

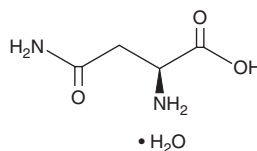
PRODUCT INFORMATION



L-Asparagine (hydrate)

Item No. 34519

CAS Registry No.: 5794-13-8
MF: $C_4H_8N_2O_3 \cdot H_2O$
FW: 150.1
Purity: $\geq 95\%$
Supplied as: A solid
Storage: $-20^\circ C$
Stability: ≥ 4 years



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

Laboratory Procedures

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

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 L-asparagine (hydrate) can be prepared by directly dissolving the solid in aqueous buffers. L-Asparagine (hydrate) is slightly soluble in PBS (pH 7.2). We do not recommend storing the aqueous solution for more than one day.

Description

L-Asparagine is a non-essential amino acid.¹ It is formed from L-aspartic acid and L-glutamine (Item No. 23716) by asparagine synthetase (ASNS), and it is deamidated by L-asparaginase to produce L-aspartic acid and ammonia.^{2,3} L-Asparagine (0.3 mM) reverses ASNS siRNA knockdown-induced decreases in proliferation in a panel of six human cancer cell lines, indicating that both exogenous and endogenous L-asparagine promote proliferation of these cells.⁴ Formulations containing L-asparagine have been used as dietary supplements.

References

1. Chiu, M.I., Taurino, G., Bianchi, M.G., *et al.* Asparagine synthetase in cancer: Beyond acute lymphoblastic leukemia. *Front. Oncol.* **9**, 1480 (2020).
2. Zhu, W., Radadiya, A., Bisson, C., *et al.* High-resolution crystal structure of human asparagine synthetase enables analysis of inhibitor binding and selectivity. *Commun. Biol.* **2**, 345 (2019).
3. Covini, D., Tardito, S., Bussolati, O., *et al.* Expanding targets for a metabolic therapy of cancer: L-Asparaginase. *Recent Pat. Anticancer Drug Discov.* **7(1)**, 4-13 (2012).
4. Pathria, G., Lee, J.S., Hasnis, E., *et al.* Translational reprogramming marks adaptation to asparagine restriction in cancer. *Nat. Cell Biol.* **21(12)**, 1590-1603 (2019).

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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