DIRECTORY OF SERVICES

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DEPARTMENT OF MICROBIOLOGY

KING GEORGE`S MEDICAL UNIVERSITY,
Lucknow (Uttar Pradesh) 226003
Email: microbiology@kgmcindia.edu

GENERAL INFORMATION

LABORATORY WORKING HOURS

The working hours, for the various divisions and specimen acceptance timings are provided in the table below.

S. No.	Working Days	Working Hours
01	Monday- Saturday	09:00 am- 04:00 pm
02	Sundays & Holidays	10:00am- 12:30 pm

SPECIMEN ACCEPTANCE TIMINGS

	Timing	
OPD patients	9.00 a.m. – 2.00 p.m.	OPD counter
Indoor patients	9.00 a.m. – 2.00 p.m.	IPD counter
	2.00 p.m to 9.00 a.m (working days- Round the clock on holidays)	Urgent specimens will be received in Emergency Laboratory

SAMPLE ACCEPTANCE AND REJECTION

Correctly collected, labeled and transported samples will be accepted for testing. If sample is too little and multiple tests are ordered, possible testing will be done and a request for further sample for remaining tests will be placed while receiving sample.

General Rejection Criteria

(Based on factors which could result in incorrect test results or breach of biosafety protocols)

- Leaking vials/sample containers
- Incorrect or unclear labeling of sample/requisition i.e., sample identification not clear
- Samples in incorrect vials (including syringes)/with incorrect anticoagulant for test
- Gross contamination of outer surface of sample
- Incorrectly transported samples likely to result in sample deterioration – too much delay from time of collection, with no clear information on interim storage conditions

Additional criteria for rejection of serum samples

- Grossly hemolysed samples
- Excessively lipemic samples
- Visibly contaminated samples
- Clots in anticoagulated samples

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LIST OF AVAILABLE LABORATORY EXAMINATIONS

S.N	Test Name	Preferred Specimen	Specimen collection & Transport	Optimum sample
1	**BACTERIOLOGY**			
1a	**SMEAR FOR EXAMINATION**			
1	Conjunctival Smear Examination	Conjunctival Smear	sterile swab	1 Swab
2	Smear Examination for Diphtheria	Throat Swab	sterile swab	1 Swab
3	Smear Examination for Gonococcus	Vaginal Swab	sterile swab	1 Swab
4	Smear Examination for bacterial vaginosis	High Vaginal Swab	sterile swab	1 Swab
1b	**DIRECT MICROSCOPY**			
1	DFA for Chlamydia trachomatis cervical swab	cervical swab	sterile swab	1 Swab
2	Microscopy for Bacterial Vaginosis			
3	Wet Mount for Trichomonas vaginalis			
1c	**CULTURE & SENSITIVITY**			
1	Blood Culture & Sensitivity (Automated Aerobic & Anaerobic) With ID/AST (MIC)-Bacteria	Blood	inoculated blood culture bottle	2 sets
2	Blood Culture & Sensitivity (Aerobic Bacterial) Manual ID/AST	Blood	inoculated blood culture bottle	2 sets
3	CSF Culture & Sensitivity(Automated ID/AST) (Bacterial)	CSF	universal sterile container	1-3 ml
4	CSF Culture & Sensitivity(Aerobic Bacterial) Manual ID and AST	CSF	universal sterile container	1-3 ml
5	Pus Culture & Sensitivity (Automated ID/AST with MIC) (Bacterial)	Pus	universal sterile container	1-5 ml
6	Pus Culture & Sensitivity(Aerobic Bacterial) Manual ID & AST	Pus	universal sterile container	1-5 ml
7	Pus Culture & Sensitivity (Anaerobic- Bacterial)	Pus	universal sterile container	1-5 ml
8	Urine Culture & Sensitivity (Automated ID/AST) (Bacterial)	Early Morning Urine	universal sterile container	2-40 ml
9	Urine Culture & Sensitivity (Aerobic - Bacterial)- Manual ID and AST	Early Morning Urine	universal sterile container	2-40 ml
10	Sputum Culture & Sensitivity (Automated ID/AST) (Bacterial)	Sputum Culture & Sensitivity Automated ID/AST) (Bacterial)	sputum	universal sterile container

