Hello Bio, Inc. 304 Wall St., Princeton, NJ 08540 USA

T. 609-683-7500 F. 609-228-4994

customercare-usa@hellobio.com



# **DATASHEET**

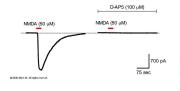
**NMDA** 

#### **Product overview**

NameNMDACat NoHB0454Biological actionAgonistPurity>99%

**Description** Prototypic NMDA receptor agonist

## **Images**







## **Biological Data**

Biological description Application notes Prototypic NMDA receptor agonist which mimics the action of glutamate. Potent excitant. The prototypic NMDA receptor agonist NMDA is effective at a range of concentrations and typically used at 100  $\mu$ M. NMDA from Hello Bio induces inward depolarising whole-cell currents in cortical neurons at 10  $\mu$ M with prominent currents at 50  $\mu$ M. The actions of NDMA were fully blocked by D-AP5 (NMDAR antagonist) at 100  $\mu$ M (see Fig 1 above).

#### **#Protocol 1: NMDA mediated whole-cell currents**

- Whole cell voltage clamp recordings were obtained from layer V neurons of the mouse prelimbic cortex brain slice.
- Neurons were held at -70 mV and continuously perfused with aCSF in the presence of AMPA and GABA receptor antagonists CNQX (10 μM) and Bicuculline (100 μM) respectively and Tetrodotoxin (1 μM) to reduce network activity.
- NMDA currents were evoked by applying NMDA directly to the recording chamber during continuous perfusion.
- To test the selectivity of NMDA to NMDA receptors the experiment was repeated within the same neuron in the presence of the NMDA receptor antagonist D-AP5 (100  $\mu$ M). Under these conditions NMDA failed to induce a depolarising current.

## **Solubility & Handling**

Storage instructions

Storage of solutions

**Shipping Conditions Important** 

Room temperature

Prepare and use solutions on the same day if possible. Store solutions at -20°C for up to one month if storage is required. Equilibrate to RT and ensure the solution is precipitate free before use.

Stable for ambient temperature shipping. Follow storage instructions on receipt.

This product is for RESEARCH USE ONLY and is not intended for therapeutic or diagnostic use. Not for human or veterinary use.

## **Chemical Data**

**Chemical name** N-Methyl-D-aspartic acid

**Molecular Weight** 

**Chemical structure** 

147.13 MeHN H HO<sub>2</sub>C

Molecular Formula C<sub>5</sub>H<sub>9</sub>NO<sub>4</sub> **CAS Number** 6384-92-5 **PubChem identifier** 22880

**SMILES** CN[C@H](CC(=O)O)C(=O)O

InChi InChl=1S/C5H9NO4/c1-6-3(5(9)10)2-4(7)8/h3,6H,2H2,1H3,(H,7,8)(H,9,10)/t3-/m1/s1

InChiKey HOKKHZGPKSLGJE-GSVOUGTGSA-N

MDL number MFCD00004226

#### References

N-methyl-D-aspartic acid (NMDA) in the nervous system of the amphioxus Branchiostoma lanceolatum.

D'Aniello S et al (2007) BMC Neurosci 8 **PubMedID** 18096065

Regulation of N-methyl-D-aspartic acid (NMDA) receptors by metabotropic glutamate receptor 7.

Gu Z et al (2012) J Biol Chem 287(13)

**PubMedID** 22287544

Occurrence of D-aspartic acid and N-methyl-D-aspartic acid in rat neuroendocrine tissues and their role in the modulation of luteinizing hormone and growth hormone release.

D'Aniello A et al (2000) FASEB J 14(5)

**PubMedID** 10744627