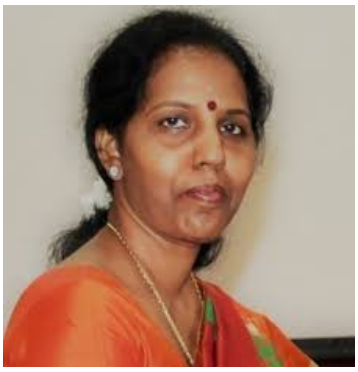
SANKARA NETHRALAYA	**SRI NATHELLA SAMPATHU CHETTY CLINICAL LABORATORY, SANKARA NETHRALAYA** (UNIT OF MEDICAL RESEARCH FOUNDATION) **DIRECTORY OF SERVICES**	**2025**

DEPARTMENT OF CLINICAL & SPECIAL BIOCHEMISTRY



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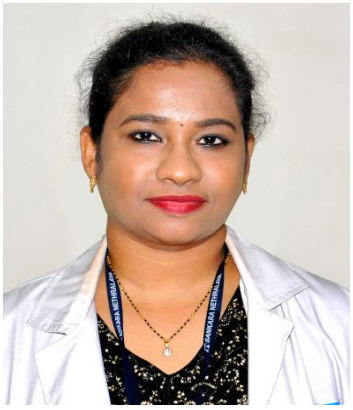

Dr.R.Harini MD
Quality Manager &
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LOCATION OF DEPARTMENT OF CLINICAL & SPECIAL BIOCHEMISTRY

- **Clinical Biochemistry: SN Main Campus, Venugopal Block (VG Block) 1st Floor**
- **Special Clinical Biochemistry: SN Main Campus, KNBIRVO Building 5th Floor**

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GENERAL INSTRUCTION ON SAMPLE COLLECTION

CLINICAL BIOCHEMISTRY:

1. Instructions for routine blood investigation: Clinical Biochemistry:

1.1. Fasting blood sugar (FBS): For a fasting blood sugar test, do not eat or drink anything other than water for at least 8 to 12 hours over night before the blood sample is taken. Tea, coffee, alcohol intake and Smoking and excessive physical exertion are not permitted during this period. Reasonable amount of water intake is permitted. If you are diabetic consult your physician regarding your drug intake instructions.

1.2. 2-hour Postprandial (post Breakfast / lunch) blood sugar: For a 2-hour postprandial test, you need to have your blood collected exactly 2 hours after a regular Breakfast /lunch. Patient can have water and usual medicines post physician consultation regarding the same. PP blood sugar to be collected exactly after 2 hours of food (From the food intake time). The instructions for the same will be given by the Consultant / Physicians /Physician Secretary /SCC (Surgery Scheduling Center). It will be ensured by the Laboratory Enquiry Secretary and counter checked by Technician/ Lab Assistant during interaction with the patients at the time of collection.

1.3. Random blood sugar (RBS): No special preparation is required before having a random blood sugar test. The patient is required to be in non-fasting state; hence blood samples will be collected within 2 hours of last meal intake irrespective of time of the day.

1.4. Lipid profile: Patient should fast for 8-12 hours overnight before blood collection. Fasting should be no food or drink except for water.

1.5. Plasma Glucose tolerance test (OGTT)**- Instructions to patients coming for Oral Glucose Tolerance test (OGTT) Code:103**

Patient should overnight fast for 12 hours before blood collection. Fasting should be no food or drink except for water 82.5g monohydrate glucose in 250ml of water glucose load will be given orally post fasting sample collection.

- First blood should be collected in fasting condition.
- 2nd sample -1 hour after glucose load
- 3rd sample- 2hrs after glucose load

1.6. Gestational Diabetes Mellitus (GDM) **Instructions to pregnant women coming for OGTT for GDM screening/diagnosis Code:104**

Patient should overnight fast for 12 hours before blood collection. Fasting should be no food or drink except for water 82.5g monohydrate glucose in 250ml of water or 100g anhydrous glucose (110 g Monohydrate glucose) load will be given orally post fasting sample collection.

