

Product Data Sheet

Product Name: Serotonin-d4 (hydrochloride)

Cat. No.: GC48075

Chemical Properties

Cas. No. 2469263-61-2

SMILES OC1=CC=C(NC=C2C([2H])([2H])C([2H])([2H])N)C2=C1.Cl

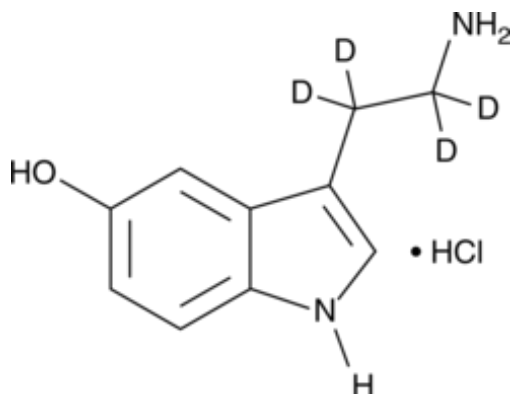
Formula $C_{10}H_8D_4N_2O \cdot HCl$ M.Wt 216.7

Solubility Methanol: slightly soluble, Water: slightly soluble Storage Store at -20°C

General tips For obtaining a higher solubility, please warm the tube at 37 °C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.

Shipping Condition Evaluation sample solution: ship with blue ice All other available size: ship with RT, or blue ice upon request.

Structure



Background

Serotonin-d₄ is intended for use as an internal standard for the quantification of serotonin by GC- or LC-MS. 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.^{1,2,3,4} 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

Caution: Product has not been fully validated for medical applications. For research use only.

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antidepressants, and selective serotonin reuptake inhibitors.

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)

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