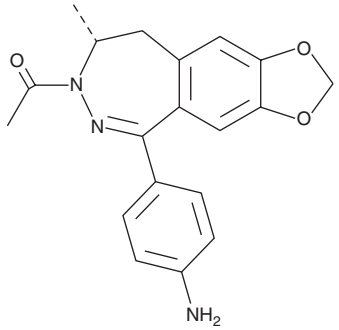
PRODUCT INFORMATION

Talampanel

Item No. 15341

CAS Registry No.: 161832-65-1
Formal Name: (8R)-7-acetyl-5-(4-aminophenyl)-8,9-dihydro-8-methyl-7H-1,3-dioxolo[4,5-h][2,3]benzodiazepine
Synonyms: GYKI 53773, LY 300164
MF: $C_{19}H_{19}N_3O_3$
FW: 337.4
Purity: ≥98%
UV/Vis.: λ_{max}: 238, 329 nm
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

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

Talampanel is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, talampanel should first be dissolved in DMF and then diluted with the aqueous buffer of choice. Talampanel has a solubility of approximately 0.16 mg/ml in a 1:5 solution of DMF:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

Talampanel is an allosteric AMPA receptor antagonist (IC_{50} = 2.5 µM in cerebellar Purkinje neurons using voltage-clamp electrophysiology).[1] It reduces the firing rate of spinal neurons in rats by 68% when administered at a dose of 10 mg/kg following AMPA administration.[2] It is protective against seizures in mouse models of epilepsy including maximum electroshock (MES; ED_{50} = 8.6 mg/kg) and 4-aminopyridine models (Item No. 18511; ED_{50} = 8.4 mg/kg). It also potentiates the effects of diazepam in MES- and metrazole-induced seizure models when administered at a dose of 2 mg/kg.[3] Talampanel is neuroprotective, reducing lesion size in rat and mouse models of focal ischemia.

References

1. Bleakman, D., Ballyk, B.A., Schoepp, D.D., *et al.* Activity of 2,3-benzodiazepines at native rat and recombinant human glutamate receptors *in vitro*: Stereospecificity and selectivity profiles. *Neuropharmacology* **35(12)**, 1689-1702 (1996).
2. Lodge, D., Bond, A., O'Neill, M.J., *et al.* Stereoselective effects-of 2,3-benzodiazepines *in vivo*: Electrophysiology and neuroprotection studies. *Neuropharmacology* **35(12)**, 1681-1688 (1996).
3. Howes, J.F. and Bell, C. Talampanel. *Neurotherapeutics* **4(1)**, 126-129 (2007).

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