Fetal Bovine Serum Plus (South America origin)- EU Approved

Triple Filtered 0.1 µm

Cat.# EU-015-500

Physical and Chemical Analysis	Method	Specifications	Units
Identity	Internally Validated	Bovine	n/a
Appearance	Visual	Clear yellow-amber	n/a
Specific Gravity	Mass Balance	> 1.01	g/ml
pH	Electronic pH Meter	6.8 - 8.2	n/a
Osmolality	Osmometer	260 - 340	mOsm/kg
Endotoxin	LAL Kinetic	< 10	EU/ml
Free Hemoglobin	Colorimetric	< 50	mg/dl
Protein Profile			
Total Protein	IDEXX Catalyst One	3.0 – 5.0	g/dl
Albumin	IDEXX Catalyst One	1.4 - 3.6	g/dl
Globulin	IDEXX Catalyst One	0.4 - 2.6	g/dl
IgG	ELISA	< 500	µg/ml
Electrophoretic Pattern	Capillary Electrophoresis	Normal	n/a
Sterility			
Sterility	Eur. Ph. 2.6.1	Pass	
Mycoplasma	qPCR	Not detected	n/a
Antibiotic Testing			
Tetracycline	IDEXX Snap Test	Test and report	n/a
Oxytetracycline	IDEXX Snap Test	Test and report	n/a
Chlortetracycline	IDEXX Snap Test	Test and report	n/a
Virus Testing			
BVDV/BHV-1/PI-3 (CPE)	Cell Culture	Not detected	n/a
Rabies Virus	qPCR	Not detected	n/a
Bluetongue Virus (BTV)	qPCR	Not detected	n/a
BRSV	qPCR	Not detected	n/a
Reo Virus	qPCR	Not detected	n/a
BAV	qPCR	Not detected	n/a
BoPV-1, -2	qPCR	Not detected	n/a
Antibody Testing			
BVDV - Antibody Type 1	Serum Neutralization Test (Cell Culture) or Detection of Antibodies (ELISA)	Test and report	n/a
BVDV - Antibody Type 2	Serum Neutralization Test (Cell Culture) or Detection of Antibodies (ELISA)	Test and report	n/a
BHV-1	Detection of Antibodies (ELISA)	Test and report	n/a
PI-3	Detection of Antibodies (ELISA)	Test and report	n/a

For Research use only

IMMUNOLOGICAL SCIENCES
Web-site: www.immunologicalsciences.com - E-Mail: info@immunologicalsciences.com

Fetal Bovine Serum Plus (South America origin)- EU Approved

Triple Filtered 0.1 µm

Cat.# EU-015-500

Biochemistry			
Aspartate Aminotransferase (AST)	IDEXX Catalyst One	Record	U/L
Alanine Aminotransferase (ALT)	IDEXX Catalyst One	Record	U/L
Lactate Dehydrogenase (LDH)	IDEXX Catalyst One	Record	U/L
Alkaline Phosphatase (ALKP)	IDEXX Catalyst One	Record	U/L
Gamma-Glutamyl Trans.(GGT)	IDEXX Catalyst One	Record	U/L
Cholesterol (CHOL)	IDEXX Catalyst One	Record	mmol/L
Glucose (GLU)	IDEXX Catalyst One	Record	mmol/L
Urea (BUN)	IDEXX Catalyst One	Record	mmol/L
Creatinine (CREA)	IDEXX Catalyst One	Record	µmol/L
Uric Acid (URIC)	IDEXX Catalyst One	Record	µmol/L
Calcium (Ca)	IDEXX Catalyst One	Record	mmol/L
Phosphorus (PHOS)	IDEXX Catalyst One	Record	mmol/L
Total Bilirubin (TBIL)	IDEXX Catalyst One	Record	µmol/L
Magnesium (Mg)	IDEXX Catalyst One	Record	mmol/L
Sodium (Na)	IDEXX Catalyst One	Record	mmol/L
Potassium (K)	IDEXX Catalyst One	Record	mmol/L
Chloride (CL)	IDEXX Catalyst One	Record	mmol/L
Cell Culture Testing - Option 1			
Cell Line	**Method**	**Specifications**	**Results**
L-929, HELA, MRC-5	Morphology	Tested vs. Control Serum	Scoring System 1
L-929, HELA, MRC-5	Density	Tested vs. Control Serum	Scoring System 2
L-929, HELA, MRC-5	Cell Count	Cell count [log10/ml]/dead cells vs. Control	Record
Scoring system	**Meaning**		**Results**
1 - Morphology	Dead Cells		0
	Many Cells degenerate and many dead cells		1
	Cells partially degenerate and many dead cells		2
	Few cells degenerate and few dead cells		3
	Without pathological findings		4
2 - Density	Single cells/cell aggregates		0
	< 50% confluency		1
	50 - 90% confluency		2
	confluency		3
	overly confluent		4
Cell Culture Testing - Option 2			
Cell Line	**Method**	**Specifications**	**Units**
BHK-21, MRC-5	Multiple Passage - Records results vs. control at day: 0, 3, 6, 12	>75% of control growth	%
BHK-21, MRC-5	Plating Efficiency - Records results vs. control at day: 0, 3, 6, 12	>75% PE vs. control PE	%
BHK-21, MRC-5	Cloning Efficiency - Records results vs. control at day: 0, 3, 6, 12	>75% CE vs. control CE	%

