

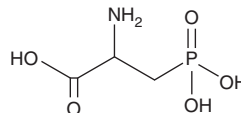
PRODUCT INFORMATION



DL-AP3

Item No. 13852

CAS Registry No.: 5652-28-8
Formal Name: 3-phosphono-alanine
Synonyms: DL-2-Amino-3-Phosphonopropionic Acid,
NSC 30078
MF: C₃H₈NO₅P
FW: 169.1
Purity: ≥95%
Supplied as: A crystalline solid
Storage: -20°C
Stability: ≥4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

DL-AP3 is supplied as a crystalline solid. Aqueous solutions of DL-AP3 can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of DL-AP3 in PBS (pH 7.2) is approximately 2 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

Metabotropic glutamate receptors (mGluR1-8) are G protein-coupled receptors that function to modulate brain excitatory signaling *via* presynaptic, postsynaptic, and glial mechanisms.¹ DL-AP3 is a competitive mGluR1 antagonist that demonstrates a K_i value of 298 μM and an IC₅₀ value of 1mM for rat mGluR1α when challenged with glutamate.² DL-AP3 can antagonize excitatory amino acid-induced phosphoinositide hydrolysis, induce Ca²⁺ mobilization in rat hippocampal slices, and inhibit phosphoserine phosphatase in rat brain cortex.^{1,3} At concentrations from 10-300 μM DL-AP3 has been used to characterize the role of mGluR in long-term potentiation in the hippocampus in a model of learning and memory, the release of glutamate in Parkinson's disease, and the increased activity of mGluR implicated in fragile X syndrome.⁴⁻⁶

References

1. Schoepp, D.D. Unveiling the functions of presynaptic metabotropic glutamate receptors in the central nervous system. *J. Pharmacol. Exp. Ther.* **299**(1), 12-20 (2001).
2. Schoepp, D.D., Jane, D.E., and Monn, J.A. Pharmacological agents acting at subtypes of metabotropic glutamate receptors. *Neuropharmacology* **38**(10), 1431-1476 (1999).
3. Hawkinson, J.E., Acosta-Burrueal, M., and Wood, P.L. The metabotropic glutamate receptor antagonist L-2-amino-3-phosphonopropionic acid inhibits phosphoserine phosphatase. *Eur. J. Pharmacol.* **307**, 219-225 (1996).
4. Otani, S., Connor, J.A., and Levy, W.B. Long-term potentiation and evidence for novel synaptic association in CA1 stratum oriens of rat hippocampus. *Learn. Mem.* **2**, 101-106 (1995).
5. Hao, L., Ding, J.-H., and Hu, G. Group I mGluR ligands fail to affect 6-hydroxydopamine-induced death and glutamate release of PC12 cells. *Acta. Pharmacol. Sin.* **24**(7), 641-645 (2003).
6. Xu, Z.-H., Yang, Q., Feng, B., *et al.* Group I mGluR antagonist rescues the deficit of D1- induced LTP in a mouse model of fragile X syndrome. *Mol. Neurodegener.* **7**(1), (2012).

WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

WARRANTY AND LIMITATION OF REMEDY

Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

Copyright Cayman Chemical Company, 11/14/2022

CAYMAN CHEMICAL

1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA

PHONE: [800] 364-9897
[734] 971-3335

FAX: [734] 971-3640

CUSTSERV@CAYMANCHEM.COM
WWW.CAYMANCHEM.COM