

## Fetal Bovine Serum

Certificate of Analysis

Triple 0.1 µm sterile filtered  
Manufactured in Germany

Lot No.: 45032021FBS  
Origin: BRAZIL  
Product Code: S-FBS-SA-015  
Date of Manufacture: 03/2021  
Expiry Date: 03/2026  
Storage: < -15°C

### Physical and Chemical Analysis

Test	Specifications	Results
Appearance	Clear yellow-amber	Clear yellow-amber
pH	6.8 – 8.2	7.33 at 20.6°C
Specific Gravity	> 1.01	1.0170 g/ml
Osmolality	260 – 340 mOsm/kg	319 mOsm/kg
Endotoxin	< 10 EU/ml	0.55 EU/ml
Free Hemoglobin	< 25 mg/dl	18.23 mg/dl

### Protein Profile

Test	Specifications	Results
Total Protein	3.0 – 4.5 g/dl	4.1 g/dl
Albumin	1.4 – 3.4 g/dl	2.0 g/dl
Globulin	0.4 – 2.4 g/dl	2.1 g/dl
IgG	< 400 µg/ml	322 µg/ml

### Sterility

Test	Specifications	Results
Aerobic Bacteria	Not detected	Not detected
Anaerobic Bacteria	Not detected	Not detected
Fungi (Yeast & Mold)	Not detected	Not detected
Mycoplasma	Not detected	Not detected

### Antibiotics

Test	Specifications	Results
Tetracycline	Test and Report	Not detected
Oxytetracycline	Test and Report	Not detected
Chlortetracycline	Test and Report	Not detected

### Antibody Testing

Test	Specifications	Results
BVDV-1	Test and Report	Not detected
BVDV-2	Test and Report	Not detected
BHV-1	Test and Report	Not detected
PI-3	Test and Report	Not detected

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### Virus Testing

Test	Specifications	Results
BVDV (CPE)	Not detected	Not detected
Parainfluenza Virus: PI-3 (CPE)	Not detected	Not detected
Bovine Herpesvirus: BHV-1,4 (CPE)	Not detected	Not detected
Rabies Virus	Not detected	Not detected
Bluetongue	Not detected	Not detected
Bovine Respiratory Syncytial Virus: BRSV	Not detected	Not detected
Reo Virus	Not detected	Not detected
Bovine Adenovirus: BAV-3,5	Not detected	Not detected
Bovine Parvovirus: BPV-1,2	Not detected	Not detected

### Biochemistry

Test	Specifications	Results
Aspartate Aminotransferase (AST)	Test and Report	45 U/L
Alanine Aminotransferase (ALT)	Test and Report	20 U/L
Lactate Dehydrogenase (LDH)	Test and Report	1907 U/L
Alkaline Phosphatase (ALKP)	Test and Report	282 U/L
Gamma-Glutamyl Transferase (GGT)	Test and Report	1 U/L
Cholesterol (CHOL)	Test and Report	0.35 mmol/L
Glucose (GLU)	Test and Report	1.83 mmol/L
Urea (BUN)	Test and Report	4.9 mmol/L
Creatinine (CREA)	Test and Report	208 µmol/L
Uric Acid (URIC)	Test and Report	81 µmol/L
Calcium (Ca)	Test and Report	3.24 mmol/L
Phosphorus (PHOS)	Test and Report	2.79 mmol/L
Total Bilirubin (TBIL)	Test and Report	7 µmol/L
Magnesium (Mg)	Test and Report	1.45 mmol/L
Sodium (Na)	Test and Report	136 mmol/L
Potassium (K)	Test and Report	> 10.0 mmol/L
Chloride (CL)	Test and Report	111 mmol/L
Triglyceride (Trig)	Test and Report	0.99 mmol/L
Iron (Fe)	Test and Report	176 µg/dl