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11	Throat swab Culture & Sensitivity (Aerobic - Bacterial) Manual	Throat Swab	sterile swab	1 swab
12	Throat swab Culture & Sensitivity (Automated ID/AST) (Bacterial)	Throat Swab	sterile swab	1 swab
13	BAL Culture & Sensitivity (Automated ID/AST) (Bacterial))	BAL	universal sterile container	2-10 ml
14	Stool Culture & Sensitivity (Aerobic - Bacterial) Manual ID and AST	Stool	universal sterile container	2-40 ml of liquid/1 gm of semisolid
15	Stool Culture & Sensitivity (Automated ID/AST) (Bacterial	Stool	universal sterile container	
16	Vaginal Swab Culture & Sensitivity(Automated ID/AST) (Bacterial)	Vaginal Swab	sterile swab	1 swab
17	Trichomonas vaginalis Culture & Sensitivity			
18	Gonococcus Bacterial Culture & Sensitivity	Vaginal Swab	sterile swab	1 swab
19	Body fluids Culture & Sensitivity(Automated ID/AST) (Bacterial)	Body Fluid	universal sterile container	2- 10 ml
20	CVP line Culture & Sensitivity (Aerobic)	CVP	tip of venous catheter in universal sterile container	5 cm of length
21	Tissue Culture & Sensitivity (Automated ID/AST) (Bacterial)	Tissue	universal sterile container	visible tissue
1d	**BACTERIAL SEROLOGY**			
1	Widal Test	Serum	plain vials	3 ml
2	RPR (Rapid Plasma Reagin) Test	Serum	plain vials	3 ml
3	V.D.R.L. Test	Serum	plain vials	3 ml
4	TPHA	Serum	plain vials	3 ml
5	Anti Brucella IgM antibodies	Serum	plain vials	3 ml
6	Anti Brucella IgG antibodies	Serum	plain vials	3 ml
7	Anti- Scrub typhus IgM by ELISA	Serum	plain vials	3 ml
8	Pertussis IgG ELISA	Serum	plain vials	3 ml
9	Anti Leptospira IgM by ELISA	Serum	plain vials	3 ml
1e	**BACTERIAL IMMUNOLOGY & BIOMARKERS**			
1	A.S.O. Titre	Serum	plain vials	3 ml
2	C- Reactive Protein (Quantitative)	Serum	plain vials	3 ml
3	C- Reactive Protein (Qualitative)	Serum	plain vials	3 ml
4	Procalcitonin (Rapid)	Serum	plain vials	3 ml

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5	Procalcitonin (Quantitative)	Serum	plain vials	3 ml
6	Rheumatoid Factor (Latex Agglutination)	Serum	plain vials	3 ml
2	**PARASITOLOGY**			
2a	**MICROSCOPY**			
1	Microscopy FOR OVA & CYST (Routine)	Stool	universal sterile container	2-40 ml of liquid/1 gm of semisolid
2	Microscopy for opportunistic parasite	Stool/Others	universal sterile container	2-40 ml of liquid/1 gm of semisolid/ 3ml
3	Microscopy for Malarial Parasite	Blood	plain vials	3 ml
4	Microscopy for Microfilaria	Blood	plain vials	3 ml
5	Microscopy for Pneumocystis carinii	BAL/Sputum	universal sterile container	2-5 ml
2b	**PARASITIC SEROLOGY**			
1	Rapid Malaria Test (HRP-2 based)	Blood/Serum	plain vials	3 ml
2	Rapid Malaria Test (p-LDH based)	Blood/Serum	plain vials	3 ml
3	Filaria antigen (Rapid)	Blood/Serum	plain vials	3 ml
4	Echinococcus IgG ELISA	Blood/Serum	plain vials	3 ml
5	Entamoeba histolytica antigen ELISA	Blood/Serum	plain vials	3 ml
6	Entamoeba histolytica IgM ELISA	Blood/Serum	plain vials	3 ml
7	Entamoeba histolytica IgG ELISA	Blood/Serum	plain vials	3 ml
8	Cysticercosis IgG ELISA	Blood/Serum	plain vials	3 ml
9	Cryptosporidium stool antigen ELISA	Blood/Serum	plain vials	3 ml
10	Leishmania antibody (Rapid)	Blood/Serum	plain vials	3 ml
11	Stool Antigen for Giardia (ELISA)	Blood/Serum	plain vials	3 ml
12	Toxoplasma IgM by ELISA	Blood/Serum	plain vials	3 ml
2c	**RAPID TEST**			
1	Stool for occult blood	Stool	universal sterile container	2-40 ml of liquid/1 gm of semisolid
3	**MYCOLOGY**			
3a	**FUNGAL MICROSCOPY**			
1	Smear for Fungus (KOH Mount)	Skin/Nail/Hair Scraping	sterile petri plate/black paper	visible sample
2	Immunofluorescence for	Sputum	universal sterile	2-5 ml