- First blood should be collected in fasting condition.
- 2nd sample -1 hour after glucose load
- 3rd sample- 2hrs after glucose load
- 4th samples- 3 hrs after glucose.load(If 100g load given) Ref: SNSC/CC/3D

1.7. Special Biochemical Investigation:

1. Plasma Amino acid Profile (HPLC)
2. Plasma Homocysteine
3. Paper Chromatography for Plasma Ornithine/ any amino acid
4. Paper Chromatography for Plasma Galactose / other sugars.
5. Microalbuminuria/UACR (Early morning sample)

Fasting Specimen: For all the above mentioned test the patients are instructed to have his/her dinner the previous night not later than 9 pm and following that not to eat or drink except water till he/ she reports to the laboratory (fasting period should be between 8 to 12 hours).

2. Instructions to the patients who have undergone FFA (Fundus Fluorescein Angiography)

In the above mentioned conditions the patients are instructed not to give blood for 24 hours after the FFA for the following test,

1. Angiotensin Converting Enzyme (ACE)
2. Plasma Homocysteine.
3. Microalbumin/UACR
4. Routine urine analysis/ Urine Sugar/Urine LFT

3. Instructions to Patients coming for serum Vitamin A testing:

Should not take vitamin A tablet, Blood should be collected in Fasting Condition (10-12 hours fasting) or Random. No alcohol intake is allowed.

4. Instructions to patients coming for Serum Iron, TIBC and Percentage saturation testing:

Should not take iron medication for 3 days. (Fasting / Random). The test is out sourced.

5. IEM (Inborn Errors of metabolism):

Three containers will be provided for the patient, one of the three containers labeled 'F' (fasting) and the other two containers labeled 'R' (Random). Patient should collect the fasting urine in the 'F' container and the random urine in the 'R' containers. Provide 3 urine containers with pinch of sodium azide.

TEST MASTER LIST

DEPARTMENT OF CLINICAL BIOCHEMISTRY

S. No	Lab/ Ref/ Code	Name of the test	Specimen required Blood - volume	Anti coagulants (vacutainer/Urine)	**Reportable interval (TAT)	Storage of examined specimen / temp.	Information to the patients	Tariff
1.	101	Blood Glucose (Glucometer) F/R/PP	Capillary blood	NA	1 hour 2 hours (in package)	NA	F- Fasting- - no caloric intake for at least 10-12 hrs. R- Random- any time PP- 2 hours Postprandial Blood should be collected 2 hrs after intake of food.	150
2.	102	Plasma Glucose F/R/PP	2 ml + Urine to be collected	Sodium Fluoride + Na_2 EDTA	1 hour 2 hours (in package)	24 hours /2-8°C	F- Fasting- - no caloric intake for at least 10-12 hrs. R- Random- any time PP- 2 hours Postprandial Blood should be collected 2 hrs after intake of food.	150

3.	**103**	Oral Glucose Tolerance test (OGTT) Plasma glucose-3 samples	2 ml + Urine to be collected	Sodium Fluoride + Na_2 EDTA Urine container (No preservative)	4 hours	24 hours / 2-8°C	First sample should be collected in fasting condition. 10 to 12 hrs 2nd sample -1 hour after 82.5g glucose load. 3rd sample- 2hrs after 82.5g glucose intake.	**570**
4.	**104**	Gestational Diabetes Mellitus (GDM) Plasma glucose-3/4 Samples(depending on glucose load)	2ml + Urine to be collected.	Sodium Fluoride + Na_2 EDTA Urine container (No preservative)	5 hours	24 hours / 2-8°C	First sample should be collected in fasting condition. 10-12 hours 2nd sample -1 hour after 82.5g glucose load. 3rd sample- 2hrs after 82.5 g glucose intake. 4th samples- 3 hrs after glucose. Intake. (if 100g load of anhydrous glucose)	**570**

