



**National Public Health Laboratory**  
Teku, Kathmandu, Nepal

**Discipline: CLINICAL BIO-CHEMISTRY, CLINICAL PATHOLOGY, IMMUNOLOGY,  
HEMATOLOGY, SEROLOGY, BACTERIOLOGY & MOLECULAR TESTING**

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**Scope of Accreditation**

The clinical laboratories under the scope of AERSSC accreditation (ISO 15189:2012) are:

**1. Clinical Biochemistry**

SI No.	Materials or items examined/tested	Specific tests/examination performed	Specification, standard (method) or technique used	Range of testing/Limit of detection	MU
1	Serum /Plasma/ Urine/Hemolysae	Glucose (mg/dl)	Hexokinase	10 – 800 mg/dl	8.1
2	Serum/Plasma/Urine	Urea (mg/dl)	Urease UV	5 – 300 mg/dl	7.8
3	Serum/Plasma/Urine	Creatinine (mg/dl)	Alkaline picrate	0.06 – 25 mg/dl	4.8
4	Serum/Plasma/Urine	Uric Acid (mg/dl)	Uricase colorimetric	1.5 – 30 mg/dl	4.8
5	Serum/Plasma/Urine	Ca (mg/dl)	Arsenazo III	4 – 20 mg/dl	5.1
6	Serum/Plasma	Phosphorus (mg/dl)	Phosphomolydate colorimetric endpoint	1 -20 mg/dl	5.9
7	Serum/Plasma	T. Bilirubin (mg/dl)	Jedrassik	0 – 30 mg/dl	4.0
8	Serum/Plasma	D. Bilirubin (mg/dl)	Jedrassik	0 – 10 mg/dl	9.9
9	Serum/Plasma	ALP (U/L)	PNP Amp kinetic	5 – 1500 U/L	8.8
10	Serum/Plasma	GOT/AST (U/L)	UV kinetic with P5P	3 – 1000 U/L	8.3
11	Serum/Plasma	GPT/ALT (U/L)	UV kinetic with P5P	3 – 500 U/L	6.2
12	Serum/Plasma	GGT (U/L)	IFCC	5 – 1200 U/L	2.5
13	Serum/Plasma	LDH (U/L)	LDH (L-P) IFCC	25 – 1200 U/L	8.7

14	Serum/Plasma	T. Protein (g/dl)	Biuret reagent blank	3 – 12 g/dl	1.6
15	Serum/Plasma	Albumin (g/dl)	BCG	1.5 – 6 g/dl	5.1
16	Serum/Plasma	T. Cholesterol(mg/dl)	CHOD-PAP	20 – 700 mg/dl	1.45
17	Serum/Plasma	HDL (mg/dl)	Enzymatic direct	2 – 180 mg/dl	3.8
18	Serum/Plasma	LDL (mg/dl)	Calculated	10 – 400 mg/dl	5.3
19	Serum/Plasma	Tg (mg/dl)	Enzymatic endpoint	10 – 1000 mg/dl	3.4
20	Serum/Plasma	CPK NAC (U/L)	NAC activated	10 – 2000 U/L	8.9
21	Serum/Plasma/ Urine	Amylase (U/L)	CNP-Triose CNPG3	10 – 2000 U/L	9.1
22	Serum/Plasma	Iron	TPTZ without precipitation	10 - 1000	4.1
23	Serum/Plasma	UIBC (ug/dl)	Nitroso- PSAP	55 – 550 ug/dl	6.6
24	Serum/Plasma	Na+	Direct ISE	20-200 mmol/l	4.6
25	Serum/Plasma	K+	Direct ISE	0.2-40.0 mmol/l	8.43
26	Whole blood	HbA1c	HPLC	3.8 – 18.5 %	10.9

## 2. Immunoassay

SI No.	Materials or items examined/ tested	Specific tests/examination performed	Specification, standard (method) or technique used	Range of testing/Limit of detection	MU
1.	Serum/Plasma	FT3	ECLIA (competitive immunoassay)	0.4-50.0pmol/L	11.6
2.	Serum/Plasma	FT4	ECLIA (competitive immunoassay)	0.3-100.0pmol/L	8.369
3.	Serum/Plasma	TSH	ECLIA (sandwich immunoassay)	0.005-100.0µIU/ml	28.22
4.	Serum/Plasma	A-TPO	ECLIA (competitive immunoassay)	5.00-600.0IU/ml	16.6
5.	Serum/Plasma	TG	ECLIA (sandwich immunoassay)	0.04-500.0ng/ml	20.58
6.	Serum/Plasma	Vitamin D	ECLIA(competitive immunoassay)	3.00-100.0ng/ml	16.61
7.	Serum/Plasma	Vitamin B12	ECLIA(competitive immunoassay)	50.0-2000.0pg/ml	21.46
8.	Serum/Plasma	Folate	ECLIA(competitive immunoassay)	0.6-20.0ng/ml	35.28
9.	Serum/Plasma	Ferritin	ECLIA (sandwich immunoassay)	0.500-2000µg/L	20.87
10.	Serum/Plasma	hGH	ECLIA (sandwich immunoassay)	0.030-50.0ng/ml	6.664
11.	Serum/Plasma	Cortisol	ECLIA (competitive immunoassay)	1.5-1750.0nmol/L	22.34
12.	Serum/Plasma	E2	ECLIA(competitive immunoassay)	18.4-11010.0pmol/L	33.07
13.	Serum/Plasma	Testosterone	ECLIA (competitive immunoassay)	0.025-15.0ng/ml	13.58

