DIAGNOSTIC REPORT

[redacted]

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COLLEGE of AMERICAN PATHOLOGISTS

ilac-MRA

Cert. No. MC-2010

SRL Diagnostics

SRL LIMITED
PRIME SQUARE BUILDING,PLOT NO 1,GAIWADI INDUSTRIAL ESTATE,S.V. ROAD,GOREGAON (W)
Mumbai, 400062
MAHARASHTRA, INDIA
Tel : 1-800-222-000,
CIN - U74899PB1995PLC045956
Email : connect@srl.in

[redacted]

ACCESSION NO : **0002SL002302** AGE : 41 Years SEX : Male DATE OF BIRTH : 16/01/1978

DRAWN : 02/12/2019 09:12 RECEIVED : 02/12/2019 09:13 REPORTED : 02/12/2019 16:29

REFERRING DOCTOR : SELF CLIENT PATIENT ID : EMP CODE 0686

Test Report Status **Final**	Results		Biological Reference Interval	Units
COMPLETE CARE ADVANCE				
BLOOD COUNTS				
HEMOGLOBIN	15.3		13.0 - 17.0	g/dL
METHOD : PHOTOMETRIC MEASUREMENT, CYANMETHEMOGLOBIN METHOD				
RED BLOOD CELL COUNT	5.30		4.5 - 5.5	mil/µL
METHOD : COULTER PRINCIPLE				
WHITE BLOOD CELL COUNT	7.2		4.0 - 10.0	thou/µL
METHOD : COULTER PRINCIPLE				
PLATELET COUNT	186		150 - 410	thou/µL
METHOD : ELECTRONIC IMPEDENCE & MICROSCOPY				
RBC AND PLATELET INDICES				
HEMATOCRIT	44.7		40.0 - 50.0	%
METHOD : CALCULATED PARAMETER				
MEAN CORPUSCULAR VOLUME	84.3		83.0 - 101.0	fL
METHOD : DERIVED PARAMETER FROM RBC HISTOGRAM				
MEAN CORPUSCULAR HEMOGLOBIN	28.9		27.0 - 32.0	pg
METHOD : CALCULATED PARAMETER				
MEAN CORPUSCULAR HEMOGLOBIN CONCENTRATION	34.4		31.5 - 34.5	g/dL
METHOD : CALCULATED PARAMETER				
RED CELL DISTRIBUTION WIDTH	**14.5**	**High**	11.6 - 14.0	%
METHOD : DERIVED PARAMETER FROM RBC HISTOGRAM				
MEAN PLATELET VOLUME	9.6		6.8 - 10.9	fL
METHOD : DERIVED PARAMETER FROM PLATELET HISTOGRAM				
WBC DIFFERENTIAL COUNT				
NEUTROPHILS	51		40 - 80	%
METHOD : VCS TECHNOLOGY/ MICROSCOPY				
ABSOLUTE NEUTROPHIL COUNT	3.67		2.0 - 7.0	thou/µL
METHOD : CALCULATED PARAMETER				
EOSINOPHILS	**7**	**High**	1.0 - 6.0	%
METHOD : VCS TECHNOLOGY/ MICROSCOPY				
ABSOLUTE EOSINOPHIL COUNT	0.50		0.02 - 0.50	thou/µL
METHOD : CALCULATED PARAMETER				
LYMPHOCYTES	35		20 - 40	%
METHOD : VCS TECHNOLOGY/ MICROSCOPY				
ABSOLUTE LYMPHOCYTE COUNT	2.52		1.0 - 3.0	thou/µL
METHOD : CALCULATED PARAMETER				
MONOCYTES	6		2.0 - 10.0	%