5.	**105**	Plasma/Serum Urea Creatinine	4 ml	Heparin Plasma/ EDTA plasma (Cobas)/plain	1 hour 2 hours (in a package)	24 hours /- 2-8°C	Random	**300**
6.	**106**	Serum/plasma Cholesterol	4 ml	Plain/Heparin	2 hours	24 hours / 2-8°C	Fasting/Random	**210**
7.	**108**	Plasma/serum Sodium and Potassium	4 ml	Heparin/Plain	1 hour	24 hours / 2-8°C	Random	**550**
8.	**113**	**Serum/plasma LFT** Bilirubin Total/Direct Total Protein & albumin, ALT, AST, ALP, GGT.	4 ml	Plain/Heparin	2 hours	24 hours / 2-8°C	Random	**1440**
9.	**114**	Serum/plasma Bilirubin (Total/Direct)	4 ml	Plain/Heparin	2 hours	24 hours /- 2-8°C	Random	**320**
10.	**115**	Serum / plasma Total Protein and albumin	4 ml	Plain/Heparin	2 hours	24 hours / 2-8°C	Random	**250**
11.	**116**	Serum / plasma Alkaline Phosphatase	4 ml	Plain/ Heparin	2 hours	24 hours / 2-8°C	Random	**250**
12.	**117**	Serum/ plasma Alanine amino transferase	4 ml	Plain/ Heparin	2 hours	24 hours / 2-8°C	Random	**250**
13.	**118**	Serum / plasma Aspartate amino transferase	4 ml	Plain/Heparin	2 hours	24 hours / 2-8°C	Random	**270**

14.	123	**Serum/Plasma Lipid profile** Total Cholesterol HDL cholesterol Triacylglycerol LDL cholesterol	4 ml	Plain/Heparin	2 hours	24 hours / 2-8°C	Blood should be collected in fasting condition.(10 -12 hours overnight)	1060
15.	124	Serum/ plasma Triacyl Glycerol (TGL)	4 ml	Plain/Heparin	2 hours	24 hours / 2-8°C	Blood should be collected in fasting condition	270
16.	126	Angiotensin converting enzyme (ACE)	4 ml	Plain	24 hours	24 hours / -20 °C	For the FFA undergone patients' blood should be collected after 24 hours.	1310
17.	127*	Urine Inborn errors of metabolism 3 samples	20ml urine	Urine container with preservative	8 hours	Discarded on the same day	Provide 3 urine containers with pinch of sodium azide. 1 for fasting and 2 for Random sample	600
18.	128*	CSF– sugar, protein and chloride	CSF- 1.0ml	---	8 hours	24 hours/ 2-8 °C	Should be received as early as possible. (Same day)	780

19.	**132***	Urine-Homocystinuria screening	50ml urine	Urine container	8 hours	Discarded on the same day.	Urine containers should be provided with pinch of sodium azide. Sample should be collected in fasting condition.	**350**
20.	**151***	HbA1c	2 ml	EDTA whole blood	2.5 hours	24 hours 2-8°C	Blood to be collected in fasting / Random condition	**400**
21.	**154**	Serum/Plasma GGT (Gamma Glutamyl Transferase)	4ml	Plain/Heparin	2 hours	24 hours 2-8°C	Random	**180**
22.	**158***	Serum/Plasma Bicarbonate	4 ml	Plain/Heparin	1 hour	24 hours 2-8°C	Random	**400**
23.	**159***	Chem 8 Panel- POCT	4 ml	Heparinized Blood	30 minutes	24 hours 2-8°C	Random	**1300**
24	**160***	Trop I – POCT	4 ml	Heparinized Blood	30 minutes	24 hours 2-8°C	Random	**2000**
25	**161**	Serum /Plasma Calcium	4 ml	Heparin /Plain	2 hours.	24 hours / 2-8°C	Random	**300**
26	**162**	Serum /Plasma Inorganic Phosphorus	4 ml	Heparin /Plain	2 hours.	24 hours / 2-8°C	Random	**300**
27	**164***	Vitamin D(25 Hydroxy)	4 ml	Plain	4 Hours	24 hours / 2-8°C	Random	**1600**

