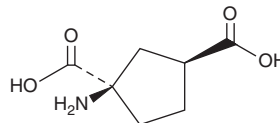


PRODUCT INFORMATION

(±)-trans-ACPD

Item No. 28849

CAS Registry No.: 67684-64-4
Formal Name: (1R,3S)-1-aminocyclopentane-1,3-dicarboxylic acid
MF: C₇H₁₁NO₄
FW: 173.2
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

(±)-trans-ACPD is supplied as a crystalline solid. A stock solution may be made by dissolving the (±)-trans-ACPD in the solvent of choice, which should be purged with an inert gas. (±)-trans-ACPD is soluble in organic solvents such as DMSO.

(±)-trans-ACPD is sparingly soluble in aqueous solutions. To enhance aqueous solubility, dilute the organic solvent solution into aqueous buffers or isotonic saline. If performing biological experiments, ensure the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. We do not recommend storing the aqueous solution for more than one day.

Description

(±)-trans-ACPD is an agonist of metabotropic glutamate receptors (mGluRs; EC₅₀s = 15, 2, 40, 23, and 82 μM for mGluR1, -2, -3, -5, and -6, respectively, in CHO cells expressing recombinant receptors).¹ It also activates mGluR4 in baby hamster kidney cells with an EC₅₀ value of approximately 800 μM. (±)-trans-ACPD increases cAMP accumulation in adult rat cerebral cortex slices (EC₅₀ = 47.8 μM) but not in isolated rat embryonic neurons or neonatal glial cells when used at concentrations ranging from 1 to 1,000 μM.² (±)-trans-ACPD (10-1,000 μM) increases phosphoinositide hydrolysis in neonatal rat cerebral cortex and hippocampal slices. It induces clonic convulsions in neonatal rats (ED₅₀ = 100 mg/kg), an effect that can be reversed by administration of the NMDA receptor antagonists LY233053 and LY274614.³

References

1. Kozikowski, A.P., Steensma, D., Araldi, G.L., *et al.* Synthesis and biology of the conformationally restricted ACPD analogue, 2-aminobicyclo[2.1.1]hexane-2,5-dicarboxylic acid-I, a potent mGluR agonist. *J. Med. Chem.* **41**(10), 1641-1650 (1998).
2. Pilc, A., Legutko, B., Frankiewicz, T., *et al.* Trans-(+)-1-amino-1,3-cyclopentanedicarboxylate (trans-ACPD) stimulates cAMP accumulation in rat cerebral cortical slices but not in glial or neuronal cultures. *Neurosci. Lett.* **169**(1-2), 171-174 (1994).
3. Schoepp, D.D., Johnson, B.G., Salhoff, C.R., *et al.* In vitro and in vivo pharmacology of trans- and cis-(+)-1-amino-1,3-cyclopentanedicarboxylic acid: Dissociation of metabotropic and ionotropic excitatory amino acid receptor effects. *J. Neurochem.* **56**(5), 1789-1796 (1991).

WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the [complete](#) Safety Data Sheet, which has been sent via email to your institution.

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CAYMAN CHEMICAL

1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA

PHONE: [800] 364-9897

[734] 971-3335

FAX: [734] 971-3640

CUSTSERV@CAYMANCHEM.COM
WWW.CAYMANCHEM.COM