

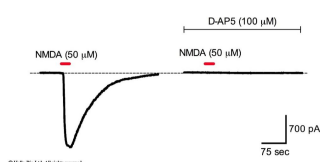
## DATASHEET

### NMDA

#### Product overview

<b>Name</b>	NMDA
<b>Cat No</b>	HB0454
<b>Biological action</b>	Agonist
<b>Purity</b>	>99%
<b>Description</b>	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  $\mu\text{M}$ . NMDA from Hello Bio induces inward depolarising whole-cell currents in cortical neurons at 10  $\mu\text{M}$  with prominent currents at 50  $\mu\text{M}$ . The actions of NDMA were fully blocked by **D-AP5** (NMDAR antagonist) at 100  $\mu\text{M}$  (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  $\mu\text{M}$ ) and **Bicuculline** (100  $\mu\text{M}$ ) respectively and **Tetrodotoxin** (1  $\mu\text{M}$ ) 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  $\mu\text{M}$ ). Under these conditions NMDA failed to induce a depolarising current.

#### Solubility & Handling

##### Storage instructions

Room temperature

**Solubility overview**  
**Important**

Soluble in water (100mM)

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

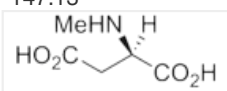
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## Chemical Data

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

**Molecular Weight** 147.13

**Chemical structure**



**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** InChI=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

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## 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](#)

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