

Laboratory Central Military Veterinary Laboratory (CMVL), Sardhana Road, Meerut Cantt, Uttar Pradesh

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number TC-6909 (in lieu of T-1694) **Page 1 of 10**

Validity 29.01.2018 to 28.01.2020 **Last Amended on** 07.02.2018

Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
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BIOLOGICAL TESTING

I.	VETERINARY TESTING			
1.	Biochemistry			
a.	Serum samples of Bovines, Equines & Canines	Biochemical profile	(a) As per kit insert procedures as follows:	
		Total Protein (TP)	SOP/Biochem/01 : (Semi automated) (Issue no. 03 Issue date 20 Aug 2017) SOP/Biochem/28 : (Fully automated) (Issue no. 03 Issue date 20 Aug 2017)	0.5 g/dl to 15 g/dl 0.5 g/dl to 15 g/dl
		Albumin	SOP/Biochem/02 : (Semi automated) (Issue no. 03 Issue date 20 Aug 2017) SOP/Biochem/17 : (Fully automated) (Issue no. 03 Issue date 20 Aug 2017)	0.1 g/dl to 6 g/dl 0.1 g/dl to 6 g/dl
		Globulin	Calculated	Qualitative
		AST (SGOT)	SOP/Biochem/03 : (Semi automated) (Issue no. 03 Issue date 20 Aug 2017) SOP/Biochem/18 : (Fully automated)	5 U/L to 450 U/L 5 U/L to 450 U/L

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		ALT (SGPT)	(Issue no. 03 Issue date 20 Aug 2017) SOP/Biochem/04 : (Semi automated) (Issue no. 03 Issue date 20 Aug 2017)	5 U/L to 450 U/L
		ALP	SOP/Biochem/19 : (Fully automated) (Issue no. 03 Issue date 20 Aug 2017) SOP/Biochem/06 : (Semi automated) (Issue no. 03 Issue date 20 Aug 2017)	5 U/L to 450 U/L 10U/L to 1000 U/L
		Bilirubin	SOP/Biochem/21 : (Fully automated) (Issue no. 03 Issue date 20 Aug 2017) SOP/Biochem/05 : (Semi automated) (Issue no. 04 Issue date 20 Aug 2017)	10U/L to 1000 U/L 0.1 mg/dl to 20 mg/dl
		Urea	SOP/Biochem/20 : (Fully automated) (Issue no. 03 Issue date 20 Aug 2017) SOP/Biochem/07 : (Semi automated) (Issue no. 03 Issue date 20 Aug 2017)	0.1 mg/dl to 20 mg/dl 2 mg/dl to 250 mg/dl
			SOP/Biochem/22 :	2 mg/dl to 250 mg/dl

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		BUN	(Fully automated) (Issue no. 03 Issue date 20 Aug 2017) SOP/Biochem/07 : (Semi automated) (Issue no. 03 Issue date 20 Aug 2017)	1 mg/dl to 30 mg/dl
		Creatinine	SOP/Biochem/22 : (Fully automated) (Issue no. 03 Issue date 20 Aug 2017) SOP/Biochem/08 : (Semi automated) (Issue no. 03 Issue date 20 Aug 2017)	1 mg/dl to 30 mg/dl
		Cholesterol	SOP/Biochem/23 : (Fully automated) (Issue no. 03 Issue date 20 Aug 2017) SOP/Biochem/09 : (Semi automated) (Issue no. 03 Issue date 20 Aug 2017)	1 mg/dl to 20 mg/dl
		Calcium (Ca)	SOP/Biochem/24 : (Fully automated) (Issue no. 03 Issue date 20 Aug 2017) SOP/Biochem/10 : (Semi automated) (Issue no. 03 Issue date 20 Aug 2017)	1 mg/dl to 600 mg/dl
				0.1 mg/dl to 20 mg/dl