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METHOD : VCS TECHNOLOGY/ MICROSCOPY				
ABSOLUTE MONOCYTE COUNT	0.43		0.2 - 1.0	thou/µL
METHOD : CALCULATED PARAMETER				
BASOPHILS	1		0 - 2	%
METHOD : VCS TECHNOLOGY/ MICROSCOPY				
ABSOLUTE BASOPHIL COUNT	0.07		0.02 - 0.10	thou/µL
METHOD : CALCULATED PARAMETER				
ASPARTATE AMINOTRANSFERASE, SERUM				
ASPARTATE AMINOTRANSFERASE (AST/SGOT)	21		Upto 40	U/L
METHOD : SPECTROPHOTOMETRY, WITHOUT PYRIDOXAL PHOSPHATE ACTIVATION(P5P) - IFCC				
Comments				
KINDLY NOTE THAT THERE IS A CHANGE IN PLATFORM FOR CHEMISTRY PARAMETERS AND REFERENCE RANGE IS IN ACCORDANCE TO IT. ADVISE TO INTERPRET THE RESULT ACCORDINGLY.				
ALANINE AMINOTRANSFERASE, SERUM				
ALANINE AMINOTRANSFERASE (ALT/SGPT)	21		Upto 41	U/L
METHOD : SPECTROPHOTOMETRY, WITHOUT PYRIDOXAL PHOSPHATE ACTIVATION(P5P) - IFCC				
ALKALINE PHOSPHATASE, SERUM				
ALKALINE PHOSPHATASE	79		40 - 129	U/L
METHOD : SPECTROPHOTOMETRY, PNPP, AMP BUFFER - IFCC				
LACTATE DEHYDROGENASE, SERUM				
LACTATE DEHYDROGENASE	197		< 232	U/L
METHOD : SPECTROPHOTOMETRY, LACTATE TO PYRUVATE - UV-IFCC				
BILIRUBIN (TOTAL, DIRECT, INDIRECT), SERUM				
BILIRUBIN, TOTAL	0.66		Upto 1.2	mg/dL
METHOD : SPECTROPHOTOMETRY, COLORIMETRIC -DIAZO METHOD				
BILIRUBIN, DIRECT	**0.29**	**High**	0.0 - 0.2	mg/dL
METHOD : SPECTROPHOTOMETRY, JENDRASSIK & GROFF - DIAZOTIZATION				
BILIRUBIN, INDIRECT	0.37		0.1 - 1.0	mg/dL
METHOD : CALCULATED PARAMETER				
TOTAL PROTEIN,ALBUMIN,GLOBULIN, SERUM				
TOTAL PROTEIN	7.5		6.0 - 8.0	g/dL
METHOD : SPECTROPHOTOMETRY, COLORIMETRIC -BIURET, REAGENT BLANK, SERUM BLANK				
ALBUMIN	4.9		3.97 - 4.94	g/dL
METHOD : SPECTROPHOTOMETRY, BROMOCRESOL GREEN(BCG) - DYE BINDING				
GLOBULIN	2.6		2.0 - 3.5	g/dL
METHOD : CALCULATED PARAMETER				
ALBUMIN/GLOBULIN RATIO	1.9		1.0 - 2.1	Ratio

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METHOD : CALCULATED PARAMETER

*** 25 - HYDROXYVITAMIN D, SERUM**

25 - HYDROXYVITAMIN D	**20.30**	**Low**	Deficiency: < 20.0 Insufficiency: 20.0 - < 30.0 Sufficiency: > 30.0 - 100.0 Excess: > 100.0 -150.0 Toxicity: > 150.0	ng/mL

METHOD : COMPETITIVE ELECTROCHEMILUMINESCENCE IMMUNOASSAY

COMMENT:
PLEASE NOTE THE CHANGE IN REFERENCE RANGE AND METHODOLOGY.

*** TSH 3RD GENERATION ULTRA(TSH3 - UL), SERUM**

TSH 3RD GENERATION	2.220		0.27 - 4.20	µIU/mL

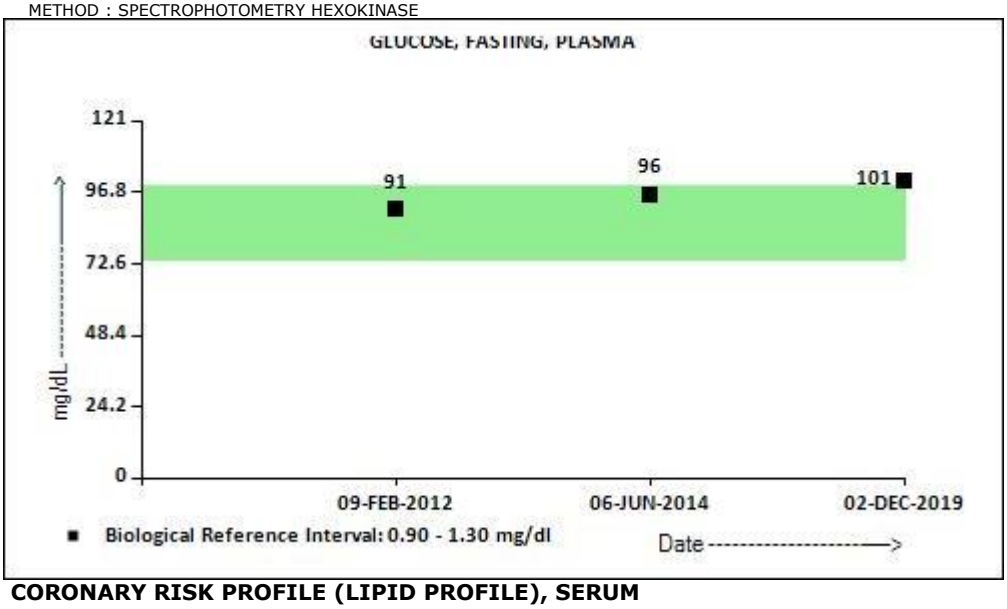
METHOD : SANDWICH ELECTROCHEMILUMINESCENCE IMMUNOASSAY

COMMENT:
PLEASE NOTE THE CHANGE IN REFERENCE RANGE AND METHODOLOGY.

