

# Fetal Bovine Serum

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|--------------------------------|
| <i>Certificate of Analysis</i> |
|--------------------------------|

Triple 0.1 µm sterile filtered  
Manufactured in Germany

**Lot No.:** 42020623FBS  
**Origin:** IRELAND  
**Product Code(s):** S-FBS-IR-015, S-FBS-IR-0150, S-FBS-IR-011  
**Date of Manufacture:** 02/2023  
**Expiry Date:** 02/2028  
**Storage:** < -15°C

## Physical and Chemical Analysis

| Test             | Method               | Specifications                      | Results                             | Units   |
|------------------|----------------------|-------------------------------------|-------------------------------------|---------|
| Identity         | Internally Validated | Bovine                              | Bovine                              | n/a     |
| Appearance       | Visual               | Clear yellow-amber<br>Frozen Liquid | Clear yellow-amber<br>Frozen Liquid | n/a     |
| Specific Gravity | Mass Balance         | > 1.01                              | 1.019                               | g/ml    |
| pH               | Electronic pH Meter  | 6.8 - 8.2                           | 7.23 at 22.2°C                      | n/a     |
| Osmolality       | Osmometer            | 260 - 340                           | 323                                 | mOsm/kg |
| Endotoxin        | LAL Kinetic          | < 10                                | < 1.0                               | EU/ml   |
| Free Hemoglobin  | Colorimetric         | < 25                                | 11.31                               | mg/dl   |

## Protein Profile

| Test                    | Method                    | Specifications  | Results | Units |
|-------------------------|---------------------------|-----------------|---------|-------|
| Electrophoretic Pattern | Capillary Electrophoresis | Normal          | Normal  | n/a   |
| Total Protein           | IDEXX Catalyst One        | 3.0 - 4.5       | 3.7     | g/dl  |
| Albumin                 | IDEXX Catalyst One        | 1.4 - 3.4       | 1.67    | g/dl  |
| Globulin                | IDEXX Catalyst One        | 0.4 - 2.4       | 2.03    | g/dl  |
| Alpha 1                 | Capillary Electrophoresis | Test and report | 1.57    | g/dl  |
| Alpha 2                 | Capillary Electrophoresis | Test and report | 0.28    | g/dl  |
| Beta                    | Capillary Electrophoresis | Test and report | 0.15    | g/dl  |
| Gamma                   | Capillary Electrophoresis | Test and report | 0.03    | g/dl  |
| IgG                     | ELISA                     | < 500           | 254.1   | µg/ml |

## Sterility

| Test       | Method         | Specifications | Results      | Units |
|------------|----------------|----------------|--------------|-------|
| Sterility  | Eur. Ph. 2.6.1 | Pass           | Pass         | n/a   |
| Mycoplasma | qPCR           | Not detected   | Not detected | n/a   |

## Antibiotics

| Test              | Method          | Specifications  | Results      | Units |
|-------------------|-----------------|-----------------|--------------|-------|
| Tetracycline      | IDEXX Snap Test | Test and report | Not detected | n/a   |
| Oxytetracycline   | IDEXX Snap Test | Test and report | Not detected | n/a   |
| Chlortetracycline | IDEXX Snap Test | Test and report | Not detected | n/a   |

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## Virus Testing

| Test                   | Method       | Specifications | Results      | Units |
|------------------------|--------------|----------------|--------------|-------|
| BVDV/BHV-1/PI-3 (CPE)  | Cell Culture | Not detected   | Not detected | n/a   |
| Rabies Virus           | qPCR         | Not detected   | Not detected | n/a   |
| Bluetongue Virus (BTV) | qPCR         | Not detected   | Not detected | n/a   |
| BRSV                   | qPCR         | Not detected   | Not detected | n/a   |
| Reo Virus              | qPCR         | Not detected   | Not detected | n/a   |
| BAV                    | qPCR         | Not detected   | Not detected | n/a   |
| BoPV-1, 2              | qPCR         | Not detected   | Not detected | n/a   |

