bio-techne
TOCRIS

Print Date: Dec 13th 2023

Certificate of Analysis

www.tocris.com

Product Name: **D-AP5** **Catalog No.: 0106** **Batch No.: 73**

CAS Number: 79055-68-8

IUPAC Name: D-(-)-2-Amino-5-phosphonopentanoic acid

1. PHYSICAL AND CHEMICAL PROPERTIES

Batch Molecular Formula: $C_5H_{12}NO_5P$

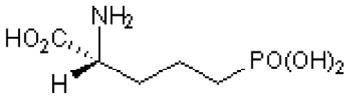
Batch Molecular Weight: 197.13

Physical Appearance: White solid

Solubility: water to 100 mM

Storage: Store at RT

Batch Molecular Structure:



2. ANALYTICAL DATA

TLC: R_f = 0.47 (Pyridine:Acetic acid:Water:Butanol [3:8:11:14])

HPLC: Shows 100% purity

Chiral HPLC: Shows 100% purity

^{1}H NMR: Consistent with structure

Mass Spectrum: Consistent with structure

Optical Rotation: $[\alpha]_D$ = -26.1 (Concentration = 1, Solvent = 6N HCl)

Microanalysis:

	Carbon	Hydrogen	Nitrogen
Theoretical	30.46	6.14	7.11
Found	30.39	6.17	7.12

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Product Name: D-AP5 **Catalog No.: 0106** 73

CAS Number: 79055-68-8

IUPAC Name: D-(-)-2-Amino-5-phosphonopentanoic acid

Description:

D-AP5 is a selective NMDA receptor antagonist that competes with glutamate binding and is commonly used to inhibit NMDA-dependent synaptic plasticity. D-AP5 is the more active isomer of DL-AP5 (Cat. No. 0105) and displays approximately 52-fold higher potency than the L-isomer, L-AP5 (Cat. No. 0107). In vitro D-AP5 reduces NMDA-induced depolarization of cortical neurons, with no effect on the response to L-Quisqualic acid (Cat. No. 0188) or Kainic acid (Cat. No. 0222). Following spinal injection, D-AP5 results in rapid reduction of NMDA-response but no effect on spontaneously active neurons. DL Mixture, L-isomer and sodium salt also ava... Please see product specific page on www.tocris.com for full description.

Physical and Chemical Properties:

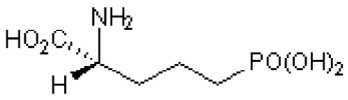
Batch Molecular Formula: $C_5H_{12}NO_5P$

Batch Molecular Weight: 197.13

Physical Appearance: White solid

Minimum Purity: ≥99%

Batch Molecular Structure:



Storage: Store at RT

Solubility & Usage Info:

water to 100 mM

When purchased as a 1mg unit, this product is supplied as a lyophilized solid and may be very hard to visualize. Solutions should be made by adding solvent directly to the vial. The vial should then be vortexed vigorously to ensure the product has completely dissolved.

Stability and Solubility Advice:

Some solutions can be difficult to obtain and can be encouraged by rapid stirring, sonication or gentle warming (in a 45-60°C water bath).

Information concerning product stability, particularly in solution, has rarely been reported and in most cases we can only offer a general guide. *Unless contradicted by product-specific protocols or instructions, our standard recommendations apply:

SOLIDS: Provided storage is as stated on the product label and the vial is kept tightly sealed, the product can be stored for up to 6 months from date of receipt.

SOLUTIONS: We recommend that stock solutions, once prepared, are stored aliquoted in tightly sealed vials at -20°C or below and used within 1 month. Wherever possible solutions should be made up and used on the same day.

References:

Schulte *et al* (1994) Utilization of the resolved L-isomer fo 2-amino-6-phosphonohexanoic acid (L-AP6) as a selective agonist for a quisqualate-sensitized site in hippocampal CA1 pyramidal neurons. Brain Res. ***649*** 203. PMID: 7953634.

Lodge *et al* (1988) A comparison between the *in vivo* and *in vitro* activity of five potent and competitive NMDA antagonists. Br.J.Pharmacol. ***95*** 957. PMID: 2905186.

Davies and Watkins (1982) Actions of D and L forms of 2-amino-5-phosphonovalerate and 2-amino-4-phosphonobutyrate in the cat spinal cord. Brain Res. ***235*** 378. PMID: 6145492.