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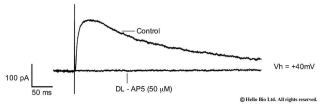
DATASHEET

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 µM with full receptor antagonism achieved at 50 µM (see Fig 1 above). It was dissolved in water at 10 mM.

#Protocol 1: Evoked NMDA receptor currents

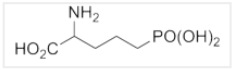
- Whole cell voltage clamp recordings were obtained from layer V neurons of the mouse prelimbic cortex brain slice.
- NMDA currents were evoked via a stimulating electrode placed in layers II/III and evoked by a single square (150 µs) pulse every 10 sec at a stimulus intensity that gave a reliable NMDA current.
- Neurons were held a +40 mV to relieve NMDA currents from their voltage-dependent Mg^{2+} 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

Storage instructions	Room temperature
Solubility overview	Soluble in water (10mM) or 0.1M NaOH (100mM)
Important	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	
Molecular Formula	$C_5H_{12}NO_5P$
CAS Number	76326-31-3
PubChem identifier	1216
SMILES	NC(CCCP(=O)(O)O)C(=O)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