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	Pneumocystis		container	
3	Smear examination for Candida	Vaginal Swab	sterile swab	1 swab
3b	**FUNGAL CULTURE & SENSTIVITY**			
1	Skin/Nail for C/S	Skin/Nail Scraping	sterile petri plate/black paper	visible sample
2	Pus for C/S	Pus	universal sterile container	1-5 ml
3	Sputum for C/S	Sputum	universal sterile container	2-5 ml
4	Throat swab (Automated) With ID/AST (MIC)-Yeast (Fungal)	Throat Swab	sterile swab	1 swab
5	BAL for Fungal C/S	BAL	universal sterile container	20-50 ml
6	CSF C/S (Automated) With ID/AST (MIC)-Yeast (Fungal)	CSF	universal sterile container	1-3 ml
7	Blood Culture for Filamentous Fungi (Manual)	Blood	biphasic blood culture bottle	1-4 ml pediatrics/ 8-10 ml adults
8	Blood Culture (Automated) With ID/AST (MIC)-Yeast (Fungal)	Blood	bactec bottle	1-4 ml pediatrics/ 8-10 ml adults
9	Body Fluids for C/S	Pleural/Pericardial	universal sterile container	20-50 ml/2-5 ml
10	Body fluids C/S (Automated ID/AST) Fungal	Pleural/Pericardial	universal sterile container	20-50 ml/2-5 ml
11	Urine C/S (Automated ID/AST) Fungal	Early Morning Urine	universal sterile container	20-50 ml
12	Urine for C/S	Early Morning Urine	universal sterile container	20-50 ml
13	Vaginal swab for C/S	Vaginal Swab	sterile swab	1 swab
14	Stool for C/S	Stool	universal sterile container	2-40 ml of liquid/1 gm of semisolid
3c	**FUNGAL SEROLOGY**			
1	Cryptococcal antigen lateral flow (Rapid)	Blood/Serum	plain vials	1-5 ml
2	Galactomannan ELISA	Blood/Serum	plain vials	1-5 ml
4	**TB LABORATORY**			
1	AFB Microscopy (ZN Stain)	Sputum, CSF, Pus, Body fluids (Pleural, pericardial, synovial,	universal sterile screw caped container	2-5 ml

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		ascitic, BAL, Gastric lavage) Bone marrow aspirates, Tissue aspirates and biopsies, urine and other suitable samples		
2	AFB Microscopy (Auramin O Stain)	-do-	universal sterile screw caped container	2-5 ml
3	AFB Culture - Solid (Manual)	-do-	universal sterile screw caped container	2-5 ml
4	AFB Culture - Liquid (Automated)	-do-	universal sterile screw caped container	2-5 ml
5	AFB Culture and DST- First line drugs (Solid/Manual)	-do-	universal sterile screw caped container	2-5 ml
6	AFB Culture and DST- First line drugs (Liquid/Automated)	-do-	universal sterile screw caped container	2-5 ml
7	AFB Culture and DST- Second line drugs (Liquid/Automated)	-do-	universal sterile screw caped container	2-5 ml
8	Gene Xpert/ CBNAAT (Identification and drug susceptibility testing)	-do-	universal sterile screw caped container	2-5 ml
8	Identification (AFB culture)	AFB culture	Culture tube/ cryovial	--
9	Line Probe Assay (Identification and susceptibility testing)	AFB Positive Sputum Sample; TB Culture Isolate	universal sterile screw caped container	2-5 ml
10	Drug susceptibility testing (Manual-Solid)	AFB culture	culture tube/ cryovial	--
11	Drug susceptibility testing (Automated-Liquid)	AFB culture	Culture tube/ cryovial	--
12	Smear For Lepra Bacilli	Skin Scraping/ Nasal Swab	sterile slide/ swab	visible sample/1 swab
5	**ICTC**			
1	Anti-HIV antibodies	Blood/Serum	plain vials	3 ml
2	CD4 count	Blood/Serum	plain vials	3 ml
6	**VIROLOGY**			
6a	**VIRAL SEROLOGY**			
1	HBsAg ELISA	Blood/Serum	plain vials	3 ml