28	**165***	Anti CCP (Cyclic Citrullinated peptide antibodies)	4 ml	Plain	4 Hours	24 hours / 2-8°C	Random	**1350**
29	**166***	Thyroid Profile	4 ml	Plain	4 Hours	24 hours / 2-8°C	Fasting/Random	**1000**
30	**Others ***	BNP – POCT	2 ml	EDTA Blood	30 minutes	24 hours 2-8°C	Random	**2500**

*** NOT IN NABL SCOPE**

F- Fasting- -no caloric intake for at least 10-12 hrs. R- Random-any time PP- 2 hours Postprandial
FFA: Fundus Fluorescein Angiogram

TEST MASTER LIST

DEPARTMENT OF SPECIAL BIOCHEMISTRY

S. No	Code No	Name of the Test	Specimen Required	Anti Coagulant	Reportable intervals (TAT)	Temp./ Storage time of examined specimen	Information to the patients	
1	131*	Serum Vitamin A	4 ml serum	Plain	3 days	-20° C/ 3 days	Should not have taken vitamin A tablet 24 h prior, Blood should be collected in fasting Condition (10-12 hours fasting) No alcohol intake.	3000
2	121*	Electrophoresis for protein serum/ urine/CSF	4ml serum /5 ml urine /1ml CSF	Plain	2 days	-20° C/ 3 days	Random	750
3	122*	Electrophoresis for Lipoprotein	4 ml serum	Plain	2 days	-20° C/ 3 days	Fasting condition (10- 12 hours fasting)	850
4	125*	Blood Pyruvate and Lactate	2 ml whole blood	4ml of 0.6M per chloric acid.	2 days	-20° C/ 3 days	4 hours Fasting is preferred / Random	1800
5	133*	Paper chromatography for Galactose/any sugars 2 samples plasma/urine	2 ml plasma /5 ml urine	Fluoride NaF& Na2 EDTA	2 days	-20° C/ 3 days	1. Fasting 2. 2hrs PP Blood and urine to be collected.	800

6	**134***	Paper chromatography for Ornithine / amino acids	2ml Plasma/ 5 ml urine	ACD 300 µL	3 days	-20º C/ 3 days	Blood should be collected in fasting condition. (10- 12 hours fasting)	**1300**
7	**141***	Serum Vitamin E	4 ml serum	Plain	3 days	-20º C/ 3 days	Fasting/random	**3000**
8	**142***	Plasma vitamin C	4 ml plasma	Heparin	2 days	4°C/ 24 hours	Fasting(10- 12 hours fasting) or Random	**1300**
9	**143***	Blood Glutathione	2 ml whole blood	EDTA	3 days	-20º C/ 3 days	Fasting (10- 12 hours) or Random	**650**
10	**144***	Blood Glutathione Peroxidase	2 ml whole blood	EDTA	3 days	-20º C/ 3 days	Fasting(10- 12 hours fasting) or Random	**1070**
11	**145***	Blood Superoxide dismutase	4 ml whole blood	Heparin	3 days	-20º C/ 3 days	Fasting (10- 12 hours fasting) or Random	**650**
12	**146***	Blood Thio Barbituric Acid Reactive Substances	2 ml whole blood	EDTA	3 days	-20º C/ 3 days	Fasting(10- 12 hours fasting) or Random	**300**
13	**112***	Serum Ceruloplasmin	4 ml serum	Plain	3 days	3 days /2-8°C	--	**1100**
14	**135***	Amino acid profile – plasma	2 ml plasma	ACD (Acid citrate dextrose) 300 µL	7 days	-20°C/15 days (Plasma)	Blood should be collected in fasting condition	**2600**

15	**136***	Amino acid profile-Urine	5 ml Urine With preservative	----	7 days	-20°C/ 15 days after centrifugation 2500 rpm / 10 minutes.	Urine container Provided with pinch of sodium azide. Sample should be collected in fasting condition. (10- 12 hours fasting)	**2600**
16	**138***	Serum Homocysteine	2 ml Serum	Plain	2 days.	-20° C/3 days	Blood should be collected in fasting condition. (10-12 hours fasting)	**1500**
17	**180***	Zinc	4 ml serum	Plain	2 days	4°C / 24 hours	Random	**700**
18	**181***	Serum Neuron Specific Enolase	4 ml serum	Plain	Every Tuesday	-20 ° C/30 days	Random	**2900**

