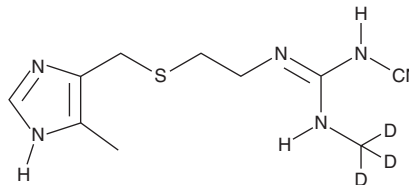


# PRODUCT INFORMATION



## Cimetidine-d<sub>3</sub> Item No. 29050

**CAS Registry No.:** 1185237-29-9  
**Formal Name:** N-cyano-N''-methyl-d<sub>3</sub>-N'-[2-[[[4-methyl-1H-imidazol-5-yl)methyl]thio]ethyl]-guanidine  
**MF:** C<sub>10</sub>H<sub>13</sub>D<sub>3</sub>N<sub>6</sub>S  
**FW:** 255.4  
**Chemical Purity:** ≥95% (Cimetidine)  
**Deuterium Incorporation:** ≥99% deuterated forms (d<sub>1</sub>-d<sub>3</sub>); ≤1% d<sub>0</sub>  
**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<sub>3</sub> 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<sub>3</sub> is supplied as a solid. A stock solution may be made by dissolving the cimetidine-d<sub>3</sub> in the solvent of choice, which should be purged with an inert gas. Cimetidine-d<sub>3</sub> is soluble in methanol.

### Description

Cimetidine is a histamine H<sub>2</sub> receptor antagonist (K<sub>i</sub> = 0.6 μM).<sup>1</sup> It also acts as an inverse agonist, inhibiting basal cAMP production in CHO cells expressing recombinant H<sub>2</sub> receptors (IC<sub>50</sub> = 1.2 μM). Cimetidine inhibits histamine-induced acid secretion from isolated bullfrog gastric mucosa (IC<sub>50</sub> = 16 μM).<sup>2</sup> *In vivo*, it inhibits histamine-induced gastric acid secretion in gastric fistulae and Heidenhain pouches in dogs (ED<sub>50</sub> = 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.<sup>3</sup>

### References

1. Smit, M.J., Leurs, R., Alewijnse, A.E., *et al.* Inverse agonism of histamine H<sub>2</sub> antagonist accounts for upregulation of spontaneously active histamine H<sub>2</sub> 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<sub>2</sub>-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).

#### 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

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