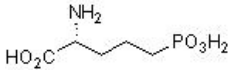
abcam

Product datasheet

D-AP5, NMDA glutamate site antagonist ab120003

267 References 4 Images

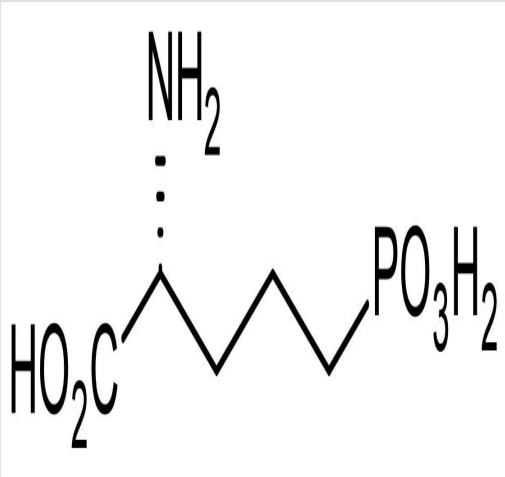
Overview

Product name	D-AP5, NMDA glutamate site antagonist
Description	NMDA glutamate site antagonist
Biological description	Competitive NMDA receptor glutamate site antagonist. More active form of DL-AP5. Also available in simple stock solutions (**ab144482**) - add 1 ml of water to get an exact, ready-to-use concentration.
CAS Number	79055-68-8
Chemical structure	

Properties

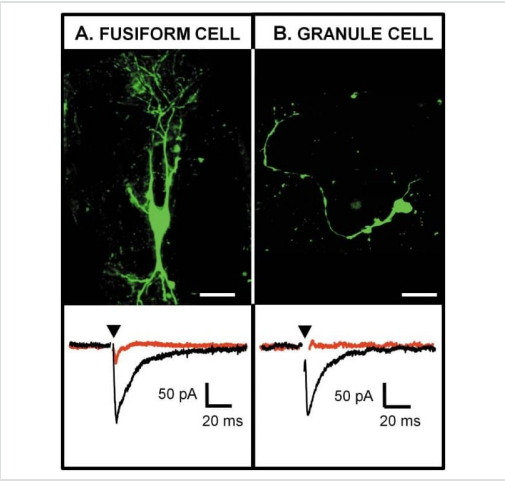
Chemical name	D-(-)-2-Amino-5-phosphonopentanoic acid
Molecular weight	197.13
Molecular formula	$C_5H_{12}NO_5P$
PubChem identifier	135342
Storage instructions	Store at +4°C. Store under desiccating conditions. The product can be stored for up to 12 months.
Solubility overview	Soluble in water to 100 mM
Handling	Wherever possible, you should prepare and use solutions on the same day. However, if you need to make up stock solutions in advance, we recommend that you store the solution as aliquots in tightly sealed vials at -20°C. Generally, these will be useable for up to one month. Before use, and prior to opening the vial we recommend that you allow your product to equilibrate to room temperature for at least 1 hour. Refer to SDS for further information. Need more advice on solubility, usage and handling? Please visit our **frequently asked questions (FAQ) page** for more details.
SMILES	N[C@H](CCCP(=O)(O)O)C(=O)O
Source	Synthetic

Images



Chemical Structure - D-AP5, NMDA glutamate site antagonist (ab120003)

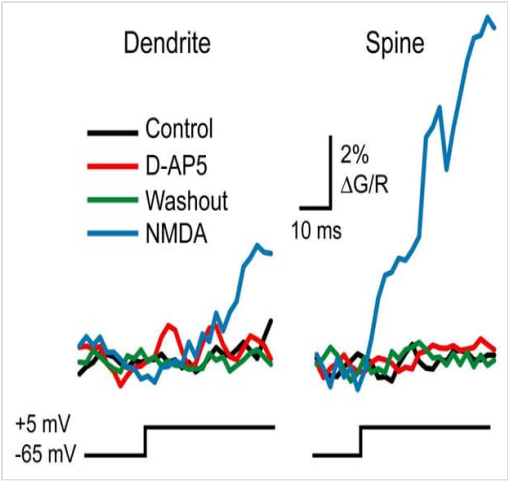
2D chemical structure image of ab120003, D-AP5, NMDA glutamate site antagonist



Cellular activation - D-AP5, NMDA glutamate site antagonist (ab120003)

Image from Barker M et al., Plos One, 7(5), e35955. Fig 1,; doi: 10.1371/journal.pone.0035955

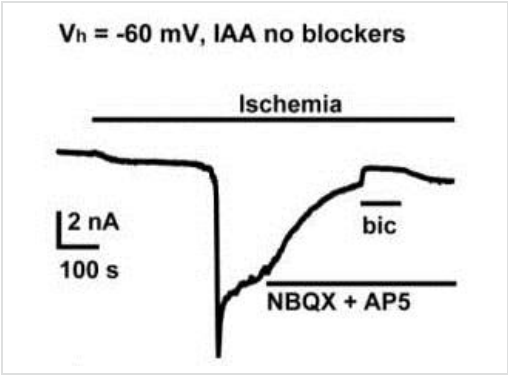
(A) Photomicrograph of a DCN fusiform cell filled with lucifer yellow (top) and whole cell voltage clamp recording of this fusiform cell while stimulating the LVN (bottom). (B) Photomicrograph of a DCN granule cell filled with lucifer yellow (top) and whole cell voltage clamp recording of this granule cell while stimulating the LVN (bottom). Both cells were held at -68 mV and the LVN was stimulated at 0.3 Hz. Glutamatergic EPSCs are represented in black and are blocked by 50 µm D-AP5 and 10 µm NBQX (traces in red). Each trace represents an average of 10-20 single traces. The arrowhead represents the artifact of stimulus that has been removed for clarity. Scale bar: (A) 50 µm, (B) 20 µm.



Functional Studies - D-AP5, NMDA glutamate site antagonist (ab120003)

Image from Herman MA et al., PLoS One. 2011;6(11):e26501. Fig 2(A).; doi: 10.1371/journal.pone.0026501. Reproduced under the Creative Commons license http://creativecommons.org/licenses/by/4.0/

Averaged Ca2+ transients (500 Hz line scans) evoked by 40 ms voltage step in a dendrite (left) and spine (right) in control (black), D-AP5 (red, 10 µM), after a 10 min washout of D-AP5 (green), and in 5 µM NMDA (blue). Mibefradil (20 µM), nimodipine (20 µM) and TTX (0.5 µM) were present throughout.



Functional Studies - D-AP5, NMDA glutamate site antagonist (ab120003)

Image from Brady JD et al., Neuroscience. 2010;168(1):108-17. Fig 3.; doi: 10.1016/j.neuroscience.2010.03.009 with permission from Elsevier.

Representative voltage-clamp recording (Vh= −60 mV, ECl−=+8 mV) of a Purkinje cells response to simulated ischemia and sequential block of glutamate receptors and GABAA receptors.

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