

Proper storage and thawing method of FBS

1. After FBS thawing, why does clots of fleece shape appear? And how affect it to cell culture?

During FBS thawing, the most important thing is to shake slowly every 5~10 minutes until thawed all, minimizing bubbles. If the process does not work correctly, concentration gradient with insoluble crystals of fleece shape(cryoprecipitates) can be generated result from imbalance of salt and protein.

The cryoprecipitates is little effect on cell culture. In particular, thawed FBS should not be refrigerated and if you don't follow the precautions, the clots can be caused a lot of further. Because of this, aliquots of thawing must be frozen keep. The cryoprecipitates is not a defect or fault of product.

2. What is proper storage and use method of FBS?

1) Proper FBS thawing process(for minimizing deposits)

While FBS thawing, shake it slowly every 5 ~ 10 minutes minimizing bubbles for breaking concentration gradient.

- ★ Fill water in water bath almost to top of FBS(except cap) and raise temperature of water both by 37°C..
- ★ Put frozen FBS in water bath and thaw it by shaking slowly ever 5~10 minutes until breaking concentration gradient.
- ★ After thawing all, take out and spray 70% alcohol on the surface of bottle.
- ★ Divide FBS into 20~100ml in clean bench.
- ★ Freeze divided FBS as soon as possible. And keep FBS in refrigerator if it is used in a day or two. But keep in mind FBS kept in refrigerator can generate more clots than one in freezer.
- ★ If Heat-Inactivation process is needed, proceed as follows (in case of buying products that Heat-Inactivation completed, this process is unnecessary)
 - Put thawed FBS in 56°C water bath and proceed Heat-Inactivation for 30 minutes.
 - Shake FBS slowly every 5~10 minutes minimizing bubbles and not making concentration gradient like thawing process. If this Heat-inactivation proceeded irregularly, lots of clots can be generated than thawing process.

2) Must storage FBS in a freezer without automatic frost-free function. (Avoid storage in a home refrigerator/freezer, which has frost-free function.)

Must Storage in a freezer without automatic frost-free function for preventing deterioration of FBS from temperature change. A freezer with automatic frost-free function change the temperature automatically for preventing frost, so it can cause reduce the quality of FBS by freezing and thawing the surface of product repeatedly. And give attention that product bottle can be broken in temperature.

3) Minimize freezing-thawing process

Temperature change from freezing-thawing process destroys protein, growth factor, hormone and other nutrient. Thus, it is necessary to minimize freezing-thawing process. After first thawing, divide FBS into amount used to once or twice(20~100ml) and frozen. This can reduce iterative freezing-thawing process and thawing hours. At this time attention not to exceed maximum volume 40ml in 50ml conical tube and 90ml in 100ml glass bottle considering of FBS expands as it freezes.