

Product Name

Name: L-Glutamine Solution (200 mM)

Cat. No.: C3543-0100, C3543-0500

Size: 100 mL, 500 mL

Product Description

L-Glutamine, a precursor of Glutamate, is one of the most readily available sources of energy for many rapidly dividing cell types for use *in vitro*. This amino acid is formed from glutamic acid by the action of glutamine synthetase. It is a clear, colorless solution at 37°C and is a key component and essential amino acid that is found in many cell-culture media formulations and in virtually all mammalian cells in culture.

Glutamine is one of the twenty amino acids commonly found and directly incorporated into proteins. It has an amide group formed at the γ -carboxyl of the amino acid glutamate. Glutamine can participate in covalent cross-linking reactions between proteins, by forming peptide-like bonds by a transamidation reaction with lysine residues on another protein or chain. This reaction, catalyzed by clotting factor XIII, stabilizes the aggregates of fibrin formed during blood clotting. This cross-linking or aggregation reaction is catalyzed by a transamidase enzyme. Media for animal cell culture contain 10 times more glutamine than other amino acids, the excess presumably acting as a carbon source. A significant portion of the energy required to maintain cell growth of the energy produced can vary with cell type and comes from the oxidation of L-Glutamine. This is a consequence of the importance of L-Glutamine not only as an energy source but also its role in protein synthesis. The high concentrations of L-Glutamine present in different formulations may also be due to its somewhat unstable nature in solution.

L-Glutamine is also suitable for molecular biology applications. Most commercially available media are formulated with L-glutamine which is either included in the basal formula or added as a supplement to the liquid formulations at the time of use. Always use an aseptic technique when handling or supplementing media after filtration.

Due to the unstable nature of L-Glutamine, the dipeptide form (L-Alanyl-L-Glutamine) is a more stable form in solution and it is also autoclavable without much decomposition.

Predominant Characteristics

- Non-animal source
- Cell culture performance & endotoxin level tested
- Suitable for cell-culture & molecular biology applications
- Relatively long-term storage when handled and stored properly under specified conditions

Storage and Stability

The product should be kept at **-20°C**.

The product is **light-sensitive** and therefore should not be left in the light.

Shelf life: 24 months from date of manufacture.

Procedure

1. Take a bottle from the freezer at -20°C and read the label.
2. Ensure that the cap of the bottle is tight.
3. Allow to thaw to room temperature prior to use.
4. Gently swirl the solution in the bottle intermittently until all the content is thawed.
5. Wipe the outside of the bottle with a disinfectant solution such as 70% ethanol.
6. Pipette appropriate volume using an aseptic/sterile technique under a laminar-flow culture hood.
7. Aliquot the remaining solution and put them back to freezer to avoid repeated freezing and thawing.

Quality Control

L-Glutamine Solution (200 mM) is tested for sterility, pH, osmolality.

Precaution and Disclaimer

For research use only, not for clinical diagnosis, and treatment.