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2	HBeAg ELISA	Blood/Serum	plain vials	3 ml
3	Anti- Hepatitis B Core Antigen IgM (Anti-HBc IgM) ELISA	Blood/Serum	plain vials	3 ml
4	Anti-Hepatitis B Surface Antigen (Anti-HbsAg)	Blood/Serum	plain vials	3 ml
5	HBeAb ELISA	Blood/Serum	plain vials	3 ml
6	Anti HBs Antibody ELISA	Blood/Serum	plain vials	3 ml
7	Anti- Hepatitis A Virus IgM Antibodies (anti-HAV IgM) (ELISA)	Blood/Serum	plain vials	3 ml
8	Anti- Hepatitis E Virus IgM Antibodies (anti-HEV IgM)(ELISA)	Blood/Serum	plain vials	3 ml
9	Anti- Hepatitis D Virus IgM Antibodies (anti-HDV IgM)(ELISA)	Blood/Serum	plain vials	3 ml
10	Anti HCV Total antibodies by ELISA	Blood/Serum	plain vials	3 ml
11	Anti- Cytomegalovirus IgM Antibodies (Anti- CMV IgM)(ELISA)	Blood/Serum	plain vials	3 ml
12	Anti- Cytomegalovirus IgG Antibodies (Anti- CMV IgG)(ELISA)	Blood/Serum	plain vials	3 ml
13	CMV IgM ELISA	Blood/Serum	plain vials	3 ml
14	TORCH (IgM ELISA)	Blood/Serum	plain vials	3 ml
15	Anti-Chikungunya Virus IgM Antibodies (Anti-ChikV IgM)(ELISA)	Blood/Serum	plain vials	3 ml
16	Anti-Herpes Simplex IgM Antibodies (Anti-HSV IgM)(ELISA)	Blood/Serum	plain vials	3 ml
17	Anti-Measles Virus IgM Antibodies (Anti-Measles IgM)(ELISA)	Blood/Serum	plain vials	3 ml
18	Anti-Measles Virus IgG Antibodies (Anti-Measles IgG)(ELISA)	Blood/Serum	plain vials	3 ml
19	Anti-Mumps Virus IgM Antibodies (Anti-Mumps IgM)(ELISA)	Blood/Serum	plain vials	3 ml
20	Anti-Mumps Virus IgG Antibodies (Anti-Mumps IgG)(ELISA)	Blood/Serum	plain vials	3 ml
21	Anti-Varicella Zoster Virus IgM Antibodies (Anti-VZV IgM)(ELISA)	Blood/Serum	plain vials	3 ml
22	Anti-Varicella Zoster Virus IgG Antibodies (Anti-VZV IgG)(ELISA)	Blood/Serum	plain vials	3 ml
23	Anti-Human Parvovirus B19 IgM Antibodies (Anti- B19V IgM)(ELISA)	Blood/Serum	plain vials	3 ml

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24	Anti-Human Parvovirus B19 IgG Antibodies (Anti- B19V IgG)(ELISA)	Blood/Serum	plain vials	3 ml
25	Anti- Dengue Virus IgM	Blood/Serum	plain vials	3 ml
26	Dengue Virus NS1Ag	Blood/Serum	plain vials	3 ml
27	Anti- Japanese Encephalitis Virus IgM	Blood/Serum	plain vials	3 ml
28	Anti- West Nile Virus IgM Antibodies (Anti-WNV IgM)(ELISA)	Blood/Serum	plain vials	3 ml
29	Anti-Epstein Barr Virus IgM Antibodies (Anti- EBV IgM)(ELISA)	Blood/Serum	plain vials	3 ml
30	Anti-Rubella Virus IgM Antibodies (Anti Rubella IgM)(ELISA)	Blood/Serum	plain vials	3 ml
31	Rotavirus Antigen in stool by ELISA	Blood/Serum	plain vials	3 ml
6b	**MOLECULAR BIOLOGY**			
1	Real Time PCR For Hepatitis B Virus (Qualitative)	Blood/Serum	plain vials	3 ml
2	Real Time PCR with Viral Load estimation For Hepatitis B Virus	Blood/Serum	plain vials	3 ml
3	Real Time PCR For Hepatitis B Virus + Hepatitis C Virus (Quantitative)	Blood/Serum	plain vials	3 ml
4	Genotype For Hepatitis B Virus	Blood/Serum	plain vials	3 ml
5	Genotype For Hepatitis C Virus	Blood/Serum	plain vials	3 ml
6	Real Time PCR For Hepatitis C Virus (Qualitative)	Blood/Serum	plain vials	3 ml
7	Real Time PCR with viral load estimation For Hepatitis C Virus	Blood/Serum	plain vials	3 ml
8	Real Time PCR For Influenza A Virus	Blood/Serum	plain vials	3 ml
9	Real Time PCR For Influenza A Virus (subtype H1N1)	Blood/Serum	plain vials	3 ml
10	Real Time PCR For Influenza A Virus (subtype H3N2)	Blood/Serum	plain vials	3 ml
11	Real Time PCR For Influenza B Virus	Blood/Serum/CSF	plain vials	3 ml
12	Real Time PCR For Respiratory Syncytial Virus	Blood/Serum	plain vials	3 ml
13	Real Time PCR For Parainfluenza Virus 1,2,3,4	Blood/Serum	plain vials	3 ml
14	Real Time PCR For Herpes Simplex 1 Virus	Blood/Serum	plain vials	3 ml

