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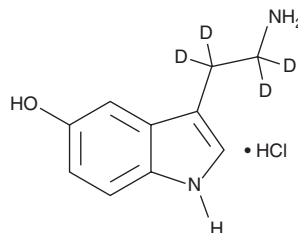
PRODUCT INFORMATION



Serotonin-d₄ (hydrochloride)

Item No. 29415

Formal Name: 3-(2-aminoethyl-1,1,2,2-d₄)-1H-indol-5-ol, monohydrochloride
Synonyms: 5-HT-d₄, 5-Hydroxytryptamine-d₄
MF: C₁₀H₈D₄N₂O • HCl
FW: 216.7
Chemical Purity: ≥95% (Serotonin)
Deuterium Incorporation: ≥99% deuterated forms (d₁-d₄); ≤1% d₀
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

Serotonin-d₄ (hydrochloride) is intended for use as an internal standard for the quantification of serotonin (Item No. 14332) 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).

Serotonin-d₄ (hydrochloride) is supplied as a solid. A stock solution may be made by dissolving the serotonin-d₄ (hydrochloride) in the solvent of choice, which should be purged with an inert gas. Serotonin-d₄ (hydrochloride) is slightly soluble in methanol.

Description

Serotonin is a monoamine neurotransmitter that is biochemically derived from tryptophan and produced in serotonergic neurons in the central nervous system and in enterochromaffin cells in the gastrointestinal tract.¹⁻⁴ Serotonin is important in the regulation of mood, sleep, vomiting, sexuality, and appetite. Low levels of serotonin are associated with several disorders, including depression, migraines, bipolar disorder, and anxiety. Its actions are terminated primarily *via* uptake of serotonin from the synapse. Serotonin reuptake can be inhibited with MDMA, cocaine, tricyclic antidepressants, and selective serotonin reuptake inhibitors.

References

1. Martinez, A., Knappskog, P.M., and Haavik, J. A structural approach into human tryptophan hydroxylase and its implications for the regulation of serotonin biosynthesis. *Curr. Med. Chem.* **8**(9), 1077-1091 (2001).
2. Liu, Q., Yang, Q., Sun, W., *et al.* Discovery and characterization of novel tryptophan hydroxylase inhibitors that selectively inhibit serotonin synthesis in the gastrointestinal tract. *J. Pharmacol. Exp. Ther.* **325**(1), 47-55 (2008).
3. Schmid, C.L. and Bohn, L.M. Serotonin, but not N-methyltryptamines, activates the serotonin 2A receptor via a β -arrestin2/Src/Akt signaling complex in vivo. *J. Neurosci.* **30**(40), 13513-13524 (2010).
4. Berger, M., Gray, J.A., and Roth, B.L. The expanded biology of serotonin. *Annu. Rev. Med.* **60**, 355-366 (2009).

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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