## Antibody Testing

| Test         | Method                          | Specifications  | Results      | Units |
|--------------|---------------------------------|-----------------|--------------|-------|
| BVDV-1, 2, 3 | Detection of Antibodies (ELISA) | Test and report | Not detected | n/a   |
| BHV-1        | Detection of Antibodies (ELISA) | Test and report | Not detected | n/a   |
| PI-3         | Detection of Antibodies (ELISA) | Test and report | Not detected | n/a   |

## Biochemistry

| Test                             | Method             | Specifications  | Results | Units  |
|----------------------------------|--------------------|-----------------|---------|--------|
| Aspartate Aminotransferase (AST) | IDEXX Catalyst One | Test and report | 68      | U/L    |
| Alanine Aminotransferase (ALT)   | IDEXX Catalyst One | Test and report | 30      | U/L    |
| Lactate Dehydrogenase (LDH)      | IDEXX Catalyst One | Test and report | 1778    | U/L    |
| Alkaline Phosphatase (ALKP)      | IDEXX Catalyst One | Test and report | 172     | U/L    |
| Gamma-Glutamyl Trans. (GGT)      | IDEXX Catalyst One | Test and report | 5       | U/L    |
| Cholesterol (CHOL)               | IDEXX Catalyst One | Test and report | < 0.15  | mmol/L |
| Glucose (GLU)                    | IDEXX Catalyst One | Test and report | 8.59    | mmol/L |
| Urea (BUN)                       | IDEXX Catalyst One | Test and report | 4.1     | mmol/L |
| Creatinine (CREA)                | IDEXX Catalyst One | Test and report | 259     | µmol/L |
| Uric Acid (URIC)                 | IDEXX Catalyst One | Test and report | 178     | µmol/L |
| Calcium (Ca)                     | IDEXX Catalyst One | Test and report | 3.07    | mmol/L |
| Phosphorus (PHOS)                | IDEXX Catalyst One | Test and report | 2.87    | mmol/L |
| Total Bilirubin (TBIL)           | IDEXX Catalyst One | Test and report | 3       | µmol/L |
| Magnesium (Mg)                   | IDEXX Catalyst One | Test and report | 1.31    | mmol/L |
| Sodium (Na)                      | IDEXX Catalyst One | Test and report | 137     | mmol/L |
| Potassium (K)                    | IDEXX Catalyst One | Test and report | > 10.0  | mmol/L |
| Chloride (CL)                    | IDEXX Catalyst One | Test and report | 100     | mmol/L |
| Triglyceride (Trig)              | IDEXX Catalyst One | Test and report | 1.41    | mmol/L |
| Iron (Fe)                        | Colorimetric       | Test and report | 168.7   | µg/dl  |

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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 [%] | 6.10/0.40 vs. 6.21/0.31 |
| HELA      | Cell Count | Cell count [log <sub>10</sub> /ml]/dead cells [%] | 5.80/2.38 vs. 5.83/2.24 |
| MRC-5     | Cell Count | Cell count [log <sub>10</sub> /ml]/dead cells [%] | 6.01/0.0 vs. 5.98/5.0   |

| Cell Line | Method  | Specifications         | Results |
|-----------|---|------------------------|---------|
| BHK-21    | Cloning Efficiency - Records results vs. control at day 8th | >75% CE vs. control CE | > 99%   |

## Scoring System (vs. Control Serum):

- <sup>1</sup> 0 cells dead; 1 many degenerated cells, plenty of dead cells; 2 cells partially degenerated; many dead cells; 3 few degenerated cells, some dead cells; 4 all cells ok.
- <sup>2</sup> 0 single cells/small colonies; 1 <50% confluent; 2 50 – 90% confluent; 3 confluent; 4 more than confluent

## Interpretation:

The cell growth using test serum Lot: 42020623FBS was comparable to the internal standard serum. The viability of the cells before trypsinization was similar. Using the test serum all cells displayed good viability and cell growth.

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