

Product Data Sheet

Product Name: LY341495

Cat. No.: GC14555

Chemical Properties

Cas. No. 201943-63-7

Chemical Name (1S,2S)-2-[(1S)-1-amino-1-carboxy-2-(9H-xanthen-9-yl)ethyl]cyclopropane-1-carboxylic acid

SMILES C1C(C1C(CC2C3=CC=CC=C3OC4=CC=CC=C24))(C(=O)O)N)C(=O)O

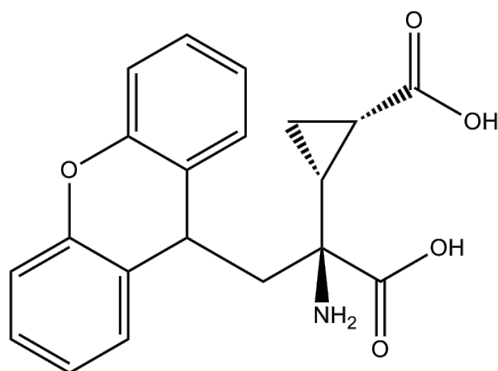
Formula $C_{20}H_{19}NO_5$ M.Wt 353.38

Solubility 0.5 mg/ml in DMSO, 0.1 mg/ml in methanol Storage Store at -20°C

General tips For obtaining a higher solubility, please warm the tube at 37 °C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.

Shipping Condition Evaluation sample solution: ship with blue ice All other available size: ship with RT, or blue ice upon request.

Structure



Protocol

Cell experiment [1]:

Cell lines U87 cell lines

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

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Preparation method The solubility of this compound in DMSO is >10 mM. General tips for obtaining a higher concentration: Please warm the tube at 37 °C for 10 minutes and/or shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.

Reaction Conditions 72h; 1 µM

Applications It is well established that U87 cells proliferate in a glutamate-dependent manner and drugs LY341495, an inhibitor of metabotropic glutamate receptor have been shown to inhibit proliferation of glioma cells. The result shown that Iressa in combination with LY341495 is effective in inhibiting proliferation.

Animal experiment [2]:

Animal models Male 6-week-old Sprague-Dawley rats

Dosage form 3 mg/kg; intraperitoneal injection

Applications We tested the anti-immobility effect of LY341495 in the forced swim test (FST). LY341495 significantly decreased the immobility behavior ($F(3,36)=3.05$; P

Other notes Please test the solubility of all compounds indoor, and the actual solubility may slightly differ with the theoretical value. This is caused by an experimental system error and it is normal.

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References:

- [1] Yelskaya Z, Carrillo V, Dubisz E, et al. Synergistic Inhibition of Survival, Proliferation, and Migration of U87 Cells with a Combination of LY341495 and Iressa[J]. PloS one, 2013, 8(5): e64588.
- [2] Koike H1, Chaki S2. Requirement of AMPA receptor stimulation for the sustained antidepressant activity of ketamine and LY341495 during the forced swim test in rats. Behav Brain Res. 2014 Sep 1;271:111-5. doi: 10.1016/j.bbr.2014.05.065. Epub 2014 Jun 5.

Background

LY341495 is a highly potent and selective antagonist of group II metabotropic glutamate receptors with IC₅₀ values of 21 nM and 14 nM for mGlu2 and mGlu3 receptors, respectively [1].

Glutamate is the major excitatory neurotransmitter that regulates neuronal plasticity and maintains fast synaptic transmission. The aberrant glutamate pathway has been found in a serious of neurological problems, such as cognitive disorders, epilepsy and AD. As a selective inhibitor of group II metabotropic glutamate receptors (including mGlu2 and mGlu3), LY341495 acts as a competitive antagonist to regulate the transmission of glutamate [1 and 2].

In the functional assays, LY341495 at concentrations of 0.1 μ M and 30 nM completely reversed the ACPD-induced inhibition of cAMP formation which was stimulated by forskolin in mGlu2 expressing cells and mGlu3 expressing cells, respectively. In RGT cells expressing group III mGlu receptors (mGlu4, 6, 7 and 8), LY341495 showed significant reversion of L-AP4-inhibited cAMP formation stimulated by forskolin. For mGlu4a, 7a and 8, the IC₅₀ value of LY341495 were 22, 0.99 and 0.173 μ M, respectively, which were 5 to 1000-fold higher than that for mGlu2 and mGlu3. For the group I mGlu receptors (mGlu1a and 5a), the IC₅₀ values were 6.8 and 8.2 μ M, respectively. Besides that, LY341495 was found to reversibly eliminate the long-term synaptic depression induced by DHPG in rats' hippocampal slices [1 and 2].

In animal experiments, LY341495 was found to have effects on the post-training recognition memory. It was reported that the administration of LY341495 at different doses showed different efficacies on rats' recognition memory. Rats treated with LY341495 at doses of 0.3, 1 and 3 mg/kg displayed a significant lower level of discrimination while LY341495 at doses of 0.05 and 0.1 mg/kg exerted a reversion of the recognition memory extinction and showed no impairment of the recognition memory

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[3].

References:

- [1] Kingston A E, Ornstein P L, Wright R A, et al. LY341495 is a nanomolar potent and selective antagonist of group II metabotropic glutamate receptors. *Neuropharmacology*, 1998, 37(1): 1-12.
- [2] Fitzjohn S M, Bortolotto Z A, Palmer M J, et al. The potent mGlu receptor antagonist LY341495 identifies roles for both cloned and novel mGlu receptors in hippocampal synaptic plasticity. *Neuropharmacology*, 1998, 37(12): 1445-1458.
- [3] Pitsikas N, Kaffe E, Markou A. The metabotropic glutamate 2/3 receptor antagonist LY341495 differentially affects recognition memory in rats. *Behavioural brain research*, 2012, 230(2): 374-379.

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