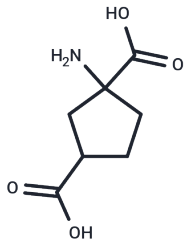
Data Sheet (Cat.No.T3484)

TargetMol

trans-ACPD

Chemical Properties



CAS No. : 67684-64-4

Formula: C7H11NO4

Molecular Weight: 173.17

Appearance: no data available

Storage: Powder: -20°C for 3 years | In solvent: -80°C for 1 year

Biological Description

Description	trans-ACPD ((±)-trans-ACPD) is an equimolecular mixture of (1S, 3R)- and (1R, 3S)-ACPD. trans-ACPD is a selective agonist of the mGluR (metabotropic glutamate receptor); active at the group I/II mGlu receptors (EC50: 2/15/23/800 μM, mGluR2/1/5/4).
Targets(IC50)	GluR
In vitro	Excitatory amino acid (EAA) analogues activate receptors linked to increased hydrolysis of phosphoinositides (PIs). In these studies, hippocampal slices from neonatal rats (6-11 days old) characterize the effects of EAA analogues on these receptors. The EC50 value of trans-ACPD is 51 μM, and DL-2-Amino-3-phosphonopropionate (DL-AP3) serves as an equally potent inhibitor of PI hydrolysis induced by ibotenate, quisqualate, and trans-ACPD, with IC50 values ranging from 480 to 850 μM [2].
In vivo	Intrathecal administration of NMDA, kainate, and trans-ACPD, along with the pro-inflammatory cytokines TNF-α or IL-1β, markedly increases biting behavior in mice, a paradigm shift from the control group receiving saline. Pre-systemic intervention with GM at a dosage of 100 mg/kg intraperitoneally notably decreases biting behavior in comparison to saline treatment (10 mL/kg, i.p.), with statistical significance ($p<0.001$). The efficacy of GM is particularly pronounced against pro-inflammatory cytokines and NMDA, exhibiting inhibition rates of TNF-α (92±7%), IL-1β (91±5%), NMDA (69±1%), and trans-ACPD (71±12%). Conversely, kainate-induced biting responses remain unaffected by GM at the same concentration.

Solubility Information

Solubility	1eq. NaOH: 50 mM,Sonication is recommended. H2O: 5 mM,Heating is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	5.7747 mL	28.8734 mL	57.7467 mL
5 mM	1.1549 mL	5.7747 mL	11.5493 mL
10 mM	0.5775 mL	2.8873 mL	5.7747 mL
50 mM	0.1155 mL	0.5775 mL	1.1549 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Reference

Linden DJ, et al. Trans-ACPD, a metabotropic receptor agonist, produces calcium mobilization and an inward current in cultured cerebellar Purkinje neurons. J Neurophysiol. 1994 May;71(5):1992-8.

Littman L, et al. Multiple mechanisms for inhibition of excitatory amino acid receptors coupled to phosphoinositide hydrolysis. J Neurochem. 1992 Nov;59(5):1893-904.

Córdova, M., Martins, D., Silva, M., Baggio, C., Carbonero, E., & Ruthes, A. et al. (2013). Polysaccharide glucomannan isolated from Heterodermia obscurata attenuates acute and chronic pain in mice. Carbohydrate Polymers, 92(2), 2058-2064. doi: 10.1016/j.carbpol.2012.11.041