14.	Serum/Plasma	LH	ECLIA (sandwich immunoassay)	0.100-200mIU/ml	33.81
15.	Serum/Plasma	FSH	ECLIA (sandwich immunoassay)	0.100-200mIU/ml	16.17
16.	Serum/Plasma	Prolactin	ECLIA (sandwich immunoassay)	1.00-10000.0μIU/ml	33.81
17.	Serum/Plasma	CA 125	ECLIA (sandwich immunoassay)	0.6 -5000 U/ml	36.46
18.	Serum/Plasma	CA 15-3	ECLIA (sandwich immunoassay)	1.00 – 300 U/ml	9.114
19.	Serum/Plasma	CA 19-9	ECLIA (sandwich immunoassay)	0.60 – 1000 U/ml	23.52
20.	Serum/Plasma	CEA	ECLIA (sandwich immunoassay)	0.200 1000 ng/ml	18.82
21.	Serum/Plasma	Alpha Feto Protein	ECLIA (sandwich immunoassay)	0.50 – 1000 IU/ml	18.23
22.	Serum/Plasma	Beta HCG	ECLIA (sandwich immunoassay)	0.10 – 10000 mIU/ml	14.5
23.	Serum/Plasma	PSA Total	ECLIA (sandwich immunoassay)	0.006 – 100 ng/ml	26.45

### 3. Hematology

SI No.	Materials or items examined/tested	Specific tests / examination performed	Specification, standard (method) or technique used	Range of testing/Limit of detection	MU
1.	Whole blood	WBC	Impedance-MDSS#	0 - 120 10 <sup>3</sup> /μL	4.3
2.	Whole blood	RBC	Impedance-MDSS	0 - 8 10 <sup>6</sup> /μL	2.9
3.	Whole blood	HGB	Photometry-MDSS	0 - 24 g/dL	3.9
4.	Whole blood	HCT	Numeric integration	0 - 67 %	2.9
5.	Whole blood	PLT	Impedance-MDSS	0 - 1 900 10 <sup>3</sup> /μL	9.4
6.	Whole blood	MCV	Calculation	15-210 fl	1.96
7.	Whole blood	MCH	Calculation	12-55 pg	3.9
8.	Whole blood	MCHC	Calculation	12-55 g/dl	2.74
9.	Whole blood	RDW-CV%	Calculation	0-50 %	4.5
10.	Whole blood	NE	DHSS*-cytometry & association	0-99.9%	NA
11.	Whole blood	LY	DHSS*-cytometry & association	0-99.9%	NA
12.	Whole blood	EOS	DHSS*-cytometry & association	0-99.9%	NA
13.	Whole blood	MO	DHSS*-cytometry & association	0-99.9%	NA

14.	Whole blood	BAS	DHSS*-cytometry association	&	0-99.9%	NA
15.	Whole blood	Hemoglobin Electrophoresis	Capillary electrophoresis		-	NA
16.	Whole blood	ESR	iSED ALCON		High limit: 130 mm/hr Lower limit: 1 mm/hrs	

#### 4. Serology

S. NO.	Materials or item examined/ tested	Specific tests/examination performed	Specification, standard(method)or technique used	Range of testing/Limit of detection	CV%
1.	Serum/Plasma	Anti HCV quick test	Immunochromatography	NA	NA
2.	Serum/Plasma	HBsAg quick	Immunochromatography	NA	NA
3.	Serum/Plasma	HIV spot quick a. Alere Determine HIV 1/2. b. Unigold c. Statpack	Immunochromatography	NA	NA
4.	Serum/Plasma	Anti-HBs	ECLIA	<10 IU/l (Not immune to Hepatitis B) ≥10 IU/l (Immune to Hepatitis B)	
5.	Serum/Plasma	HBsAg	ECLIA	<0.90 (Non-Reactive) ≥0.9 and <1.0 (Borderline) ≥ 1.0 (Reactive)	
6.	Serum/Plasma	Anti HCV	ECLIA	0.90 (Non-Reactive) ≥0.9 and <1.0 (Borderline) ≥ 1.0 (Reactive)	
7.	Serum/Plasma	HIV-Combi	ECLIA	0.90 (Non-Reactive) ≥0.9 and <1.0 (Borderline) ≥ 1.0 (Reactive)	
8.	Serum/Plasma	Anti-HBc Igm	ECLIA	0.90 (Non-Reactive) ≥0.9 and <1.0 (Borderline) ≥ 1.0 (Reactive))	
9.	Serum/Plasma	Anti HBe	ECLIA	< 1.0 (Reactive) >1.0 (Non-Reactive)	
10.	Serum/Plasma	HbeAg	ECLIA	0.90 (Non-Reactive) ≥0.9 and <1.0 (Borderline) ≥ 1.0 (Reactive)	
11.	Serum/Plasma	HAV IgM, Rapid	Immunochromatography	NA	
12.	Serum/Plasma	HEV IgM, Rapid	Immunochromatography	NA	
13.	Serum/Plasma	HBeAg Rapid	Immunochromatography	NA	

