growth. *Biomed. Pharmacother.* **59(1-2),** 56-60 (2005).

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