

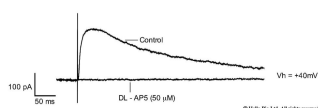
## DATASHEET

### DL-AP5

#### Product overview

|                          |                                                                                                                                                                                                                                                                     |
|--------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Name</b>              | DL-AP5                                                                                                                                                                                                                                                              |
| <b>Cat No</b>            | HB0251                                                                                                                                                                                                                                                              |
| <b>Alternative names</b> | DL-APV                                                                                                                                                                                                                                                              |
| <b>Biological action</b> | Antagonist                                                                                                                                                                                                                                                          |
| <b>Purity</b>            | >99%                                                                                                                                                                                                                                                                |
| <b>Customer comments</b> | <i>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</i> |
| <b>Description</b>       | Competitive NMDA receptor antagonist                                                                                                                                                                                                                                |

#### Images



#### Biological Data

|                               |                                                                                                                                                                                                                                                           |
|-------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Biological description</b> | DL-AP5 is a competitive NMDA receptor antagonist which binds at the glutamate site.<br><br>Impairs learning and fear conditioning.                                                                                                                        |
| <b>Application notes</b>      | Water soluble <b>DL-AP5 sodium salt</b> also available.<br>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. |

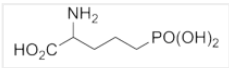
#### #Protocol 1: Evoked NMDA receptor currents

- 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 at +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<sub>A</sub>-R and AMPAR

## 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 <sub>5</sub> H <sub>12</sub> NO <sub>5</sub> P                                  |
| 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           | VOROEQBFPIACJ-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