

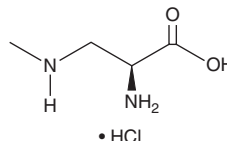
PRODUCT INFORMATION



β-Methylamino-L-Alanine (hydrochloride)

Item No. 23287

CAS Registry No.: 16012-55-8
Formal Name: 3-(methylamino)-L-alanine, monohydrochloride
Synonyms: BMAA, L-BMAA
MF: C₄H₁₀N₂O₂ • HCl
FW: 154.6
Purity: ≥95%
Supplied as: A solid
Storage: -20°C
Stability: ≥4 years
Item Origin: Synthetic



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

Laboratory Procedures

β-Methylamino-L-alanine (BMAA) (hydrochloride) is supplied as a solid. A stock solution may be made by dissolving the BMAA (hydrochloride) in the solvent of choice, which should be purged with an inert gas. BMAA (hydrochloride) is slightly soluble in methanol.

BMAA (hydrochloride) is slightly soluble in aqueous solutions. To enhance aqueous solubility, dilute the organic solvent solution into aqueous buffers or isotonic saline. If performing biological experiments, ensure the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. We do not recommend storing the aqueous solution for more than one day.

Description

BMAA is a neurotoxic non-proteinogenic amino acid that has been found in cyanobacteria.^{1,2} It is cytotoxic to mouse primary cortical neurons when used at a concentration of 3 mM in the presence of bicarbonate, an effect that can be blocked by the NMDA receptor antagonist MK-801 or the mGluR5 receptor antagonist MPEP (Item No. 14536).³ BMAA (3 mM) stimulates release of glutamate and induces oxidative stress in the same cells.⁴ It also enhances neuronal cell death induced by amyloid-β (25-35) in mouse primary cortical neurons when used at a concentration of 0.1 mM.³ Intracerebroventricular administration of BMAA (500 μg/animal) induces wet-dog shakes, rigidity, and clonic convulsions in rats.⁵ It induces parkinsonism in cynomolgus monkeys.⁶ BMAA has been found in commercial seafood.⁷

References

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3. Lobner, D., Piana, P.M.T., Salous, A.K., et al. *Neurobiol. Dis.* **25**(2), 360-366 (2007).
4. Liu, X., Rush, T., Zapata, J., et al. *Exp. Neurol.* **217**(2), 429-433 (2009).
5. Matsuoka, Y., Rakoncay, Z., Giacobini, E., et al. *Pharmacol. Biochem. Behav.* **44**(3), 727-734 (1993).
6. Spencer, P.S., Nunn, P.B., Hugon, J., et al. *Science* **237**(4814), 517-522 (1987).
7. Jiang, L., Kiselova, N., Rosén, J., et al. *Sci. Rep.* **4**, 6931 (2014).

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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