

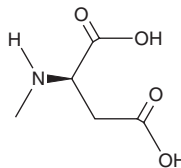
PRODUCT INFORMATION



NMDA

Item No. 14581

CAS Registry No.: 6384-92-5
Formal Name: N-methyl-D-aspartic acid
Synonym: N-Methyl-D-Aspartic Acid
MF: C₅H₉NO₄
FW: 147.1
Purity: ≥98%
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

NMDA is supplied as a crystalline solid. A stock solution may be made by dissolving the NMDA in the solvent of choice, which should be purged with an inert gas. NMDA is soluble in the organic solvent DMSO at a concentration of approximately 5 mg/ml.

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. Organic solvent-free aqueous solutions of NMDA can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of NMDA in PBS (pH 7.2) is approximately 10 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

NMDA is a synthetic amino acid derivative that acts as a specific agonist at the NMDA receptor, mimicking the excitatory action of the endogenous ligand glutamate.^{1,2} Signaling through the NMDA receptor influences both neuronal plasticity and neurotoxicity.³ Repetitive activation of NMDA synapses leads to long-term potentiation, which is used as a model of learning and the initial stages of memory formation.⁴

References

1. Ishii, T., Moriyoshi, K., Sugihara, H., *et al.* Molecular characterization of the family of the N-methyl-D-aspartate receptor subunits. *J. Biol. Chem.* **268**(4), 2836-2843 (1993).
2. Ferkany, J.W., Zaczek, R., and Coyle, J.T. Kainic acid stimulates excitatory amino acid neurotransmitter release at presynaptic receptors. *Nature* **298**(19), 757-759 (1982).
3. Nakanishi, S. Molecular diversity of glutamate receptors and implications for brain function. *Science* **258**(5082), 597-603 (1992).
4. Izquierdo, I. Role of NMDA receptors in memory. *Trends Pharmacol. Sci.* **12**(4), 128-129 (1991).

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.

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