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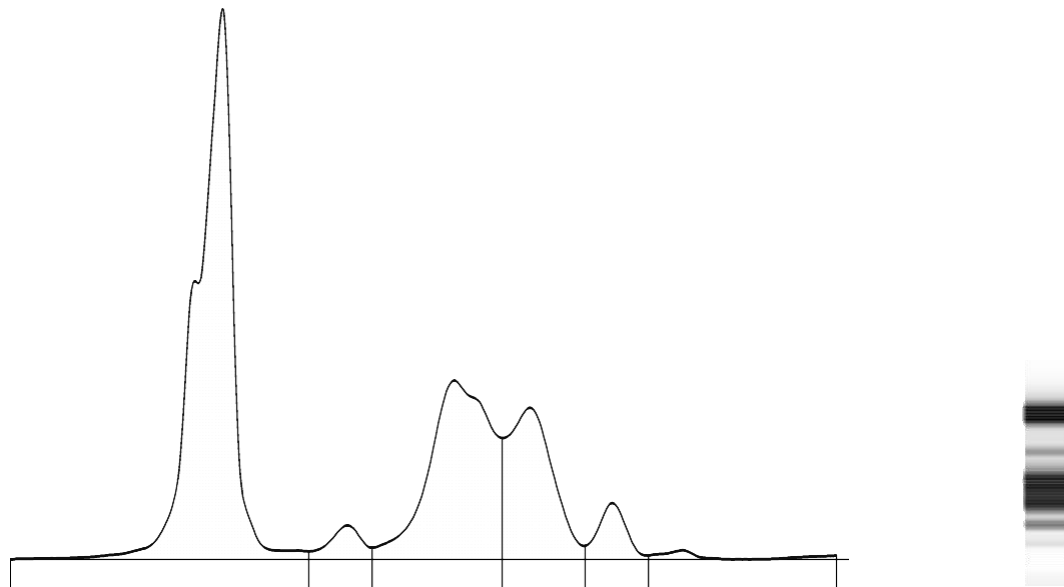
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### Electrophoretic Pattern



### Serum protein electrophoresis

Fractions	%		Ref. %	Ref. Conc.
<b>Albumin</b>	<b>48.3</b>	<	55.8 - 66.1	40.20 - 47.60
<b>Alpha 1</b>	<b>2.7</b>	<	2.9 - 4.9	2.10 - 3.50
<b>Alpha 2</b>	<b>27.6</b>	>	7.1 - 11.8	5.10 - 8.50
<b>Beta 1</b>	<b>16.5</b>	>	4.7 - 7.2	3.40 - 5.20
<b>Beta 2</b>	<b>3.9</b>		3.2 - 6.5	2.30 - 4.70
<b>Gamma</b>	<b>1.0</b>	<	11.1 - 18.8	8.00 - 13.50

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### Cell-Culture Test

Cell Line	Method	Specifications	Results
L-929	Morphology	Tested vs. Control Serum <sup>1</sup>	3/3
HELA	Morphology	Tested vs. Control Serum <sup>1</sup>	3-/3-
MRC-5	Morphology	Tested vs. Control Serum <sup>1</sup>	3/3
L-929	Density	Tested vs. Control Serum <sup>2</sup>	3/3+
HELA	Density	Tested vs. Control Serum <sup>2</sup>	3/3
MRC-5	Density	Tested vs. Control Serum <sup>2</sup>	3/3
L-929	Cell Count	Cell count [log <sub>10</sub> /ml]/dead cells [%]	6.32/0 vs 6.28/0
HELA	Cell Count	Cell count [log <sub>10</sub> /ml]/dead cells [%]	6.09/2.0 vs 6.16/0.8

#### Scoring System (vs. Control Serum):

<sup>1</sup> 0 dead cells; 1 many cells degenerate and many dead cells; 2 cells partially degenerate and many dead cells; 3 few cells degenerate and few dead cells; 4 w/o pathological findings

<sup>2</sup> 0 single cells/cell aggregates; 1 < 50% confluency; 2 50 – 90% confluency; 3 confluency; 4 overly confluent

#### Interpretation:

The cultures with test serum 45032021FBS showed comparable cell growth in all cases compared to the internal control serum. Using the test serum in general, all cells displayed satisfying viability and cell growth.

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