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15	Real Time PCR For Herpes Simplex 2 Virus	Blood/Serum	plain vials	3 ml
16	Real Time PCR For Varicella Zoster Virus	Blood/Serum	plain vials	3 ml
17	Real Time PCR For Human Metapneumovirus	Nasal /Throat Swab	VTM	3 ml
18	Real Time PCR For Japanese Encephalitis Virus	Nasal /Throat Swab	VTM	3 ml
19	Real Time PCR For Dengue Virus	Nasal /Throat Swab	VTM	3 ml
20	Real Time PCR For Measles Virus	Nasal /Throat Swab	VTM	3 ml
21	Real Time PCR For Bocavirus	Nasal /Throat Swab	VTM	3 ml
22	Real Time PCR For Human Adenovirus	Nasal /Throat Swab	VTM	3 ml
23	Real Time PCR For Human Parvovirus B19	Nasal /Throat Swab	VTM	3 ml
24	Real Time PCR For Enterovirus	Nasal /Throat Swab	VTM	3 ml
25	Conventional PCR For Cytomegalovirus	Nasal /Throat Swab	VTM	3 ml
26	Conventional PCR For Rotavirus	Nasal /Throat Swab	VTM	3 ml
27	Conventional PCR For Norovirus	Blood/Serum	universal sterile container	5-15 ml
28	Conventional PCR For Astrovirus	Blood/Serum	universal sterile container	5-15 ml
29	Real Time PCR for Scrub typhus	Blood/Serum	universal sterile container	5-15 ml

Supplementary information for

HIV test: ***Page No. 11-13***

CD4 test: ***Page No. 14***

Tuberculosis tests: ***Page No. 15-16***

For other tests, further information, if required, can be obtained from the respective sections of Department of Microbiology, KGMU.

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SUPPLEMENTARY INFORMATION FOR HIV TESTING .

A. As per NACO guidelines, pre and post test counselling is a requirement of the HIV testing process. Pre and post test counseling is provided by trained ICTC counselors in counseling room no. 115, in the New OPD block. A male and female counsellor are available.

B. The counselor's do the pre-test HIV counseling, take informed consent from individuals, and provide a unique PID no. after getting required information including name, age, sex, aadhar no(if available)., address and contact details. A yellow card(PID card) containing identifiers and the PID number is given to the individual to facilitate sample collection and collection of report. The individual is then directed to the sample collection room next door- room no. 116.

C. For IPD patients, it is expected that the referring clinician has obtained the informed consent by explaining the test and reason for testing. However the attendant who brings the sample is briefly counselled and the patient details are obtained as above and noted. A PID card is issued. In case of any difficulties in inform consent, the clinician can contact the HIV counselors. In special cases the counselors may go to the bed side of admitted patients for counseling.

D. After counseling patients go for registration at sample reception counter.

E. For IPD samples- The blood samples(2-5ml)from the Wards/OTs of the hospital must be transported in red capped vacutainers/ plain sterile sample transport vials of suitable size and NOT IN SYRINGES and be accompanied by a requisition form.

F. The following essential information **must** be present in a legible manner on the requisition form

- Patient identifiers- Name, Age, Sex.
- Sample Type
- Date of collection
- Test(s) Requested
- Name of Referring clinician
- Vials should be labelled with patient name and one other identifier, test required and date of collection.

