GeminiBio

CERTIFICATE OF ANALYSIS

Fetal Bovine Serum

Optima

(Catalog Number S12450)

Lot Number: B24035

Date of Manufacture: Feb2024

Product Expiry: Feb2029

Origin: United States

Storage Temperature: ≤-10°C

For cell culture, further manufacturing or research use only. Not for direct therapeutic use.

Product Description: Fetal Bovine Serum *Optima* is a triple 0.1 µm filter processed serum.

Notice: The serum was collected and processed rapidly at cold temperatures to yield the highest quality serum with excellent cell growth properties. This cold processing leaves some fibrinogen in the serum which may convert to fibrin upon storage, thawing, or heat-inactivation. Fibrin can cause the serum to look slightly turbid or may be visible as a flocculent material. This material does not adversely affect the growth performance characteristics of the serum.

Test	Methodology	Specification	Analysis
Bacterial and Fungal Testing	U.S.P. Modified	Not Detected	Not Detected
Mycoplasma Testing	Large Volume Barile Method	Not Detected	Not Detected
Mycoplasma Testing, Supplemental	DNA Fluorochrome Stain	Not Detected	Not Detected
Viral Testing	Full 9CFR		
BVDV – Fluorescent Antibody		Test	Tested
Cytopathogenic Agents - e.g. IBRV		Not Detected	Not Detected
Hemadsorbing Agents - e.g. PI-3V		Not Detected	Not Detected
BTV		Not Detected	Not Detected
BRSV		Not Detected	Not Detected
Bovine Parvo		Not Detected	Not Detected
Bovine Adeno 1		Not Detected	Not Detected
Bovine Adeno 5		Not Detected	Not Detected
Reo Virus		Not Detected	Not Detected
Rabies Virus		Not Detected	Not Detected
Cell Culture Testing		Pass	Pass
pH		6.8 – 7.8	7.3
Osmolality	Vapor Pressure	280 – 335 mOsm	300 mOsm
Endotoxin	Limulus Amebocyte Lysate Gel Clot	≤ 20.0 EU/mL	0.06 EU/mL
Hemoglobin	Spectrophotometric	≤ 25 mg/dL	8.3 mg/dL

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Biochemical Profile			
Total Protein		3.0 – 4.6 g/dL	3.5 g/dL
Albumin		Check and Record	2.3 g/dL
Globulin		Check and Record	< 2.6 g/dL
A/G ratio		Check and Record	1.9
IgG		Check and Record	24.0 mg/dL
ALT/SGPT		Check and Record	7.0 IU/L
GGT		Check and Record	1.0 IU/L
Alkaline Phosphatase		Check and Record	221.0 IU/L
Total Bilirubin		Check and Record	0.20 mg/dL
Iron		Check and Record	178.0 µg/dL
UIBC		Check and Record	63.0 µg/dL
Cholesterol		Check and Record	36.0 mg/dL
Triglycerides		Check and Record	63.0 mg/dL
Glucose		Check and Record	72.0 mg/dL
Blood Urea Nitrogen (BUN)		Check and Record	15.0 mg/dL
Creatinine		Check and Record	2.5 mg/dL
BUN/Creatinine Ratio		Check and Record	6.0
Uric Acid		Check and Record	1.9 mg/dL
Sodium		Check and Record	137.0 mEq/L
Potassium		Check and Record	10.8 mEq/L
Sodium/Potassium Ratio		Check and Record	12.7
Chloride		Check and Record	99.0 mEq/L
Calcium		Check and Record	13.6 mg/dL
Phosphorus		Check and Record	10.5 mg/dL
Magnesium		Check and Record	3.2 mg/dL
Bicarbonate		Check and Record	18.0 mmol/L

The fetal bovine serum used in manufacturing the product stated above is certified as meeting all USDA requirements for donor animal health, country of origin, and traceability of the product.

Origin: The fetal bovine serum used in the production of this lot was collected in USDA inspected slaughterhouses located in the United States.

TSE/BSE Statement: Product-specific validated virus removal studies have not been conducted for the majority of offered items. Statements to confirm that a product is "free of TSE/BSE" are not scientifically possible; consequently, we cannot state definitively that a material is TSE/BSE free. This product does contain animal-derived raw materials

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and GeminiBio maintains information confirming these materials are sourced from countries considered as negligible or controlled (Canada) risk for BSE by the World Organisation for Animal Health.

Donor Animals: All fetal blood is collected from fetuses derived from healthy animals. The donor dams have passed both ante- and post-mortem certified USDA veterinary inspections before collection of the fetal blood.

Traceability: Final processing of the serum took place in a processing facility located in the United States. All fetal bovine serum is traceable to the date and location of collection.

The testing that has been performed as part of this lot release has been reviewed by Quality Assurance personnel and has confirmed that the testing meets the specifications presented on this Certificate of Analysis.

Korrina Nicewonger
Name

04 DEC 2024
Date

QA Associate II
Title