



L-Glutamine (200 mM)

For research use only

Catalogue number: BI-1202

Product Description

L-glutamine is an essential amino acid required for most cultured cell growth. It is a major source of nitrogen, carbon, and energy. However, misuse of glutamine can be harmful to cells due to ammonia/ammonium ions produced from glutamine. Ammonia has been reported for decades to be toxic and inhibitory to mammalian cell growth and cause reducing cell growth rate, lowering cell density. Ammonia and ammonium ions co-exist in the solution and the relative amount of each species depends on pH of the solution. The main source of ammonia in cell culture is the glutamine through two alternative routes, including metabolic degradation of L-glutamine in the mitochondria, and spontaneous decomposition due to the instability of L-glutamine at physiological pH in liquid media. The rate of L-glutamine breakdown to the ammonia and pyroglutamate is highly temperature-dependent. The L-glutamine has a range of half-life including 2 months at 4° C and 1 week at 36° C. However, both the powder form and frozen solution are very stable. The recommended concentration of L-Glutamine ranges from 0.5 to 10mM depending on the type of medium.

Specification

- **Concentration:** 200 mM, 100 X
- **Product Size:** 100 mL
- **Classification:** Animal Origin-Free
- **For cell culture applications**

Quality Control

- **Appearance:** Clear, colorless solution
- **Sterility:** tested
- **Storage:** -5°C to -20°C; Protect from light.
- **Shelf life:** 12 months
- **Shipping conditions:** Dry ice

Notes

- Respect storage conditions of the product.
- Do not use the product after its expiry date.
- L-glutamine may precipitate during the thawing process. The bottle may be placed in a 37°C water bath and gently swirled during thawing to get L-glutamine back into solution. Do not leave the bottle in the water bath once the product has been thawed.
- Manipulate the product in aseptic conditions (e.g. under laminar air flow).
- To avoid contamination, wear clothes adapted to the manipulation of the product (e.g. gloves, mask, and hygiene cap).
- In order to preserve the quality of the product, it is recommended to thaw out and aliquote the flask in several tubes.



References

1. Schneider M., Marison I.W., Stockar U.V. The importance of ammonia in mammalian cell culture. *Minireview, J. Biotech nol.* 1996, 46:161-185.
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Citations

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2. Vahdati, Akbar, et al. "The regenerative effect of bone marrow-derived stem cells in spermatogenesis of infertile hamster." *World journal of plastic surgery* 6.1 (2017): 18.
3. Mehrabani, Davood, et al. "Growth kinetics and characterization of human dental pulp stem cells: Comparison between third molar and first premolar teeth." *Journal of clinical and experimental dentistry* 9.2 (2017): e172.
4. Ghobadi, Farnaz, et al. "Endometrial mesenchymal stem stromal cells in mature and immature sheep: An in vitro study." *International Journal of Reproductive Biomedicine* 16.2 (2018): 83.
5. Aleahmad, Fatemeh, et al. "Fabrication and Characterization of Heparin/Collagen Sponge for in Vitro Differentiation of Wharton's Jelly-Derived Mesenchymal Stem Cells into Hepatocytes." *Hepatitis Monthly* 17.2 (2017).
6. Hashemzadeh, Mohammad Sadegh, et al. "Designing Two Individual AcMNPV Polyhedrin-Plus Bac-to-Bac Expression System in order to Express GFP and CPV-VP2 in Insect Cells." *Iranian Journal of Biotechnology* 15.3 (2017): 172-178.
7. Aleahmad, Fatemeh, et al. "Heparin/Collagen 3D Scaffold Accelerates Hepatocyte Differentiation of Wharton's Jelly-Derived Mesenchymal Stem Cells." *Tissue Engineering and Regenerative Medicine* 14.4 (2017): 443-452.
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