Olanzapine
Item No. 11937

CAS Registry No.: 132539-06-1
Formal Name: 2-methyl-4-(4-methyl-1-piperazinyl)-10H-thieno[2,3-b][1,5]benzodiazepine
Synonym: LY170053
MF: C_{17}H_{20}N_{4}S
FW: 312.4
Purity: ≥98%
UV/Vis.: λ_{max}: 226, 272 nm
Supplied as: A crystalline 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 is supplied as a crystalline solid. A stock solution may be made by dissolving the olanzapine in the solvent of choice. Olanzapine is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide, which should be purged with an inert gas. The solubility of olanzapine in these solvents is approximately 1, 16, and 20 mg/ml, respectively.

Olanzapine is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, olanzapine should first be dissolved in DMSO and then diluted with the aqueous buffer of choice. Olanzapine has a solubility of approximately 0.5 mg/ml in a 1:1 solution of DMSO:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

Olanzapine is an atypical antipsychotic that binds to dopamine D_1, D_2, and D_4 receptors (K_s = 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_s = 4, 11, and 57 nM, respectively). It also binds to M_1 muscarinic acetylcholine, α_1-adrenergic, and histamine H_1 receptors (K_s = 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. 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. Formulations containing olanzapine have been used in the treatment of schizophrenia and bipolar disorder.

References