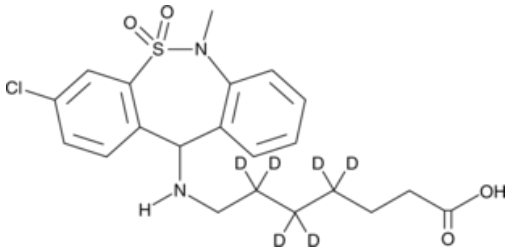
Product Data Sheet

Product Name: Tianeptine-d6
Cat. No.: GC48179

Chemical Properties

Cas. No.	N/A		
SMILES	OC(CCC([2H])([2H])C([2H])([2H])C([2H])([2H])CNC(C1=C2C=C(Cl)C=C1)C(C=CC=C3)=C3N(C)S2(=O)=O)=O		
Formula	C21H19D6ClN2O4S	M.Wt	443
Solubility	Methanol: 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

Tianeptine-d_6 is intended for use as an internal standard for the quantification of tianeptine by GC- or LC-MS. Tianeptine is an atypical antidepressant.[1] It is an agonist of the μ-opioid receptor (MOR; EC_{50}s = 194 and 641 nM for human and mouse receptors, respectively, in a BRET assay for G protein activation) and also has effects on the glutamate system.[1,2] Tianeptine (30 mg/kg) decreases immobility in the forced swim test in wild-type, but not MOR knockout mice, indicating antidepressant-like activity dependent on MORs.[3] It increases locomotor activity at a dose of 30, but not 10 mg/kg, in the open field test and increases paw withdrawal latency in the hot-plate test in mice. Tianeptine

Product Data Sheet

modulates AMPA receptor activity by increasing phosphorylation of the AMPA receptor GluR1 subunit in the frontal cortex and hippocampal CA3 region in mice.[4] It prevents increases in glial glutamate transporter 1 (GLT-1) expression induced by chronic restraint stress in the hippocampal CA3 region in rats when administered at a dose of 10 mg/kg per day for 21 days.[5] It also reverses increases in extracellular glutamate levels induced by acute restraint stress in the basolateral nucleus of the amygdala in rats.[6]

1.McEwen, B.S., Chattarji, S., Diamond, D.M., et al.The neurobiological properties of tianeptine (Stablon): From monoamine hypothesis to glutamatergic modulationMol. Psychiatry15(3)237-249(2010) 2.Gassaway, M.M., Rives, M.L., Kruegel, A.C., et al.The atypical antidepressant and neurorestorative agent tianeptine is a μ-opioid receptor agonistTransl. Psychiatry4e411(2014) 3.Samuels, B.A., Nautiyal, K.M., Kruegel, A.C., et al.The behavioral effects of the antidepressant tianeptine require the mu-opioid receptorNeuropsychopharmacology42(10)2052-2063(2017) 4.Svenningsson, P., Bateup, H., Qi, H., et al.Involvement of AMPA receptor phosphorylation in antidepressant actions with special reference to tianeptineEur. J. Neurosci.26(12)3509-3517(2007) 5.Reagan, L.P., Rossell, D.R., Wood, G.E., et al.Chronic restraint stress up-regulates GLT-1 mRNA and protein expression in the rat hippocampus: Reversal by tianeptineProc. Natl. Acad. Sci. U.S.A.101(7)2179-2184(2004) 6.Reznikov, L.R., Grillo, C.A., Piroli, G.G., et al.Acute stress-mediated increases in extracellular glutamate levels in the rat amygdala: Differential effects of antidepressant treatmentEur. J. Neurosci.25(10)3109-3114(2007)