

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

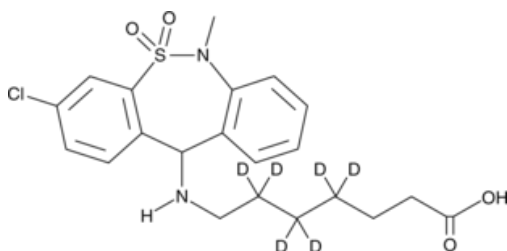
Solubility Methanol: soluble

Storage Store at -20°C

General For obtaining a higher solubility, please warm the tube at 37 °C and shake it in the tips 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, or Condition blue ice upon request.

Structure



Background

Tianeptine-d₆ 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; EC₅₀s = 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

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

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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 modulation *Mol. Psychiatry* 15(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 agonist *Transl. Psychiatry* 4e411(2014)
3. Samuels, B.A., Nautiyal, K.M., Kruegel, A.C., et al. The behavioral effects of the antidepressant tianeptine require the μ -opioid receptor *Neuropsychopharmacology* 42(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 tianeptine *Eur. 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 tianeptine *Proc. 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 treatment *Eur. J. Neurosci.* 25(10)3109-3114(2007)

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