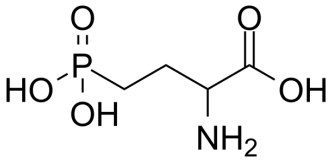
DL-AP4

Cat. No.:	HY-100743
CAS No.:	6323-99-5
Molecular Formula:	$C_4H_{10}NO_5P$
Molecular Weight:	183.1
Target:	Others
Pathway:	Others
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.



BIOLOGICAL ACTIVITY

Description	DL-AP4 (2-Amino-4-phosphonobutyric acid) is a glutamate antagonist. DL-AP4 behaves as a competitive inhibitor of glutamate binding with an apparent K_d of 66 μM. DL-AP4 can be used for the research of central nervous system and visual system[1][2][3].
IC_{50} & Target	Glutamate[1]
In Vitro	DL-AP4 (500 μM) reduces the tonic inward current by closing ion channels at holding potentials of -33 mV in isolated rod bipolar cells[1]. DL-AP4 (0.1 M; 1h) antagonizes the excitatory action of glutamate applied iontophoretically to receptors present in the locust muscle membrane[2]. DL-AP4 (compound 2) antagonizes excitatory synapses in the lateral perforant path of the rat hippocampal slice with an apparent K_d of 2.5 μM[3]. DL-AP4 (50 μM; 0-2 seconds) blocks the light response of a series of 10 ms 405-nm flashes, at the following strengths: 3, 10, 30, 100, 300, 990, 3000, 9900 photons $μm^{-2}$[4]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

REFERENCES

[1]. Cull-Candy SG, et al. 2-Amino-4-phosphonobutyric acid as a glutamate antagonist on locust muscle. Nature. 1976 Jul 29;262(5567):408-9.

[2]. Crooks SL, et al. Cyclic analogues of 2-amino-4-phosphonobutanoic acid (APB) and their inhibition of hippocampal excitatory transmission and displacement of [3H]APB binding. J Med Chem. 1986 Oct;29(10):1988-95.

[3]. Yamashita M, et al. Responses of rod bipolar cells isolated from the rat retina to the glutamate agonist 2-amino-4-phosphonobutyric acid (APB). J Neurosci. 1991 Aug;11(8):2372-82.

[4]. Ellis EM, et al. Separate ON and OFF pathways in vertebrate vision first arose during the Cambrian. Curr Biol. 2020 Jun 8;30(11):R633-R634.

Caution: Product has not been fully validated for medical applications. For research use only.

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