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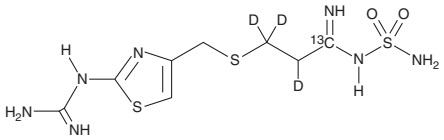
PRODUCT INFORMATION

Famotidine-^{13}C-d$_3$

Item No. 31493

Formal Name: 3-[[[2-[(aminoiminomethyl)amino]-4-thiazolyl]methyl]thio]-N-(aminosulfonyl)-propanimidamide1-^{13}C-2,3,3-d$_3$
MF: $C_7[^{13}C]H_{12}D_3N_7O_2S_3$
FW: 341.5
Chemical Purity: ≥98% (Famotidine)
Deuterium Incorporation: ≥99% deuterated forms (d$_1$-d$_3$); ≤1% d$_0$
Supplied as: A solid
Storage: -20°C
Stability: ≥2 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

Famotidine-^{13}C-d$_3$ is intended for use as an internal standard for the quantification of famotidine (Item No. 23828) 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).

Famotidine-^{13}C-d$_3$ is supplied as a solid. A stock solution may be made by dissolving the famotidine-^{13}C-d$_3$ in the solvent of choice, which should be purged with an inert gas. Famotidine-^{13}C-d$_3$ is soluble in methanol, DMSO, and dimethyl formamide.

Description

Famotidine is a histamine H$_2$ receptor antagonist with a K$_i$ value of 12 nM in fractionated guinea pig cerebral cortex membranes.[1] It is selective for H$_2$ over H$_1$ and muscarinic receptors (K$_i$s = 4 and 28 µM, respectively, in bovine cerebral cortex).[2] Famotidine inhibits histamine-induced acid secretion in isolated canine parietal cells (IC$_{50}$ = 0.6 µM).[3] It also suppresses histamine-induced gastric acid secretion in dogs when administered orally and in anesthetized rats when administered intraduodenally (ID$_{50}$s = 10 and 400 µg/kg, respectively).[3] Formulations containing famotidine have been used in the treatment of ulcers, gastroesophageal reflux disease (GERD), and heartburn, as well as to decrease the risk of gastrointestinal toxicity associated with non-steroidal anti-inflammatory drugs (NSAIDs).

References

1. Gajtkowski, G.A., Norris, D.B., Rising, T.J., *et al.* Specific binding of ^{3}H-tiotidine to histamine H$_2$ receptors in guinea pig cerebral cortex. *Nature* **304(5921)**, 65-67 (1983).
2. Kubo, N., Shirakawa, S., Kuno, T., *et al.* Antimuscarinic effects of antihistamines: Quantitative evaluation by receptor-binding assay. *Jpn. J. Pharmacol.* **43(3)**, 277-282 (1987).
3. Nagaya, H., Inatomi, N., and Satoh, H. Differences in the antisecretory actions of the proton pump inhibitor AG-1749 (lansoprazole) and the histamine H$_2$-receptor antagonist famotidine in rats and dogs. *Jpn. J. Pharmacol.* **55(4)**, 425-436 (1991).

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