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DATASHEET

DL-AP5

Product overview

Name DL-AP5
Cat No HB0251
Alternative names DL-APV
Biological action Antagonist
Purity >99%

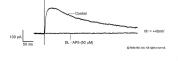
Customer comments DL-AP5: can't get a better deal than this! We love Hello Bio's DL-AP5!! This is one of the most

heavily used inhibitors in our electrophysiology lab and with three rigs running daily we go through a

LOT of it... Verified customer, University of Toronto

Description Competitive NMDA receptor antagonist

Images







Biological Data

Biological description

DL-AP5 is a competitive NMDA receptor antagonist which binds at the glutamate site.

Impairs learning and fear conditioning.

Application notes

Water soluble DL-AP5 sodium salt also available.

DL-AP5 from Hello Bio reduces the evoked NMDAR current at concentrations of 1 and 10 μ M with full receptor antagonism achieved at 50 μ M (see Fig 1 above). It was dissolved in water at 10 mM.

#Protocol 1: Evoked NMDA receptor currents

- Whole cell voltage clamp recordings were obtained from layer V neurons of the mouse prelimbic cortex brain slice.
- NMDA currents were evoked via a stimulating electrode placed in layers II/III and evoked by a single square (150 µs) pulse every 10 sec at a stimulus intensity that gave a reliable NMDA current.
- Neurons were held a +40 mV to relieve NMDA currents from their voltage-dependent Mg²⁺ block.
- NMDA currents were continually stimulated and recorded in response to continual bath applications of DL-AP5 until NMDA currents were completely abolished.
- All NMDAR recordings were made in the presence of GABA_A-R and AMPAR antagonists.

Solubility & Handling

Solubility overview Soluble in water (10mM) or 0.1M NaOH (100mM)

Storage instructions Room temperature

Storage of solutions Prepare and use solutions on the same day if possible. Store solutions at -20 °C for up to one month if

storage is required. Equilibrate to RT and ensure the solution is precipitate free before use.

Shipping Conditions

Important

Stable for ambient temperature shipping. Follow storage instructions on receipt.

This product is for RESEARCH USE ONLY and is not intended for therapeutic or diagnostic use. Not

for human or veterinary use.

Chemical Data

Chemical name DL-2-Amino-5-phosphonopentanoic acid

Molecular Weight 197.13

Chemical structure

HO₂C PO(OH)₂

PubChem identifier 1216

 $\label{eq:ncccp} \textbf{SMILES} \qquad \qquad \textbf{NC}(\textbf{CCCP}(=\textbf{O})(\textbf{O})\textbf{O})\textbf{C}(=\textbf{O})\textbf{O}$

Source Synthetic

InChi InChi=1S/C5H12NO5P/c6-4(5(7)8)2-1-3-12(9,10)11/h4H,1-3,6H2,(H,7,8)(H2,9,10,11)

InChiKey VOROEQBFPPIACJ-UHFFFAOYSA-N

MDL number MFCD00010515 Appearance White solid

References

Infusion of the NMDA receptor antagonist, DL-APV, into the basolateral amygdala disrupts learning to fear a novel and a familiar context as well as relearning to fear an extinguished context.

Laurent V *et al* (2009) Learn Mem 16(1) **PubMedID**19141468

The basolateral amygdala is necessary for learning but not relearning extinction of context conditioned fear.

Laurent V *et al* (2008) Learn Mem 15(5) **PubMedID**18463174

Comparative analysis of different competitive antagonists interaction with NR2A and NR2B subunits of NMDA ionotropic glutamate receptor.

Blaise MC *et al* (2005) J Mol Model 11(6) **PubMedID**15928921

Context-Dependent Modulation of Excitatory Synaptic Strength by Synaptically Released Zinc

Kalappa and Tzounopoulos (2017) eNeuro 10.1523