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		Phosphorus (P)	SOP/Biochem/25 : (Fully automated) (Issue no. 03 Issue date 20 Aug 2017)	0.1 mg/dl to 20 mg/dl
			SOP/Biochem/11: (Semi automated) (Issue no. 03 Issue date 20 Aug 2017)	1 mg/dl to 15 mg/dl
		Magnesium (Mg)	SOP/Biochem/26 : (Fully automated) (Issue no. 03 Issue date 20 Aug 2017)	1 mg/dl to 15 mg/dl
			SOP/Biochem/12 : (Semi automated) (Issue no. 03 Issue date 20 Aug 2017)	0.1 mg/dl to 5 mg/dl
			SOP/Biochem/27 : (Fully automated) (Issue no. 03 Issue date 20 Aug 2017)	0.1 mg/dl to 5 mg/dl
b.	Urine samples of Bovines, Equines & Canines	(a) Routine Exam (Glucose, Bilirubin, Ketone, Specific Gravity, Protein, Blood, pH & Urobilinogen) (b) Microscopic exam of urine (Sq Epithelial Cells, Transitional Epithelial Cells, Erythrocytes, Leucocytes or pus)	SOP/Biochem/13 (Issue no. 02 Issue date 20 Aug 2017) SOP/Biochem/34 (Issue no. 03 Issue date 20 Aug 2017) SOP/Biochem/14 (Issue no. 02 Issue date 20 Aug 2017)	Qualitative (Positive or Negative) Variable sensitivity Qualitative (Positive or Negative) Variable sensitivity

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		Cells, Casts (Hyaline, Granular, Epithelial, Waxy, Fatty, Blood and Leucocytes), Mucus and Mucus Threads and Micro-organisms (Bacteria, Yeast, Fungi, Protozoa), Parasites and Spermatozoa)		
2.	Hematology & Parasitology			
a.	Blood Samples from Equines, Canines & Bovines	Complete Blood Count (CBC) comprising of estimation of: Hemoglobin TLC, TRBC, ESR, PCV Platelet	SOP/HEMATO/02 (Issue no. 05 Issue date 13 Sep 2017) SOP/HEMATO/04 (Issue no. 04 Issue date 13 Sep 2017) SOP/HEMATO/05 (Issue no. 04 Issue date 13 Sep 2017) SOP/HEMATO/07 (Issue no. 04 Issue date 13 Sep 2017) SOP/HEMATO/03 (Issue no. 03 Issue date 13 Sep 2017) SOP/HEMATO/06 (Issue no. 04 Issue date 13 Sep 2017)	2g% to 30 g% 2 to 30x10 ³ /μl 0.1 to 20x10 ⁶ /μl 1 to 200 mm/h 1% to 100% Platelet count 0.1 to 150 x 10 ⁵

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		DLC, (Neutrophil, Lymphocyte, Monocyte, Eosinophil Basophil) (Count by manual methods)	SOP/HEMATO/08 (Issue no. 03 Issue date 13 Sep 2017)	1 to 100 %
		Complete Blood Count (CBC) comprising of Hb, Hct, RBC, WBC, Thrombocytes, DLC MCV, MCH and MCHC by fully automated hematology analyzer MS4S	SOP/HEMATO/10 (Issue no. 03 Issue date 13 Sep 2017)	<u>Linearity limit</u> WBC: 0- 200x 10 ³ /μl RBC: 0- 8x10 ⁶ /μl Hb : 0-24 g/dl THR: 0-1000 ³ x 10 ³ /μl Hct: 0-70%
b.	Blood Smears from Equines, Canines & Bovines	Examination of stained blood smear for blood protozoa (<i>Babesia spp, Theileria spp, Trypanosoma spp, Anaplasma spp, Ehrlichia spp & Hepatozoon spp</i>)	Microscopic examination (SOP/PARASITO/03) (Issue no. 03 Issue date 13 Sep 2017)	Qualitative (Positive or Negative) Variable sensitivity
c.	Fecal samples from Equines, Canines & Bovines	Detection of parasitic ova (Helminths ova i.e., nematodes ova trematodes ova and cestodes ova)	SOP/PARASITO/02 (Issue no. 03 Issue date 13 Sep 2017)	Qualitative (Positive or Negative) Variable sensitivity
d.	Skin scraping from animals	Examination for mite infestation	Microscopic examination SOP/PARASITO/04 (Issue no. 03 Issue date 13 Sep 2017)	Qualitative (Positive or Negative) Variable sensitivity

