

Dialyzed Fetal Bovine Serum, US Origin

HYCLONE SERA

HyClone™ Dialyzed Fetal Bovine Serum (FBS) is used in applications requiring serum depleted from low-molecular weight components of less than M_r 10 000 (Fig 1). The serum is subjected to dialysis through a diafiltration process that reduces concentrations of small molecules such as nucleotides and amino acids that are necessary for alternative biochemical survival pathways. The process reduces hypoxanthine and thymidine concentrations below detectable levels. While producing the same results, a major difference between diafiltration and traditional dialysis is that the driving force for diafiltration is hydrostatic pressure, rather than the concentration gradient for traditional dialysis. Monitoring glucose concentrations carefully controls the diafiltration process. The glucose concentration, which is representative of the extent of dialysis, is reported for each lot of serum.

Key features of Dialyzed FBS, US Origin:

- Sourced in the US
- Complete traceability back to original source
- Low in antibodies and high in growth factors
- Virus panel testing according to 9 CFR 113.53
- Produced using true pool technology for uniformity and consistency from bottle to bottle within a lot

Specifications

Dialyzed FBS is filtered through three sequential 100 nm (0.1 μ m) pore size-rated filters. Before dispensing, each lot of serum is pooled to ensure uniformity and consistency between bottles (true pool technology).

Dialyzed FBS is assayed for progesterone, magnesium, insulin, selenium, parathyroid hormone (PTH), IgG, cholesterol, potassium, high density lipo-protein cholesterol, calcium, low density lipo-protein cholesterol chloride, triglycerides, copper, gamma globulin, glucose, phospholipids, osmolality, alkaline phosphatase, iron, lactate dehydrogenase, total iron binding capacity (TIBC), glutamic pyruvic transaminase (SGPT), percent saturation, glutamic oxaloacetic transaminase (SGOT), thiamine (B1), riboflavin (B2), pyridoxine (B6), nicotinic acid (niacin),



Fig 1. Dialyzed FBS is used in applications where serum depleted from low-molecular weight compounds is required.

vitamin H (biotin), vitamin A (retinol), carotene, total vitamin E (tocopherol), cyanocobalamine (B12), pteroylglutamic acid (folate), vitamin C, 1,25 dihydroxy vitamin D, pH, total protein, albumin, blood urea nitrogen, creatinine, total bilirubin, sodium, and inorganic phosphorus. Assays are subject to change without notice.

Product storage and handling

Sera should be stored at -10°C or below. Once thawed, sera can be stored at 2°C to 8°C for up to six weeks in order to maintain quality. If the serum needs to be stored longer than six weeks after opening, it is recommended to aliquot the serum into convenient volumes and refreeze. Handle bottles that have been stored in freezer carefully. Avoid large temperature shifts and protect the serum from exposure to light. Refer to safety data sheet for any safety recommendations. Storage requirements are listed on the product label.

Thawing

Remove serum from storage at -10°C or lower and place in a refrigerator overnight at 2°C to 8°C. Transfer the serum to a 37°C water bath, agitate periodically to mix the solutes concentrated at the bottom of the container. Do not hold the serum at 37°C any longer than necessary after thawing. Thawing serum in a bath above 40°C without mixing can denature the concentrated proteins in the bottom of the container and precipitates might form in the bottle. Thawing serum at higher temperatures is not recommended.

Alternatively, bottles can be placed directly from storage at -10°C or lower into a 37°C water bath. Bottles should be agitated to enhance mixing and thawing. Turbidity and flocculent material might be present after thawing or after prolonged storage.

Experience indicates that regardless of the method used to thaw serum, it is critical that it is mixed during the thawing process to prevent the formation of gradients and subsequent precipitation. Because of differences in thawing rates of different components, serum will form a gradient if it is not mixed as it thaws. If serum is allowed to remain in such a gradient state, precipitation is likely to occur.

Quality control testing

Quality control test specifications are listed in Table 1.

Table 1. Test specifications

Endotoxin (Limulus amoebocyte lysate gel clot assay)	≤ 10 EU/mL
Hemoglobin (spectrophotometric)	≤ 10 mg/dL
Sterility testing (current USP)	
Bacteria and fungi	No growth
Virus Testing (9 CFR 113.53)	
Fluorescent antibody	
Bluetongue	Not detected
Bovine adenovirus	Not detected
Bovine parvovirus	Not detected
Bovine respiratory syncytial virus	Not detected
Bovine viral diarrhea virus	Not detected
Rabies	Not detected
Reovirus	Not detected
Cytopathogenic agents (e.g., IBR)	Not detected
Hemadsorbing agents (e.g., PI3)	Not detected
Mycoplasma	
Large volume, direct culture	Not detected
Hoechst DNA stain	Not detected
Certificate of suitability	Included

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General culture recommendations

Supplementation of classical media such as Dulbecco's Modified Eagle's Medium (DMEM) is recommended at a range between 5% and 10% Dialyzed FBS to support culture of a wide variety of cell lines and applications.

Related products

HyClone classical media

HyClone classical media are manufactured using ISO 9001- and ISO 13485-certified processes. All raw material components have passed strict quality control testing to ensure the appropriate level of quality. The classical media are hydrated using purified process water and have undergone 0.1 µm sterile filtration.

HyClone phosphate buffered saline (PBS)

Our PBS products are manufactured according to cGMP guidelines using ISO 9001- and ISO 13485-certified processes. The products have full traceability and documented origin of all formula ingredients.

HyClone trypsin protease

Our trypsin protease is derived from porcine pancreas and is gamma irradiated prior to hydration and filling. The product is formulated without calcium and magnesium.

Ordering information

Product	Size	Product code
HyClone Dialyzed Fetal Bovine Serum, US Origin	100 mL	SH30079.01
	500 mL	SH30079.02
	1000 mL	SH30079.03

Find certificates of analysis, safety data sheets, standard formulations, product inserts, and protocols at www.cytiva.com/hyclonecerts.

