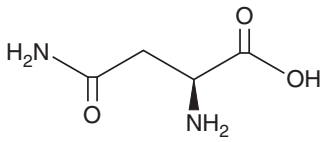
PRODUCT INFORMATION

L-Asparagine

Item No. 35022

CAS Registry No.: 70-47-3
Synonyms: α-Aminosuccinic Acid, (-)-Asparagine, (S)-Asparagine, NSC 82391
MF: $C_4H_8N_2O_3$
FW: 132.1
Purity: ≥95%
Supplied as: A 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

L-Asparagine is supplied as a solid. Aqueous solutions of L-asparagine can be prepared by directly dissolving the solid in aqueous buffers. The solubility of L-asparagine in PBS (pH 7.2) is approximately 5 mg/ml. 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).

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