

Product Data Sheet

Product Name: Haloperidol D4

Cat. No.: GC36209

Chemical Properties

Cas. No. 1189986-59-1

SMILES C1C=C([2H])C([2H])=C(C2(O)CCN(CCCC(C3=CC=C(F)C=C3)=O)CC2)C([2H])=C1[2H]

Formula $C_{21}H_{19}D_4ClFNO_2$ M.Wt 379.89

Solubility Chloroform: Slightly Soluble, Methanol: 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 Evaluation sample solution : ship with blue ice All other available size: ship with RT, Condition or blue ice upon request.

Structure

Background

Haloperidol-d₄ is intended for use as an internal standard for the quantification of haloperidol by GC- or LC-MS. Haloperidol is a typical antipsychotic and dopamine D₂-like receptor antagonist (K_i s = 0.6, 0.2, and 22 nM, for D₂, D₃, and D₄ receptors, respectively).¹ It also acts as an inverse agonist at dopamine D₂ and D₃ receptors (IC_{50} s = 0.8 and 0.6 nM, respectively). Haloperidol also binds to α_1 - and α_2 -adrenergic and histamine H₁ receptors, as well as the serotonin (5-HT) receptor subtypes 5-HT_{1D} and 5-HT_{2A} (K_d s = 17, 600, 260, 40, and 61 nM, respectively).² It inhibits stereotypic behavior induced by apomorphine and amphetamine in rats (ID_{50} s = 0.532 and 0.101 μ mol/kg, respectively).³ Haloperidol also inhibits apomorphine-induced decreases in prepulse inhibition of the acoustic startle response in rats in a dose-dependent manner.⁴ Formulations containing haloperidol have been used in the treatment of schizophrenia and Tourette syndrome.

1. Burstein, E.S., Ma, J., Wong, S., et al. Intrinsic efficacy of antipsychotics at human D₂, D₃, and D₄ dopamine receptors: Identification of the clozapine metabolite N-desmethylclozapine as a D₂/D₃ partial agonist. *J. Pharmacol. Exp. Ther.* 315(3):1278-1287 (2005)
 2. Richelson, E., and Souder, T. Binding of antipsychotic drugs to human brain receptors: Focus on newer generation compounds. *Life Sci.* 68(1):29-39 (2000)
 3. Creese, I., Burt, D.R., and Snyder, S.H. Dopamine receptor binding predicts clinical and pharmacological potencies of antischizophrenic drugs.

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

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Neuropsychiatry Clin. Neurosci.8(2)223-226(1996) 4.Swerdlow, N.R., and Geyer, M.A.Clozapine and haloperidol in an animal model of sensorimotor gating deficits in schizophreniaPharmacol. Biochem. Behav.44(3)741-744(1993)

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