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3.	Pathology			
a.	Morbid Tissue Samples in formal saline from animals	Histopathological Examination	Sectioning and H&E staining of Paraffin embedded tissues SOP/PATHO/01 (Issue no.10 Issue date 01 Jul 2017)	Qualitative
b.	Brain Tissue Samples from animals in 50 % Glycerol saline	Demonstration of Negri bodies	Seller's staining and microscopic examination SOP/PATHO/02 (Issue no.06 Issue date 01 Jul 2017)	Qualitative
4.	Serology			
a.	Serum Samples from Bovines	Tube Agglutination Test to determine antibody titer against Brucellosis	SOP/SERO/01 (Issue no 02 Issue date 19Aug 2017)	0 to 1:80 titre / 1:10 titre
b.	Serum Samples from Equines	Tube Agglutination Test to determine antibody titer against Salmonella	SOP/SERO/02 (Issue no 02 Issue date 19Aug 2017)	0 to 1:400 titre / 1:10 titre
c.	Serum Samples from Bovines	ELISA test to detect IgG antibodies against Infectious Bovine Rhinotracheitis Virus	SOP/SERO/08 (Issue no 02 Issue date 19Aug 2017)	Qualitative (Positive or Negative) > 95% Sensitive
d.	Serum Samples from Equines	Complement Fixation Test for Glanders	SOP/SERO/04 (Issue no 03 Issue date 19Aug 2017)	0 to 1:320 titre / 1:5 titre
e.	Serum Samples from Canines	Immunocomb 'Ready to Use' test to detect antibodies against Leptospirosis, Ehrlichiosis, CPV/CDV & ICH	SOP/SERO/05 (Issue no 03 Issue date 19Aug 2017) SOP/SERO/06 (Issue no 03 Issue date 19Aug 2017) SOP/SERO/07 (Issue no 03 Issue date 19Aug 2017)	Qualitative (Positive or Negative) > 95% Sensitive

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5.	Virology			
a.	Serum Samples	Coggin's Test for detection of Equine Infectious Anemia	SOP/VIRO/07 (Issue no 03 Issue date 19 Aug 2017)	Qualitative (Positive or Negative) > 95% Sensitive
b.	Clinical Samples (Nasal swabs) from equines	HA Test for detection of Equine Influenza Virus antigen	SOP/VIRO/05 (Issue no 03 Issue date 19 Aug 2017)	0 to 1:512 titer / 1:2 titer
c.	Serum Samples from equines	HI Test for detection of Antibody titer against Equine Influenza Virus	SOP/VIRO/06 (Issue no 03 Issue date 19 Aug 2017)	0 to 1:512 titer / 1:8 titer
d.	Clinical Specimens from Canines & Equines	Virus Isolation and Confirmation in Animal Cell Culture System	SOP/VIRO/01 (Issue no 03 Issue date 19 Aug 2017)	Qualitative (Positive or Negative) > 90% Sensitive
e.	Clinical Specimens from Canines	Haemagglutination (HA) test for Canine Parvo Virus (CPV) antigen detection	SOP/VIRO/02 (Issue no 03 Issue date 19 Aug 2017)	0 to 1:512 titer / 1:2 titer
f.	Serum samples from Canines	Haemagglutination Inhibition (HI) test for Canine Parvo Virus antibody detection	SOP/VIRO/03 (Issue no 03 Issue date 19 Aug 2017)	0 to 1:2560 titer / 1:20 titer
g.	Clinical Specimens from Canines (Blood, serum, stool, tissues, nasal and conjunctival swabs)	Rapid detection of antigen for Canine Parvo Virus, Canine Corona Virus, Canine Adeno Virus, Canine Distemper Virus by 'ready to use' diagnostic kits using dot ELISA method.	SOP/VIRO/08 (Issue no 03 Issue date 19 Aug 2017) SOP/VIRO/09 (Issue no 03 Issue date 19 Aug 2017)	Qualitative (Positive or Negative) > 95% Sensitive Variable Sensitivity for different tests as per kit inserts
h.	Brain tissue samples from animals on ice/in 50% Glycerol saline	Rapid Rabies antigen detection kit	SOP/VIRO/11 (Issue no 03 Issue date 19 Aug 2017)	Qualitative (Positive or Negative) >95% Sensitive Variable Sensitivity for different tests as per kit inserts

