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Product Information

Fetal Bovine Serum Sourced in Australia

Catalogue No. 12003C

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 mammalian and insect cells.

Raw Serum Process

Fetal blood is aseptically collected from animals which were slaughtered under government veterinary supervision in an establishment approved by the government veterinary authority. They were inspected ante-mortem and post-mortem and found free of any evidence of infectious or contagious disease. The blood is allowed to clot under controlled conditions after which it is centrifuged prior to the raw (unfiltered) serum being 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 of descending pore size, including triple 0.1 µm filters. Integrity tests are conducted on the sterilizing filter pre- and post-filtration by bubble point and diffusive flow methods. The serum filtration process meets the sterility assurance level of 10–3 as verified by aseptic media fill validation. Serum is dispensed under HEPA filtered, Class 100 conditions. Serum is packaged in sterilized, graduated plastic bottles and sealed with a tamper indicator. Bottles are identified with sequentially numbered labels and frozen at –10 to –40 °C.

Traceability

The material used in this product is collected in Australia. The FBS is not collected from cattle born, raised, shipped through or slaughtered in countries where bovine spongiform encephalopathy (BSE) is known to exist. A Certificate of Analysis indicating the country of origin is available for each lot of FBS.

Precautions

This product is for further manufacturing use. THIS PRODUCT IS NOT INTENDED FOR HUMAN OR THERAPEUTIC USE.

Use aseptic technique when handling FBS. Refiltering sterile FBS before or after being added to sterile medium is not recommended because the growth promoting capability may be reduced.

Storage

To effectively preserve the integrity of FBS, it should be stored frozen and protected from light. For stability and optimal performance, FBS should be stored at –10 to –40 °C and used prior to the labeled expiration date. Multiple thaw/freeze cycles should be avoided as they may hasten the degradation of FBS nutrients and can result in the formation of insoluble precipitates.

The life science business of Merck KGaA, Darmstadt, Germany
operates as MilliporeSigma in the U.S. and Canada.

Preparation Instructions

Thawing

1. Remove the serum bottles from the freezer and allow them to acclimate to room temperature for approximately 10 minutes.
2. Place each container in a 30–37 °C water bath or incubator. Excessive temperatures will 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 FBS is completely thawed and homogenous.
4. After thawing, use the FBS promptly. FBS may be stored refrigerated (2–8 °C) up to four weeks. To avoid thaw/freeze cycles or long periods of refrigeration, it is recommended that any unused FBS be immediately dispensed into small, useful aliquots and refrozen for future use.

Periodic agitation is crucial to optimum serum performance. If a bottle of FBS is not periodically swirled as it thaws, gradients containing high concentrations of salts, proteins and lipids will 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 between bottles. Small amounts of cryoprecipitates are not uncommon, and will not affect product performance. Gently warming and mixing the FBS will generally allow the material to go back into solution.

Characteristics

Adventitious Viral Agents (9CFR 113.53)
None detected

Electrophoretic Profile
Normal pattern

Endotoxin
≤ 10.0 EU/mL

Hemoglobin
≤ 25 mg/dL

Mycoplasma (EP 2.6.7)
None detected

Osmolality
260–330 mOsm/kg H_2O

pH (at 25 °C)
6.8–8.1

Sterility (Current USP/EP/9CFR)
No microbial growth detected

Total Protein
3.0–4.5 g/dL

Other test results are recorded, including but not limited to: growth promotion, plating efficiency, virus antibody, and bovine IgG.

Technical Assistance

For more information, please visit **www.sigmaaldrich.com** for up-to-date worldwide contact information

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