CERTIFICATE OF ANALYSIS

NorthBio

FETAL BOVINE SERUM
Cell Culture Grade
United States Origin

Lot # : SF67005
Catalog # : NBSF-201
Lot Expiry : February 28, 2013

Test	Test Method	Specification	Result
Sterility and Endotoxin			
Sterility	USP <71>	No evidence of microbial growth	No evidence of microbial growth
Mycoplasma	Large Volume Direct Culture	Not Detected	Not Detected
Mycoplasma	FDA Points to Consider 1993	Not Detected	Not Detected
Endotoxin	USP <85> LAL Gel Clot	< 10 EU/ml	0.2 EU/mL
Viral Safety Testing			
BVD	9 CFR 113.53	Not Detected	Not Detected
HA	9 CFR 113.53	Not Detected	Not Detected
CPE	9 CFR 113.53	Not Detected	Not Detected
Bovine Parvo	9 CFR 113.53	Not Detected	Not Detected
Bovine Adeno 3	9 CFR 113.53	Not Detected	Not Detected
Bovine Adeno 5	9 CFR 113.53	Not Detected	Not Detected
BRSV	9 CFR 113.53	Not Detected	Not Detected
REO Virus	9 CFR 113.53	Not Detected	Not Detected
Rabies	9 CFR 113.53	Not Detected	Not Detected
Blue Tongue	9 CFR 113.53	Not Detected	Not Detected
BVD Antibody	Serum Neutralization	As Reported	n/a
Biochemistry			
Total Protein	Biuret	30 – 45 g/L	38 g/L
Albumin	Gel Electrophoresis	As Reported	28.1 g/L
Globulins	Gel Electrophoresis	As Reported	10.0 g/L
Bilirubin	Diazo	As Reported	2.1 µmol/L
ALT	Int'l Fed.Clinical Chemistry	As Reported	4 U/L
AST	Int'l Fed. Clinical Chemistry	As Reported	13 U/L
LDH	Gay's Lactate	As Reported	350 mmol/L
Cholesterol	Cholesterol esterase/oxidase/perox	As Reported	0.4 mmol/L
Glucose	Glucose oxidase/peroxidase	As Reported	1.2 mmol/L
Urea	Urease/glutamate deyhydrogenase	As Reported	4.0 mmol/L
Creatinine	Alkaline Picric Acid	As Reported	196 mmol/L
Sodium	Ion Selective Electrode	As Reported	122 mmol/L
Potassium	Ion Selective Electrode	As Reported	17.8 mmol/L
Calcium	Cresolphthalein Complexone	As Reported	2.08 mmol/L
Phosphorus	Ammonium Molybdate	As Reported	2.6 mmol/L
Osmolality	Freezing Point Depression	280 – 340 mOsm/Kg	309 mOsm/Kg
Serum Identity	Ouchterlony	Bovine	Bovine
IgG	Elisa	< 250 mg/mL	n/a mg/L
Hemoglobin	Spectrophotometric	≤ 20.0 mg/dL	11.1 mg/dL
pH	Potentiometric	6.80 – 8.20	7.25
Specific Gravity	Weight / Volume	≥ 1.010 g/mL	1.028 g/mL
ALP	Colorometric	As Reported	n/a U/L
GGT	Enzymatic Colorometric	As Reported	n/a U/L
Chloride	Indirect ISE	As Reported	n/a mmol/L
Uric Acid	Enzymatic Colorometric	As Reported	n/a mmol/L
Triglyceride	Enzymatic	As Reported	n/a mmol/L
Cell Culture Performance			
Plating Efficiency	Diploid Cell Line	Pass	Pass
Population Dblg	Diploid Cell Line	Pass	Pass
Cell Toxicity	Diploid Cell Line	None	None
Growth Promotion	Diploid Cell Line	≥ 75 % of in house control	106.9 %
Appearance	Visual	Clear yellow-amber	Complies

Statement of Origin

THIS SERUM HAS BEEN DERIVED FROM BLOOD ASEPTICALLY COLLECTED IN APPROVED ABBATOIRS. THE SERUM WAS ASEPTICALLY PROCESSED AND FILTER STERILIZED IN CANADA IN A FACILITY REGISTERED WITH MEDICAL DEVICES (U.S.) FOLLOWING GUIDELINES OF F.D.A. AND H.P.F.B. (CANADA). THE COUNTRY OF ORIGIN OF THE CRUDE BLOOD (DONOR COW) IS UNITED STATES .

APRIL 10, 2010
DATE

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