

CERTIFICATE OF ANALYSIS

NorthBio

FETAL BOVINE SERUM

Ultra Low Endotoxin

Canadian Origin

Lot # : SF17019

Catalog # : NBSF-701

Lot Expiry : April 2016

Test	Test Method	Specification	Result
<i>Sterility and Endotoxin</i>			
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	< 0.05 EU/ml	< 0.05 EU/mL
<i>Viral Safety Testing</i>			
BVD (cytopathic)	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	1:3
PI-3 Antibody	Serum Neutralization	As Reported	< 1:2
IBR Antibody	Serum Neutralization	As Reported	< 1:2
BRSV Antibody	Serum Neutralization	As Reported	< 1:2
<i>Biochemistry</i>			
Total Protein	Biuret	30 – 45 g/L	37 g/L
Albumin	Gel Electrophoresis	As Reported	29.2 g/L
Globulins	Gel Electrophoresis	As Reported	7.3 g/L
Bilirubin	Diazo	As Reported	1.5 µmol/L
ALT	Int'l Fed. Clinical Chemistry	As Reported	6 U/L
AST	Int'l Fed. Clinical Chemistry	As Reported	23 U/L
LDH	Gay's Lactate	As Reported	454 mmol/L
Cholesterol	Cholesterol esterase/oxidase/perox	As Reported	0.5 mmol/L
Glucose	Glucose oxidase/peroxidase	As Reported	4.8 mmol/L
Urea	Urease/glutamate dehydrogenase	As Reported	3.7 mmol/L
Creatinine	Alkaline Picric Acid	As Reported	159 mmol/L
Sodium	Ion Selective Electrode	As Reported	124 mmol/L
Potassium	Ion Selective Electrode	As Reported	17.3 mmol/L
Calcium	Cresolphthalein Complexone	As Reported	2.21 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
Electrophoretic	Cellulose Acetate	Normal	Normal
IgG	Elisa	< 250 mg/mL	83 mg/L
Hemoglobin	Spectrophotometric	≤ 20.0 mg/dL	7.1 mg/dL
pH	Potentiometric	6.80 – 8.20	7.10
Specific Gravity	Weight / Volume	≥ 1.010 g/mL	1.022 g/mL
ALP	Colorimetric	As Reported	141 U/L
GGT	Enzymatic Colorimetric	As Reported	3 U/L
Chloride	Indirect ISE	As Reported	90 mmol/L
Uric Acid	Enzymatic Colorimetric	As Reported	69 mmol/L
Triglyceride	Enzymatic	As Reported	0.41 mmol/L

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Test	Test Method	Specification	Result
<i>Cell Culture Performance</i>			
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	94.6 %
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 CANADA

MAY 15, 2011

DATE

C. BROHMAN, QUALITY ASSURANCE

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