## 5. Bacteriology

S. NO.	Materials or itemsexamined/ tested	Specific tests/examination performed	Specification, standard(method)or technique used	Range of testing/Limit of detection	CV%
1	Semen	Semen C/S	Conventional	NA	NA
2	Endometrial tissue	Endometrial Fluid Culture *	Conventional	NA	NA
3	HVS	Genital Swab C/S *	Conventional	NA	NA
4	Pus	Pus AFB Stain *	Conventional	NA	NA
5	Endometrial washing	Endometrial Brush Culture *	Conventional	NA	NA
6	Eye swab	Eye Swab C/S *	Conventional	NA	NA
7	Nasal swab	Nasal Swab C/S *	Conventional	NA	NA
8	HVS	Vaginal Swab C/S *	Conventional	NA	NA
9	Urethral discharge	Urethral Swab Culture *	Conventional	NA	NA
10	Throat swab/ culture growth	Albert Stain	Conventional	NA	NA
11	CSF	CSF AFB*	Conventional	NA	NA
12	CSF	CSF Gram Stain*	Conventional	NA	NA
13	Urine	Urine Gram Stain*	Conventional	NA	NA
14	Pus	Pus Gram Stain*	Conventional	NA	NA
15	Throat swab	Throat Gram Stain*	Conventional	NA	NA
16	HVS	HVS Gram Stain*	Conventional	NA	NA
17	Sputum	Sputum Gram Stain*	Conventional	NA	NA
18.	All Fluid	Fluid AFB*	Conventional	NA	NA
19.	All Fluid	Fluid Gram Stain	Conventional	NA	NA
20.	BAL Fluid	BAL C/S*	Conventional	NA	NA
21.	BAL Fluid	BAL For Gram Strain *	Conventional	NA	NA
22.	Endometrial washing	Brush Specimen For Gram Stain	Conventional	NA	NA
23.	Tracheal aspiration	Tracheal Aspiration C/S*	Conventional	NA	NA
24.	Urine	Urine For AFB*	Conventional	NA	NA
25.	All Fluid	Fluid C/S	Conventional	NA	NA
26.	HVS	HVS C/S	Conventional	NA	NA
27.	Urethral swab	Urethral Swab C/S	Conventional	NA	NA
28.	CSF	Indian Ink*	Conventional	NA	NA
28.	Urethral discharge	Urethral Smear GC*	Conventional	NA	NA
29.	Semen	Semen Gram Stain	Conventional	NA	NA
30.	Stool	Stool C/S	Conventional	NA	NA

31.	Urine	Urine C/S*	Conventional	NA	NA
32.	CSF	CSF C/S	Conventional	NA	NA
33.	Throat swab	Throat Swab C/S	Conventional	NA	NA
34.	Blood	BLood C/S	Conventional/Bactec	NA	NA
35.	Sputum	Sputum C/S*	Conventional	NA	NA
36.	Sputum	Sputum AFB Stain*	Conventional	NA	NA
37.	Pus	PUS C/S	Conventional	NA	NA
38	Urethral swab	Urethral Swab Gram Stain	Conventional	NA	NA
39.	Conjunctival Swab	Conjunctival Swab Gram Stain	Conventional	NA	NA
40.	Wound swab	Wound Swab C/S	Conventional	NA	NA
41.	Any swab	Swab C/S	Conventional	NA	NA
42.	Ear swab	Ear Swab C/S	Conventional	NA	NA

## 6.Clinical Pathology

S.N	Materials or itemsexamined/ tested	Specific tests/examination performed	Specification, standard(method)or technique used	Range of testing/Limit of detection	CV%
1	Urine	Urine R/M/E	Conventional	NA	NA
2	Stool	Stool R/M/E	Conventional	NA	NA

## 7. Molecular Testing

S.N	Materials or itemsexamined/ tested	Specific tests/examination performed	Specification, standard(method)or technique used	Range of testing/Limit of detection	CV%
1	Throt swab	Influenza PCR/ typing	rtPCR	NA	NA
2	OP/NS	Covid -19 testing	rtPCR	NA	NA
3	DBS (EDTA/Whole Blood)	HIV-I qualitative test	HIV-1 Total nucleic acid detection,Real time PCR	300-10,000,000 copies /ml	NA
4	Plasma (EDTA)	HIV-1 Viral load	HIV-1 RNA Detection, Real time PCR	20-10,000,000 copies/ml	

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