G. The person collecting and labeling the samples will match the identity of the patient to the requisition form. The sample id barcode is placed on the PID card at the sample reception counter for easy traceability

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H. For OPD and walk in clients, after registration at the sample collection counter, a trained technician/phlebotomist collects 3-5 ml blood by venipuncture after verifying details.

I. Samples are transported to the HIV laboratory section for HIV testing.

J. Samples are tested in the laboratory as per laboratory testing protocol following NACO strategy III. HIV NACO provided Rapid Tests based on three different principles are used and the process is closely quality monitored.

Negative reports are given to those individuals who are test **non-reactive** on HIV rapid test I, which is the most sensitive test.

Positive reports are given to those patients who are test **reactive on all the three HIV Rapid tests (**HIV Rapid Tests I, II & III**).**

If the sample is found **reactive on HIV rapid test I but either of two Rapid tests are found non-reactive**, it is **indeterminate sample** & no report issued to patient. This is an uncommon situation. A fresh sample will be requested from the individual after two week to confirm the HIV status. If upon re-testing the same result is obtained, the sample will be sent to higher lab (SRL/NRL) for further confirmation. It will take around four weeks to get confirmed results.

K. Reports are sent to the counsellor after validation and signatures. The counselors deliver the report after appropriate post test counseling. For HIV positive individuals appropriate linkages, including to ART centre are provided by the counsellors.

L. An attempt is made to ensure that all HIV positive individuals admitted to the wards are counselled by our trained counsellors and linkages provided to ART centre. The physician can also provide counselling and link the individual to the ART Plus centre. For negative IPD reports, it is expected that the physician will disclose results

M. Note that due to heavy patient loads at the OPD, it might take some waiting time for counselling and sample collection.

N. **Turn Around Time for HIV Testing: One Working Day**

(Kindly note that for samples collected before 12:00 PM, report will be available on SAME DAY)

O. **User Charges: Nil (NACO sponsored)**

P. **Contact for any help/queries:**

Room No. 116, New OPD Building KGMU, Chowk, Lucknow

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Email: srl.up.kgmc@gmail.com

Dr. Vimala Venkatesh, Professor & In-charge, HIV Laboratory

Dr. Rajesh Kulshreshtha, Research Officer

Mr. Anuj Kumar Srivastava, Technical Officer, SRL (Mob: 9415433045)

Mr. Sapan Barua, Counselor, ICTC (Mob: 9415465633)

Dr Deepshika, Counsellor, ICTC (Mob: 7376419393)

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SUPPLEMENTARY INFORMATION FOR CD4 TESTING

A. The CD4 testing offered by the department, in collaboration with ART Plus center, KGMU, is sponsored by NACO for the clinical management of HIV positive persons.

B. As per NACO guidelines the HIV positive person attends the ART centre and receives Pre ART counseling, after initial diagnosis. The counsellor notes identifying information like name, age/sex, address, contact number etc. on the "Green ART Card" and in the ART center records and allocates a Pre-ART/ART number, and sends the person for blood sample collection in room no. 13.

C. In the sample collection room 2-3 ml of blood is collected in EDTA vacutainers and a sample ID is allotted, which is also noted on the green ART card and on sample vacutainer.

D. The collected blood samples are transported, to the CD4 laboratory section in cold chain.

E. For In –patients please contact ART center. A nurse will be deputed for bedside sample collection and linkages.

F. The following essential information must be present in a legible manner on the requisition form signed by the nodal officer/Medical officer

Sample ID, Name Age, Sex, PreART/ART No./Previous CD4 count, Date and time of collection

G. Laboratory technician collecting and labeling the sample will match the identity of the individual as per details on the requisition form

H. Sample testing for CD4 is done in the CD4 laboratory section of Department of Microbiology, KGMU on the CyFlow counter.

I. After testing the CD4 count are entered on the requisition slip. After verification and signature of authorized signatory, reports are issued to the ART center, as per NACO guidelines. The CD4 results are also entered online on "IMS NACO"

J. Note: All registered HIV positive persons are tested at 6 monthly intervals for CD4 counts or more frequently, if clinically warranted.