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6.	Molecular Biology			
a.	Clinical Specimens from Bovines, Canines & Equines	PCR Test for detection of: Canine Parvovirus Equine Herpes Virus-1 Canine Adenovirus 1 Canine Adenovirus 2 Tuberculosis	SOP/BIOTECH/01 (Issue no 03 Issue date 19 Aug 2017) SOP/BIOTECH/03 (Issue no 03 Issue date 19 Aug 2017) SOP/BIOTECH/04 (Issue no 03 Issue date 19 Aug 2017) SOP/BIOTECH/05 (Issue no 03 Issue date 19 Aug 2017) SOP/BIOTECH/11 (Issue no 03 Issue date 19 Aug 2017)	Qualitative (Positive or Negative)/ > 90 % Sensitive
7.	Bacteriology			
a.	Clinical specimens from diseased animals	Culture and Identification of pathogenic bacteria	SOP/BACT/02 (Issue no 03 Issue date 19 Aug 2017)	Qualitative (Positive or Negative)/ 95% Sensitive
b.	Clinical specimens from diseased animals	Antibiotic Sensitivity Test	SOP/BACT/15 (Issue no 03 Issue date 19 Aug 2017)	Qualitative (Positive or Negative)/ 95% Sensitive
c.	Clinical specimens of cattle	Identification of Acid Fast Bacilli (AFB) by ZN Staining	SOP/BACT/03 (Issue no 03 Issue date 19 Aug 2017)	Qualitative (Positive or Negative)/ 95% Sensitive
d.	Animal Feed & Fodder samples	Estimation of Microbial load	SOP/BACT/16 (Issue no 03 Issue date 19 Aug 2017)	Absent to 400 CFUs per Gm / 10 CFU per Gm

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<u>CHEMICAL TESTING</u>				
I.	ANIMAL FOOD & FEEDS			
1.	Animal Nutrition			
	Animal Feed & Fodder	Moisture	SOP/Nutri/02 (Issue no.03 Issue date 20 Aug 2017), Laboratory Manual of Animal Nutrition by Sastry VRB, Kamra DN & Pathak	1% to 90 %
		Dry Matter (Calculated)	NN, Mar 99	10% to 99 %
		Crude Fat	SOP/Nutri/04 (Issue no. 03 Issue date 20 Aug 2017)	0.5% to 25 %
		Crude Protein	SOP/Nutri/03 (Issue no. 03 Issue date 20 Aug 2017)	2% to 70%
		Crude Fiber	SOP/Nutri/05/06 (Issue no. 03 Issue date 20 Aug 2017)	3% to 60 %
		Total Ash	SOP/Nutri/07 (Issue no. 03 Issue date 20 Aug 2017)	1% to 20 %
		Acid Insoluble Ash	SOP/Nutri/08 (Issue no. 03 Issue date 20 Aug 2017)	1% to 15 %
		Appearance	SOP/Nutri/01 (Issue no. 04 Issue date 19 Feb 2018)	Qualitative
		Odour	SOP/Nutri/01 (Issue no. 04 Issue date 19 Feb 2018)	Qualitative

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