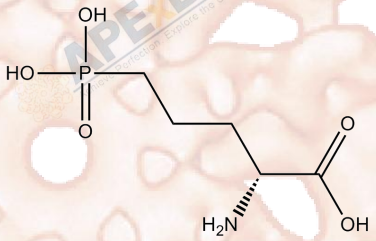
Product Data Sheet

DL-AP5



Cat. No.: B6204

CAS No.: 76326-31-3

Formula: C5H12NO5P

M.Wt: 197.13

Synonyms: DL-2-Amino-5-phosphonovaleric acid；2-APV

Target: NMDAR

Pathway: Membrane Transporter/Ion Channel; Neuroscience

Storage: Store at RT

Solvent & Solubility

In Vitro

insoluble in DMSO; insoluble in EtOH; ⩾3.8 mg/mL in H2O

Preparing Stock Solutions

Mass / Solvent / Concentration	1mg	5mg	10mg
1 mM	5.0728 mL	25.3640 mL	50.7279 mL
5 mM	1.0146 mL	5.0728 mL	10.1456 mL
10 mM	0.5073 mL	2.5364 mL	5.0728 mL

Please refer to the solubility information to select the appropriate solvent.

Biological Activity

Shortsummary

DL-AP5 (CAS 76326-31-3) is a synthetic, water-soluble compound classified as a competitive antagonist, functioning specifically at the N-methyl-D-aspartate (NMDA) receptor in neural tissues and exhibiting antagonist activity at NMDA receptor subtypes in additional neuronal targets. Additionally, it is known to inhibit excitatory neurotransmission mediated by NMDA receptors.

In experimental studies, DL-AP5 blocks NMDA-induced currents with an IC50 value of [ ], tested against isolated neuronal preparations and tissue slices. It can also suppress synaptic transmission by selectively inhibiting NMDA receptor-mediated responses without affecting responses from other glutamate receptor

	subtypes. In neuroscience research and electrophysiological applications, DL-AP5 is widely used for studying synaptic plasticity, mapping NMDA receptor functions, and deciphering the roles of NMDA receptors in processes such as long-term potentiation (LTP), neurotoxicity, and synaptic transmission.
IC_{50} & Target	

In Vitro	**Cell Viability Assay**	
	Cell Line:	Cortical neurons from Sprague-Dawley rats
	Preparation method:	Cortical neurons were treated with 0.5 mM glutamate (Glu) with or without the NMDAR antagonist DL-AP5 (100 μM), and the expression of Arc/Arg3.1 was detected by western blot.
	Reacting conditions:	DL-AP5 (100 μM) was used to block NMDAR.
	Applications:	DL-AP5 (100 μM) partially prevents glutamate-induced increase in Arc/Arg3.1 protein levels.

In Vivo	**Animal experiment**	
	Animal models:	Male Wistar rats (180-230 g)
	Dosage form:	1, 3.2 and 10 μg/rat
	Applications:	DL-AP5 (0-10 μg/rat, Intra-CA1) significantly decreases the effect of NMDA
	Preparation method:	Injected into the intra-dorsal hippocampal (intra-CA1) immediately after shock administration, once
	Other notes:	The technical data provided above is for reference only.

Product Citations

See more customer validations on www.apexbt.com.

References

1.Chen T, et al. Glutamate-induced rapid induction of Arc/Arg3.1 requires NMDA receptor-mediated phosphorylation of ERK and CREB. Neurosci Lett. 2017 Nov 20;661:23-28.

Caution

FOR RESEARCH PURPOSES ONLY.

NOT FOR HUMAN, VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

Specific storage and handling information for each product is indicated on the product datasheet. Most APExBIO products are stable

under the recommended conditions. Products are sometimes shipped at a temperature that differs from the recommended storage temperature. Shortterm storage of many products are stable in the short-term at temperatures that differ from that required for long-term storage. We ensure that the product is shipped under conditions that will maintain the quality of the reagents. Upon receipt of the product, follow the storage recommendations on the product data sheet.

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