Certificate of Analysis

Ultra-Low IgG Fetal Bovine Serum One Shot(TM)
Specialty
Origin: United States
Performance, Mycoplasma,
Virus and Endotoxin tested
BVD antibody tested

Catalog Number:	A33819
Lot Number:	1914776
Storage Temperature:	-5 to -20C
Country of Origin:	US
Expiration Date:	2019-08
Originated From:	1914776_P01/16250

For research use or further manufacturing use only. Serum and blood proteins are not for direct administration into humans or animals.

Sterile filtered (triple 0.1 um)

TEST	SPECIFICATION	RESULT	UNITS
[1] BVD Neutralization Assay	Check & Record	Negative	
[2] BVD Neutralization Titer	Check & Record	1:4	Ratio
[3] Determination of Bovine IgG Elisa Assay	>=0 to <=4.9	<0.1	ug/mL
[4] Electrophoretic Pattern	Normal	Normal	
[5] Endotoxin Testing	>=0 to <=50	<0.50	EU/mL
[6] Hemoglobin	>=0 to <=25	10.0	mg%
[7] Mycoplasma, Supplemental (H-Stain)	Negative	Negative	
[8] Mycoplasma Testing	Negative	Negative	
[9] Osmolality	>=300 to <=330	313	mOsm/kg
[10] Performance Testing: Cloning Assay	Check & Record	98	%
[11] Performance Testing: Growth Assay	Check & Record	84	%
[12] Performance Testing: Plating Assay	Check & Record	95	%
[13] pH	>=6.9 to <=7.8	7.1	
[14] Sterility Testing	Negative	Negative	
[15] Total Protein	Check & Record	3.5	g/dL
[16] VT - Bluetongue Virus FA	Negative	Negative	
[17] VT - Bovine Adenovirus FA	Negative	Negative	

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[18] VT - Bovine Parvovirus FA	Negative	Negative
[19] VT- BRSV Fluorescent Antibody	Negative	Negative
[20] VT - BVDV Fluorescent Antibody	Tested	Tested
[21] VT - Cytopathogenic Agents	Negative	Negative
[22] VT - Hemadsorbing Agents	Negative	Negative
[23] VT - Rabies Virus FA	Negative	Negative
[24] VT - Reovirus FA	Negative	Negative

Read SDS

GIBCO brand, Life Technologies cell culture liquid products are prepared by an aseptic process for which each step has been validated to ensure that all products meet the industry standard sterility assurance level of 10^-3; i.e. product that demonstrates a contamination level of no more than 1 of 1,000 units during the manufacturing process. The highest level of sterility assurance (equal to or greater than 10^-6) cannot be achieved without terminal sterilization which is harmful to the performance of cell culture products.

We certify that all Fetal Bovine Sera meets USDA requirements for abbatoir-sourced animals, traceability and country of origin. ABBATOIR-SOURCED ANIMALS: All fetal blood is collected from fetuses derived from healthy dams that have passed pre and post mortem certified veterinary inspection. TRACEABILITY: All Fetal Bovine Sera is traceable by date and location of collection. COUNTRY OF ORIGIN: Fetal Bovine Serum collected and processed in the United States is from USDA approved and inspected slaughter establishments. The United States is recognized by the USDA as being free of foot and mouth disease and rinderpest.

NOTICE: Since our sera are not pre-aged before filtration, turbidity or flocculent debris may develop upon thawing or storage. This condition does not adversely affect performance characteristic of the serum.

Barbara J Schuler

Quality Systems Department Date: 01-Nov-2017

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REFERENCES:

1 Life Technologies Specifications.

2 Life Technologies Specifications.

3 Life Technologies Specifications.

4 Protein Electrophoresis - Life Technologies Specifications

5 Current United States Pharmacopeia, <85> Bacterial Endotoxins Test.

6 Fleming, A.F. and Woolf, A.J. (1965) Clin. Chem. 12, 67.

7 Hoechst H Stain Chen, T.R. (1977) Exp. Cell Res., 104, 255 Life Technologies Modified.

8 Barile, M.F. and Kern, J. (1971) P.S.E.M.B. 138, 432, Life Technologies Modified.

9 Life Technologies Specifications.

10 Life Technologies Specifications, Ref.: GIBCO Catalog. Cell Line Used: Sp2/O-Ag14 (ATCC No. CRL-1581) or P3 x 63 - Ag8.653 (ATCC No. CRL-1580). The cloning efficiency assay analyzes the ability of each FBS lot to support cloning and growth of murine myeloma cells and derived hybridomas.

11 Life Technologies Specifications, Ref.: Cell Line Used: Human Diploid Normal Lung Fibroblast. GIBCO growth promotion assay measures the ability of each FBS lot to support proliferation of fastidious human diploid fibroblasts through multiple subcultures.

12 Life Technologies Specifications, Ref.: GIBCO Catalog. Cell Line Used: Human Lung Carcinoma (A549), ATTC No. CCL-185. Analysis of cellular attachment and proliferation of a human transformed cell line.

13 Life Technologies Specifications.

14 Current edition of USP.

15 Tietz, Norbert W. : Biuret Method for the Determination of Total Protein in Serum and Exudates. Fundamentals of Clinical Chemistry, 1976, pages 302-304.

16 Virus Testing (VT) is performed according to the Code of Federal Regulations, (CFR), Title 9, Part 113.53 (c) [113.46, 113.47].

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