*** NOT IN NABL SCOPE**

ACCEPTANCE / REJECTION CRITERIA FOR BIOCHEMISTRY

S. No	Specimen acceptance criteria	Specimen rejection criteria	Action taken
1	Labelled Samples with the patient ID and test details with correct barcode	Unlabeled /wrongly labeled samples	If specimen obtained by non-invasive procedure (Urine, Sputum or throat swab) – Recollect the sample. If specimen is obtained by invasive procedure like needle aspiration, or if it is body fluids, then process after consulting with the referring physician.
2.	Sample matches with the Test Request form	If sample does not match with the Test Request form	Do not Process. Inform the referring physician and ask for a sample rework
3	Proper and non leaking Specimen container	Improper/broken/ Leaking Specimen container	Do not Process. Inform the referring physician and ask for a sample rework
4	Sample received at appropriate time after collection	Prolonged transport time beyond acceptable limits and in improper transport conditions for all samples	Do not Process. Inform the referring physician and ask for a sample rework
5	Specimen suitable for test requested	Specimen unsuitable for the test requested	Do not Process. Inform the referring physician and ask for a sample rework.

6	Specimen collected fulfills the sufficient volume criteria for all tests requested	Insufficient sample volume	Process as much as possible. Inform the referring physician and ask for a sample rework.
7	Specimen collected in appropriate vacutainer under appropriate conditions as required by the tests requested	Specimen collected in inappropriate or wrong vacutainer under inappropriate conditions as required by the tests requested	Do not Process. Inform the referring physician and ask for a sample rework If precious sample process with approval from authorized signatory with comments in report.
8	Specimen collected after appropriate patient preparation fulfillment for the tests requested	Sample collected from a patient who had not fulfilled the preparation criteria for test requested	Do not process. Inform the referring physician and ask for a sample rework.
9	Specimen with no contamination	Contamination of specimen collected. Eg: IV line sample collection- blood Urine- contamination with vaginal secretion or fecal matter	Do not process. Inform the referring physician and ask for a sample rework.

10	Sample non hemolysed, non lipemic, non-icteric	• Hemolysed • Lipemia • Highly icteric sample • samples will be rejected based on the degree of HIL and the test requested.	Do no process. Inform the referring physician and ask for a sample rework. Also follow the below enumerated criteria on need as per case by case basis and tests requested. If precious sample or in special cases with partial hemolysis after approval by authorized signatory sample can be processed with comment in the report.

Effects of Hemolysis/ Lipemic / Icteric interference on Biochemical parameters

Hemolysed samples:	**Lipemic samples:**	**Highly icteric samples**:
Hemolysis interference is approximately linearly dependent on the final concentration of free Hb in the specimen. • It generates a consistent trend towards overestimation of: – ALT & AST – Creatinine – Creatine kinase (CK)	slight lipemia to marked lipemia: **Falsely increased**: Direct bilirubin and TIBC **Falsely decreased**: sodium, chloride and comparatively less effect potassium Unknown sometimes increased or decreased:	**Falsely decreased:** >= 6 total protein and Triglyceride and in very rare instances of highly icteric samples cholesterol, creatinine, GGT, Uric acid are also affected. **Unknown or increased**: Fructosamine is affected in slight to high icteric index

– Iron – LDH – Lipase – Magnesium – Phosphorus – Potassium – Urea -Neuron Specific Enolase • <u>It generates a consistent trend towards underestimation of:</u> – Albumin – ALP – Chloride & Sodium – GGT – Glucose • Clinically meaningful variations of AST, chloride, LDH, potassium and sodium were observed in specimens with mild hemolysis (free Hb ~60 mg/dL).	ALT, AST, Albumin, Calcium, CK, Cholinesterase, BUN, Phosphate, Total Bilirubin	only in very high icteric Direct bilirubin and phosphate is affected.

* Record the problem in the sample rejection register if sample is rejected and document the corrective action taken