

Q&A

Q1: What is the best way to store serum?

A: Serum for long time storage must be stored in a refrigerator at -10°C or lower. Studies have shown that serum stored at -80°C has no change in performance, but the huge temperature difference during thawing will lead to more precipitation. Therefore, storage at -80°C is not recommended. Serum should not be stored in the refrigerator at 4°C for more than 1 month. If you cannot use up one bottle at a time, it is recommended to store it in separate packages to avoid repeated freezing and thawing. The frozen volume of the serum will increase by about 10%, please reserve a certain volume space.

Q2: How to thaw serum without compromising product quality?

A: Thaw the frozen serum in a refrigerator at 4°C , and then transfer it to room temperature to thaw completely. During the melting process, shake evenly to make the temperature and ingredients uniform and reduce the occurrence of precipitation.

Q3: What should I do if flocculent precipitates are found after the serum is thawed?

A: The sediment is mainly caused by lipoprotein denaturation and fibrin precipitation in the serum. It will not affect the quality of the serum itself. It can be removed by centrifugation at $500\text{-}1000\times\text{g}$ for 5-10 minutes, or be left untreated.

Q4: What is the role of heat-inactivated serum?

A: Heating can inactivate the complement system. Complement participates in the following reactions: cytotoxicity, contraction of smooth muscle cells, release of histamine from cells and platelets, increased phagocytosis, and promotion of chemotaxis and activation of lymphocytes and macrophages. Heat-inactivated serum is recommended for culturing insect cells and smooth muscle cells.

Q5: How to distinguish the precipitation and contamination of serum?

A: After standing for a period of time, the former upper layer is clear, while the latter is always turbid.

Q6: What is the precipitate in the serum?

A: Various types of precipitates exist in fetal bovine serum and other serum products used for cell culture, the common ones are fibrin and calcium phosphate. Fibrin is usually a large flocculent precipitates (up to 1-2 mm) visible to the naked eye; calcium phosphate is observed as small black spots under the microscope, and is usually mistaken for microbial contamination due to Brownian motion. Precipitation in serum is often difficult to predict and control, but fortunately these precipitations will not affect the quality of serum.