K. **Turn Around Time for CD4 Testing: One Working Day**

L. Contact for any help/queries:

CD4 laboratory, Department of Microbiology, ART Plus Center, Old OPD Block.
Email: srl.up.kgmc@gmail.com

Dr. Vimala Venkatesh, Professor, In charge, CD4 laboratory
Dr. Ritu Tandon, Research Assistant
Mr. Jainender Rai, Laboratory Technician (CD4) (Mob: 9455551474)

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SUPPLEMENTARY INFORMATION FOR TUBERCULOSIS TESTING

OFFERED SERVICES AT TB LABORATORY:

Tests/Method	Offered to
For diagnosis purpose	
AFB Microscopy (ZN Stain/ Auramin O)	Presumptive pulmonary TB case (new case)
CBNAAT (GeneXpert MTB/RIF)	Presumptive TB case among following key population i) Extra-pulmonary sites; ii) Pediatric age group; iii) People living with HIV; iv) Smear negative with X-ray suggestive of pulmonary TB
Line Probe Assay (Genotype MTBDR*plus*)	Smear positive drug resistant (DR) pulmonary TB case who are suspected for drug resistance
First Line Liquid culture DST (MGIT 960)	Presumptive DR-TB case with indeterminate Rifampicin result (in CBNAAT).
Second line Liquid Culture DST (MGIT 960)	Confirmed MDR-TB cases or presumptive XDR-TB
First Line Solid Culture DST (LJ Media)	Presumptive DR-TB case whose samples are in-appropriate (blood or urine) for conducting CBNAAT/LPA.
For treatment follow-up purpose	
AFB Microscopy (ZN Stain/Auramin O)	New TB case
Culture (liquid /Solid)	Drug resistant TB case

Note:
- *Please consider above criteria for selecting suitable test.*
- *Avoid referring multiple tests at a time (except for smear microscopy) and repeat testing.*
- *For treatment follow-up only smear and culture tests (not CBNAAT & LPA) are recommended.*

FFES:

FREE (provided that RNTCP-Test requisition slip is completed, test was selected as per above criteria and has been referred through OPD/IPD of KGMU or RNTCP recognized health facility).

SAMPLE COLLECTION PROCEDURE

- ***Sputum (Expectorated):*** The early morning sputum is preferred. However on-spot collection of sputum is also acceptable but whenever possible efforts should be done to collect a second early morning sputum sample from such patients if the first one is negative.
- ***Sputum (Induced):*** If the patient has difficulty producing a sputum specimen, then induction should be considered. Sputum production may be induced by the inhalation of a warm aerosol of sterile 5-10% sodium chloride in water produced by a nebulizer.
- ***Gastric Lavage:*** This procedure can be employed where sputum production is unsuccessful. This technique requires professional attention and should only be attempted in the hospital. Gastric lavage is performed early in the morning before eating and at least 8 hours after the

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patient has eaten or taken oral drugs. 5-10ml specimen is required and must be neutralized with 100 mg of sodium carbonate.

- ***Fluids:*** Body fluids (spinal, pleural, pericardial, synovial, ascitic, pus, and bone marrow) must be aseptically collected and submitted in sterile containers. Keep refrigerated until transport.
- ***Urine:*** An early morning midstream specimen should be collected. Send entire specimen. Multiple specimens over several days may be required to obtain a positive specimen. Urine sample is not appropriate for CBNNAT and LPA
- ***Tissue:*** Any tissue to be cultured must be collected aseptically into a sterile container without fixatives or preservatives. If the specimen may dry, add sterile saline to keep moist.
- ***Isolates or Cultures for Identification and/or drug susceptibility testing:*** Isolates should be submitted as pure, fresh subcultures on Middlebrook 7H9/10 media or Lowenstein-Jensen media whenever possible.

SAMPLE CONTAINER AND TEST REQUISITION SLIP

- Sterile, wide-mouth, universal specimen containers or 50 ml-conical shaped tubes.
- Vacutainer tube for CSF/other low volume fluids and aspirates.
- Dully filled RNTCP- TB Test Requisition Form is required

Note: Obtain sample container and Test Requisition Form by requesting Head, Department of Microbiology, KGMU.

USUAL TURN-AROUND TIME:

• AFB Microscopy	:	1 Day
• CBNAAT	:	1 Day
• LPA	:	5 Days
• Liquid Culture	:	10-45 Days
• Liquid Culture DST (I^{st}/II^{nd} line drugs)	:	20-45 Days
• Solid Culture	:	30-60 Days
• Solid Culture DST	:	84 Days

Note: *TAT may exceed in conditions when sample load is high (beyond the routine testing capacity of Lab) or wherever repeat testing is required.*

CONTACT FOR ANY HELP/QUERIES:

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