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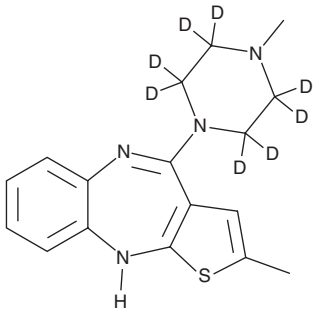
PRODUCT INFORMATION

Olanzapine-d_8

Item No. 25447

CAS Registry No.: 1093380-13-2
Formal Name: 2-methyl-4-(4-methyl-1-piperazinyl-2,2,3,3,5,5,6,6-d_8)-10H-thieno[2,3-b][1,5]benzodiazepine
MF: $C_{17}H_{12}D_8N_4S$
FW: 320.5
Chemical Purity: ≥98% (Olanzapine)
Deuterium Incorporation: ≥99% deuterated forms (d_1-d_8); ≤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

Olanzapine-d_8 is intended for use as an internal standard for the quantification of olanzapine (Item No. 11937) 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).

Olanzapine-d_8 is supplied as a solid. A stock solution may be made by dissolving the olanzapine-d_8 in the solvent of choice. Olanzapine-d_8 is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide, which should be purged with an inert gas. The solubility of olanzapine-d_8 in these solvents is approximately 1, 16, and 20 mg/ml, respectively.

Description

Olanzapine is an atypical antipsychotic that binds to dopamine D_1, D_2, and D_4 receptors (K_is = 31, 11, and 27 nM, respectively) as well as the serotonin (5-HT) receptor subtypes 5-HT_{2A}, 5-HT_{2C}, and 5-HT_3 (K_is = 4, 11, and 57 nM, respectively).[1] It also binds to M_1 muscarinic acetylcholine, α_1-adrenergic, and histamine H_1 receptors (K_is = 2, 19, and 7 nM, respectively). Olanzapine (0.5 mg/kg, i.p.) decreases immobility time in the forced swim test in non-stressed and prenatally-stressed rats, indicating antidepressant-like activity.[2] It also decreases the number of avoidances made in the conditioned avoidance response test in rats when administered at doses of 0.5 and 1 mg/kg.[3] Formulations containing olanzapine have been used in the treatment of schizophrenia and bipolar disorder.

References

1. Bymaster, F.P., Calligaro, D.O., Falcone, J.F., *et al.* Radioreceptor binding profile of the atypical antipsychotic olanzapine. *Neuropsychopharmacology* **14(2)**, 87-96 (1996).
2. Nowakowska, E., Kus, K., Ratajczak, P., *et al.* The influence of aripiprazole, olanzapine and enriched environment on depressant-like behavior, spatial memory dysfunction and hippocampal level of BDNF in prenatally stressed rats. *Pharmacol. Rep.* **66(3)**, 404-411 (2014).
3. Ashby, D.M., Lapish, C.C., and Phillips, A.G. Stability of avoidance behaviour following repeated intermittent treatment with clozapine, olanzapine or D,L-govadine. *Behav. Pharmacol.* **26(1-2)**, 133-138 (2015).

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