For Research use only

IMMUNOLOGICAL SCIENCES
Web-site: www.immunologicalsciences.com - E-Mail: info@immunologicalsciences.com

Fetal Bovine Serum Plus (South America origin)- EU Approved

Triple Filtered 0.1 µm

Cat.# EU-015-500

Collected from the source:
When searchers choose their serum an important factor that should be taken into consideration is the source, which also emphasizes the traceability of the serum.
Our system of vertical integration allows us to be certain of the origins and traceability of our FBS.
Each manufactured batch is rigorously controlled, from the collection of serum and throughout all stages of its treatment and production through to final packaging on our premises.
Fetal Bovine Serum Plus (South America) is derived from clotted whole blood aseptically collected from fetus via cardiac puncture.
The serum is imported from South America and it is treated in agreement with the European regulations.

Filtration :
Final Filter Size : 0.1µm, x 3

Sterility :
All sera are tested for the absence of aerobic and anaerobic bacteria, fungi, yeast and Mycoplasma. The sterility test is based on the European Pharmacopoeia requirements.
The sera are tested for the absence of Mycoplasma by culture.

Virus Tested :
All of our sera are tested for:
- Bovine Viral Diarrhoea (BVD)
- Cytopathogenic agents e.g. Infectious Bovine Rhinotracheitis (IBR) / BHV-1
- Hemadsorbing agents e.g. Parainfluenza Type 3 (Pl3)(CPE)
- Rabies Virus
- BAV
- BoPV-1, -2

Sera are tested for the absence of the indicated viruses by inoculation to permissive cells. The revelation is made by immunofluorescence for pestiviruses. Cytopathogenic agents and hemadsorbing agents are detected by microscopic observations.

Endotoxin :
All sera are tested to determine the levels of endotoxins. Immunological Sciences carries out a chromokinetic quantitative test, according to the method D of the European Pharmacopoeia.
The endotoxin reagent is standardized against the US reference endotoxin.
Fetal Bovine Serum Plus (South America origin) has an endotoxin level lower than 10 EU/ml

Hemoglobin :
The hemoglobin level is measured by spectrophotometer.
Fetal Bovine Serum Plus (South America origin) has an hemoglobin level around 25 mg/ml.

Osmolality :
Determined by a lowered freezing temperature. The osmometer is calibrated against standard solutions

Cell Culture :
Biological performance is assessed using cell culture medium supplemented with the serum being tested. During the test period, cultures are examined microscopically for any morphological abnormalities that may indicate toxic components in the serum.
Fetal Bovine Serum Plus South America origin has a cell growth promotion higher than 80% after the day 6, compared to a serum of reference.

Cell Lines Tested :
The following cell lines are tested with the serum: HELA -Cancer Cell/Human.
L929 -Fibroblast-Mouse/ As Macrophage MRC- 5 -Human/Lung.

Total Protein :
Determined by Biuret Colorimetry.

Country of Origin :
The country in which the serum was taken from the donor/animal: Brazil
Shelf life : 5 years
Recommended Use:

Storage:
To effectively preserve the integrity of animal serum, it should be stored frozen and protected from light. The recommended storage temperature is <-15°C.

Multiple thaw/freeze cycles should be avoided, as they will accelerate the degradation of serum nutrients and can encourage the formation of insoluble precipitates. For this reason, serum should never be stored in **"frost-free" freezers**. These types of freezers periodically warm themselves to avoid internal ice deposits and are detrimental to the stability of frozen serum products.

Suggested Thawing Procedure

1. Remove the serum bottles from the freezer and allow them to adjust to room temperature for approximately 10 minutes.
2. Place each container in a 30 to 37 °C water bath or incubator. Excessive temperatures will degrade heat labile nutrients. If using a water bath, prevent the bottle caps from being submerged.
3. Gently agitate the bottles every 10 – 15 minutes until the serum is completely thawed.
   Efficient and Effective Usage

After thawing, use the serum promptly. Liquid serum may be stored refrigerated (2 to 8 °C) up to four weeks. To avoid thaw/freeze cycles or long periods of refrigeration, it is recommended that any unused serum be immediately dispensed into small, useful aliquots and refrozen for future use.