

Product Information

Fetal Bovine Serum USA origin, Ultra Low IgG

Product Number **F1283**
Storage Temperature $-20\text{ }^{\circ}\text{C}$

Synonyms: FBS, FCS, Fetal Calf Serum

Product Description

Animal serum is commonly used to supplement basal media formulations for the optimal growth of many cell types *in vitro*.

Fetal Bovine Serum (FBS) is the most common serum used to supplement cell culture media due to its high nutritional content. Although it is relatively low in protein, FBS is effective in promoting and sustaining growth of vertebrate mammalian and insect cells.

IgG is the most common immunoglobulin present in FBS. Elevated levels of IgG may cause problems within certain recombinant protein or monoclonal antibody purification processes. For applications where IgG may interfere or cause issues, the IgG levels in this fetal bovine serum have been depleted by sequential chromatography down to a level of $<5\text{ }\mu\text{g/mL}$, while maintaining performance equivalent to regular FBS.

Raw Serum Process

Blood is collected at United States Department of Agriculture (USDA) approved abattoirs located within the USA. The fetal blood is aseptically collected and allowed to clot under controlled conditions. After centrifugation, the raw (unfiltered) serum is decanted from the clot, pooled, and immediately frozen.

Filtration and Packaging

Frozen raw serum is thawed under controlled conditions and then processed through a series of membrane filters in descending pore size. FBS is filtered through three $0.1\text{ }\mu\text{m}$ filters before being dispensed into sterilized, graduated plastic bottles and sealed with a tamper indicator. Bottles are immediately frozen and stored at $-10\text{ to }-40\text{ }^{\circ}\text{C}$.

Traceability

The material used in this product is collected in the United States. This product is derived from the fetuses of clinically healthy cattle which were subjected to pre and post slaughter inspection by the competent authority of the United States at approved slaughter facilities. A Certificate of Analysis indicating the country of origin is available for each lot of serum.

Characteristics

Adventitious Viral Agents (9CFR 113.53)
Record

Electrophoretic Profile
Normal pattern

Endotoxin
 $\leq 10.0\text{ EU/mL}$

Growth Promotion
 $\geq 75\%$ of control

Hemoglobin
 $\leq 20\text{ mg/dL}$

Mycoplasma
(*Broth Culture and DNA Fluorochrome stain*)
None detected

Osmolality
 $260\text{--}330\text{ mOsm/Kg H}_2\text{O}$

pH
 $6.8\text{--}8.1$

Sterility
No microbial growth detected

Total Protein
 $30\text{--}45\text{ mg/mL}$

Precautions and Disclaimer

For R&D use only. Not for drug, household, or other uses.

For stability and optimal performance, serum should be stored at -20°C and used prior to the labeled expiration date.

Preparation Instructions

Use aseptic technique when handling serum. Re-filtering sterile FBS before or after being added to sterile medium is not recommended because its growth promoting capabilities may be reduced.

Thawing Instructions

1. Remove the serum bottles from the freezer and allow them to acclimate to room temperature for ~10 minutes.
2. Place each container in a $30\text{--}37^{\circ}\text{C}$ water bath or incubator. Excessive temperatures may degrade heat labile nutrients. If using a water bath, prevent the bottle caps from being completely submerged.
3. Gently swirl the bottles every 10–15 minutes until the serum is completely thawed and homogenous.
4. After thawing, use the serum promptly. Thawed serum may be stored refrigerated ($2\text{--}8^{\circ}\text{C}$) up to four weeks. To avoid thaw/freeze cycles or long periods of refrigeration, it is recommended that any unused serum be immediately dispensed into smaller aliquots and refrozen for future use.

Gentle, periodic agitation is crucial for optimum product performance. If a bottle of serum is not periodically swirled as it thaws, gradients containing high concentrations of salts, proteins, and lipids may form throughout the liquid portion and lead to the formation of crystalline or flocculent precipitates. These cryoprecipitates are not toxic to cell cultures, but they affect the appearance and consistency of each bottle of serum. Small amounts of cryoprecipitates are not uncommon, and will not affect product performance. Gently warming and mixing the serum will generally allow the material to go back into solution.

Storage/Stability

To effectively preserve the integrity of animal serum, it should be stored frozen and protected from light. Multiple thaw/freeze cycles should be avoided as they may hasten the degradation of serum nutrients and can result in the formation of insoluble precipitates.

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