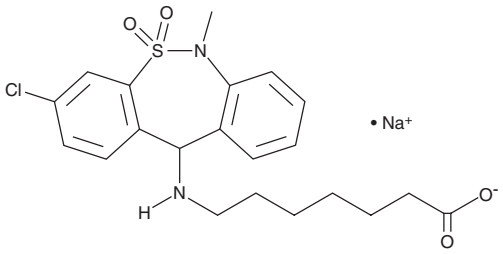
PRODUCT INFORMATION

Tianeptine (sodium salt)

Item No. 17561

CAS Registry No.: 30123-17-2
Formal Name: 7-[(3-chloro-6,11-dihydro-6-methyl-5,5-dioxidodibenzo[c,f][1,2]thiazepin-11-yl)amino]-heptanoic acid, monosodium salt
MF: $C_{21}H_{24}ClN_2O_4S \bullet Na$
FW: 458.9
Purity: ≥95%
Supplied as: A crystalline 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

Tianeptine (sodium salt) is supplied as a crystalline solid. A stock solution may be made by dissolving the tianeptine (sodium salt) in the solvent of choice, which should be purged with an inert gas. Tianeptine (sodium salt) is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide. The solubility of tianeptine (sodium salt) in these solvents is approximately 10, 20, and 30 mg/ml, respectively.

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. Organic solvent-free aqueous solutions of tianeptine (sodium salt) can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of tianeptine (sodium salt) in PBS (pH 7.2) is approximately 10 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

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 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]

References

1. McEwen, B.S., Chattarji, S., Diamond, D.M., *et al. Molecular Psychiatry* **15(3)**, 237-249 (2010).
2. Gassaway, M.M., Rives, M.L., Kruegel, A.C., *et al. Transl. Psychiatry* **4(7)**, e411 (2014).
3. Samuels, B.A., Nautiyal, K.M., Kruegel, A.C., *et al. Neuropsychopharmacology* **42(10)**, 2052-2063 (2017).
4. Svenningsson, P., Bateup, H., Qi, H., *et al. Eur. J. Neurosci.* **26(12)**, 3509-3517 (2007).
5. Reagan, L.P., Rossell, D.R., Wood, G.E., *et al. Proc. Natl. Acad. Sci. USA* **101(7)**, 2179-2184 (2004).
6. Reznikov, L.R., Grillo, C.A., Piroli, G.G., *et al. Eur. J. Neurosci.* **25(10)**, 3109-3114 (2007).

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