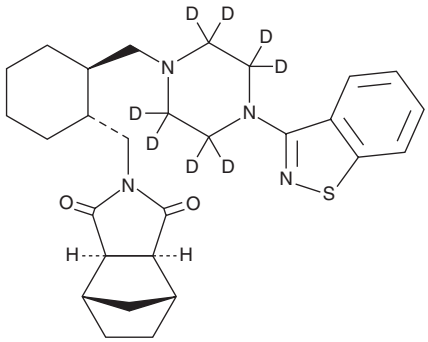
PRODUCT INFORMATION

Lurasidone-d_8

Item No. 25222

CAS Registry No.: 1132654-54-6
Formal Name: (3aR,4S,7R,7aS)-2-[[(1R,2R)-2-[[4-(1,2-benzisothiazol-3-yl)-1-piperazinyl-2,2,3,3,5,5,6,6-d_8]methyl]cyclohexyl]methyl] hexahydro-4,7-methano-1H-isoindole-1,3(2H)-dione
MF: $C_{28}H_{28}D_8N_4O_2S$
FW: 500.7
Chemical Purity: ≥98% (Lurasidone)
Deuterium Incorporation: ≥99% deuterated forms (d_1-d_8); ≤1% d_0
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

Lurasidone-d_8 is intended for use as an internal standard for the quantification of lurasidone (Item No. 9000570) 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).

Lurasidone-d_8 is supplied as a solid. A stock solution may be made by dissolving the lurasidone-d_8 in the solvent of choice, which should be purged with an inert gas. Lurasidone-d_8 is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide. The solubility of lurasidone-d_8 in these solvents is approximately 30 mg/ml.

Description

Lurasidone is an atypical antipsychotic that binds to dopamine D_2, serotonin (5-HT) receptor subtypes 5-HT_{2A}, 5-HT_{1A}, and 5-HT_7, and α_{2C}-adrenergic receptors (K_is = 1.68, 2.03, 6.75, 0.495, and 10.8 nM, respectively).[1] *In vivo*, pre-training administration of lurasidone (1 and 3 mg/kg) reverses impairment in step-through latency and passive avoidance in a foot shock test induced by MK-801 (Item No. 10009019) in rats. It reverses MK-801-induced learning impairment in the Morris water maze as well as reference and working memory impairment in the radial arm maze in rats.[2] Lurasidone also decreases immobility in the tail suspension and forced swim tests, indicating antidepressant-like activity in mice.[3] Formulations containing lurasidone have been used in the treatment of schizophrenia and mood disorders.

References

1. Ishiyama, T., Tokuda, K., Ishibashi, T., *et al.* Lurasidone (SM-13496), a novel atypical antipsychotic drug, reverses MK-801-induced impairment of learning and memory in the rat passive-avoidance test. *Eur. J. Pharmacol.* **572(2-3)**, 160-170 (2007).
2. Enomoto, T., Ishibashi, T., Tokuda, K., *et al.* Lurasidone reverses MK-801-induced impairment of learning and memory in the Morris water maze and radial-arm maze tests in rats. *Behav. Brain Res.* **186(2)**, 197-207 (2008).
3. Cates, L.N., Roberts, A.J., Huitron-Resendiz, S., *et al.* Effects of lurasidone in behavioral models of depression. Role of the 5-HT_7 receptor subtype. *Neuropharmacology* **70**, 211-217 (2013).

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