

## **Certificate of Analysis**

Created December 12, 2018

**Product:** 

GemCell™ Fetal Bovine Serum

**Heat Inactivated\*** 

Triple 0.1µm sterile-filtered

Catalog #: 100-500 Lot #: A63G82I

Origin: United States (100%)

Manufacture Date: Jan 2018 Expiration Date: Jan 2023

<b>T</b> EST	<b>M</b> ETHODOLOGY	SPECIFICATION	RESULTS
Biological Testing			
Endotoxin	USP<85>	<10.0 EU/mL	<0.1 EU/mL
Hemoglobin	Fleming, AF and Woolf, AJ (1965)	<20.0 mg/dL	16 mg/dL
Microbiological Testing			
Sterility	USP<71>		
Bacteria		Not Detected	Not Detected
Fungi		Not Detected	Not Detected
Mycoplasma	Barile, MF and Kern, J (1971)	Not Detected	Not Detected
Viral Testing	9 CFR 113.53c [113.46, 113.47]		
Cytopathic Agents		Not Detected	Not Detected
Hemadsorbing Agents		Not Detected	Not Detected
Bovine Viral Diarrhea Ab Titer			
Туре І		Test and Report	1:1
Type II		Test and Report	1:1
Extraneous Viruses (FAb)			
Bluetongue Virus		Not Detected	Not Detected
Bovine Adenovirus		Not Detected	Not Detected
<b>Bovine Parvovirus</b>		Not Detected	Not Detected
Bovine Viral Diarrhea (cyto-	pathic)	Not Detected	Not Detected
Bovine Viral Diarrhea (non-	cytopathic)	Test and Report	Tested
<b>Bovine Syncytial Virus</b>		Not Detected	Not Detected
<b>Bovine Rabies Virus</b>		Not Detected	Not Detected
Reovirus		Not Detected	Not Detected
Physical Testing			
Electrophoretic Pattern	Cellulose Acetate	Normal	Normal
Osmolality	USP<785>	260-350 m0sm/kg	301 m0sm/kg
pH @ RT	USP<791>	6.5 - 8.5	7.2



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Albumin  Alkaline Phosphatase  ALT (SGPT)  AST (SGOT)  Test and Report	Res	ULTS
Alkaline Phosphatase ALT (SGPT) AST (SGOT) Test and Report AST (SGOT) Test and Report GGT SILIFIANT STATE ST	1.9	er (ell
ALT (SGPT)  AST (SGOT)  GGT  AST (SGOT)  GGT  C10 U/L  Bilirubin, Total  BUN  Calcium  Calcium  Chloride  Cholesterol  Cortisol  Creatinine  Est and Report  Est and Report  Glucose  IgG  IgG  ELISA  Insulin  Irest and Report  Test and Report	210	g/dL
AST (SGOT) GGT	9	U/L
GGT  Bilirubin, Total  BUN  Calcium  Calcium  Chloride  Crest and Report  Cortisol  Creatinine  Estradiol  Glucose  IgG  FellSA  Insulin  Icest and Report  Irent and Report	82	U/L
Bilirubin, Total BUN  Calcium  Chloride  Cholesterol  Cortisol  Creatinine  Estradiol  Glucose  IgG  Fellos  IgG  Fellos  Igg  ELISA  Insulin  Igest and Report  Test and Report	4	U/L
BUN Calcium Calcium Test and Report Chloride Test and Report Cholesterol Cortisol Creatinine Estradiol Glucose Iest and Report Iest and Report Iest and Report Test and Report Test and Report Iest and Report Irest and Report Iest and Report	0.3	U/L
Calcium Chloride Chloride Cholesterol Cortisol Creatinine Estradiol Glucose IgG ELISA Insulin Iron, Serum Phosphorus Potassium Progesterone Protein, Total Sodium Test and Report Est and Report Test and Report	14	mg/dL mg/dL
Chloride Cholesterol Cholesterol Cortisol Creatinine Estradiol Glucose IgG ELISA Insulin Iron, Serum Phosphorus Potassium Progesterone Protein, Total Sodium Test and Report Est and Report Iest and Report	3.25	mM
Cholesterol Cortisol Creatinine Estradiol Glucose IgG Insulin Iron, Serum Phosphorus Potassium Progesterone Protein, Total Sodium Test and Report Igs and Report Test and Report	96	mM
Cortisol Creatinine Estradiol Glucose Insulin Iron, Serum Phosphorus Progesterone Protein, Total Sodium Test and Report	30	mg/dL
Creatinine  Estradiol  Glucose  Glucose  Glucose  ELISA  CO.300 mg/mL**  Insulin  Irest and Report  Irest and Report  Irest and Report  Test and Report	<5.5	nM
Estradiol Glucose IgG ELISA C.300 mg/mL** Insulin Irest and Report Iron, Serum Phosphorus Potassium Progesterone Protein, Total Sodium Test and Report	2.4	mg/dL
IgG ELISA <0.300 mg/mL**  Insulin Test and Report  Iron, Serum Test and Report  Phosphorus Test and Report  Potassium Test and Report  Progesterone Test and Report  Protein, Total Biuret 2.5-6.0 g/dL  Sodium Test and Report	154	pM
Insulin Iron, Serum Iron, Serum Phosphorus Potassium Progesterone Protein, Total Sodium Test and Report	6.05	mM
Iron, Serum Phosphorus Test and Report Potassium Progesterone Protein, Total Sodium Test and Report Test and Report Pest and Report Test and Report	0.119	mg/mL
Phosphorus  Potassium  Potassium  Test and Report  Test and Report  Test and Report  Test and Report  Protein, Total  Biuret  2.5-6.0 g/dL  Sodium  Test and Report	48.8	pM
Potassium Progesterone Protein, Total Sodium Test and Report Protein, Total Biuret 2.5-6.0 g/dL Sodium Test and Report	187	ug/dL
Progesterone Protein, Total Biuret  Sodium Test and Report  Z.5-6.0 g/dL  Test and Report	3.3	mM
Protein, Total Biuret 2.5-6.0 g/dL Sodium Test and Report Testosterone Test and Report T3 Test and Report T4 Test and Report Test and Report Test and Report	>10.0	mM
Sodium Test and Report Testosterone Test and Report Tast and Report Tast and Report Test and Report Test and Report Test and Report Test and Report	<0.318	nM
Testosterone Test and Report T3 Test and Report T4 Test and Report Test and Report Test and Report	3.4	g/dL
T3 Test and Report T4 Test and Report Test and Report	134	mM
T4 Test and Report  Trighteerides	< 0.03	nM
Trighteeridee	1.97	nM
Trigiycerides Test and Report	115	nM
Tetressell	70	mg/dL
Tetracycline <4 ng/mL Uric Acid	Pass	<b>G</b>

For Cell Culture, further Manufacturing and Research use only. Not for direct Therapeutic use.

Our fetal bovine serum meets all USDA requirements and has passed ante- and post-mortem inspection by a licensed veterinarian. It is collected in countries recognized as being free of foot-and-mouth disease and rinderpest. The origin of all fetal bovine serum is traceable by lot number, date and country of collection.

Precipitates may develop in this product upon freezing and/or thawing; this occurrence does not impact culture performance.
\*\*Some geographic regions may test higher than 0.300 mg/mL. If this be the case, refer to GGT results less than 10 U/L to ensure FBS, purity.

CREATED BY/ DATE

VERIFIED BY/ DATE

<sup>\*</sup>Results shown were obtained by carefully performed methods believed to be reliable prior to heat inactivation. However, since some results may vary by methodology, it is suggested that tests for which results are particularly critical be repeated by the end user.