GLUCOSE, FASTING, PLASMA

GLUCOSE, FASTING, PLASMA	**101**	**High**	74 - 99	mg/dL

METHOD : SPECTROPHOTOMETRY HEXOKINASE



CORONARY RISK PROFILE (LIPID PROFILE), SERUM

CHOLESTEROL	154		Desirable cholesterol level < 200 Borderline high cholesterol 200 - 239 High cholesterol > / = 240	mg/dL

METHOD : SPECTROPHOTOMETRY, ENZYMATIC COLORIMETRIC - CHOLETSEROL OXIDASE, ESTERASE, PEROXIDASE

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TRIGLYCERIDES	79		Normal: < 150 Borderline high: 150 - 199 High: 200 - 499 Very High: >/= 500	mg/dL
METHOD : SPECTROPHOTOMETRY, ENZYMATIC ENDPOINT WITH GLYCEROL BLANK				
HDL CHOLESTEROL	47		Low HDL cholesterol < 40 High HDL cholesterol > / = 60	mg/dL
METHOD : SPECTROPHOTOMETRY, HOMOGENEOUS DIRECT ENZYMATIC COLORIMETRIC				
DIRECT LDL CHOLESTEROL	**107**	**High**	Optimal : < 100 Near optimal/above optimal : 100-129 Borderline high : 130-159 High : 160-189 Very high : > / = 190	mg/dL
METHOD : SPECTROPHOTOMETRY, HOMOGENEOUS ENZYMATIC COLORIMETRIC				
NON HDL CHOLESTEROL	107		Desirable : < 130 Above Desirable : 130 -159 Borderline High : 160 - 189 High : 190 - 219 Very high : > / = 220	mg/dL
METHOD : CALCULATED PARAMETER				
CHOL/HDL RATIO	3.3		Low Risk : 3.3 - 4.4 Average Risk : 4.5 - 7.0 Moderate Risk : 7.1 - 11.0 High Risk : > 11.0	
METHOD : CALCULATED PARAMETER				
LDL/HDL RATIO	2.3		Desirable/Low Risk : 0.5 - 3.0 Borderline/Moderate Risk : 3.1 - 6.0 High Risk : > 6.0	
METHOD : CALCULATED PARAMETER				
VERY LOW DENSITY LIPOPROTEIN	15.7		< or = 30.0	mg/dL
METHOD : CALCULATED PARAMETER				

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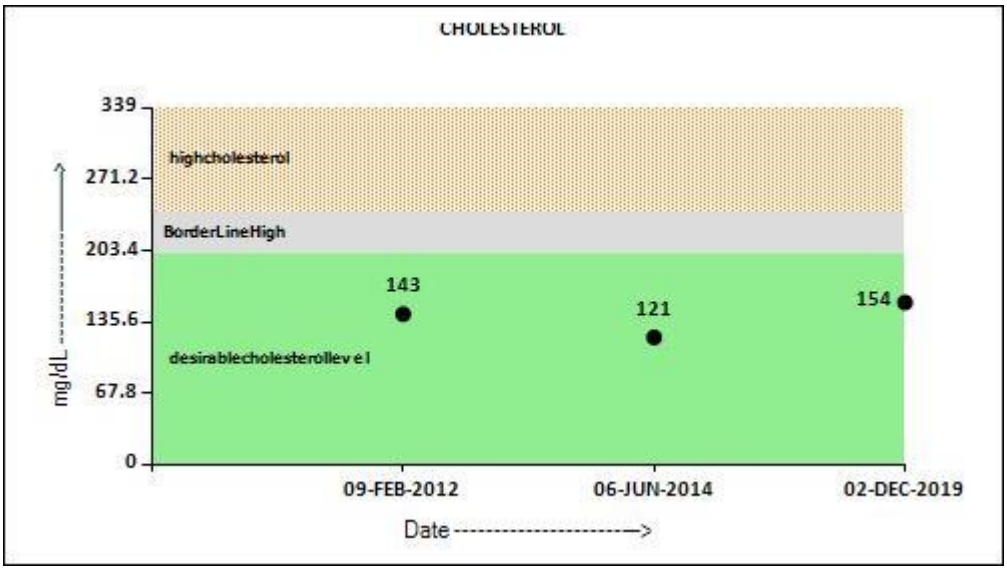

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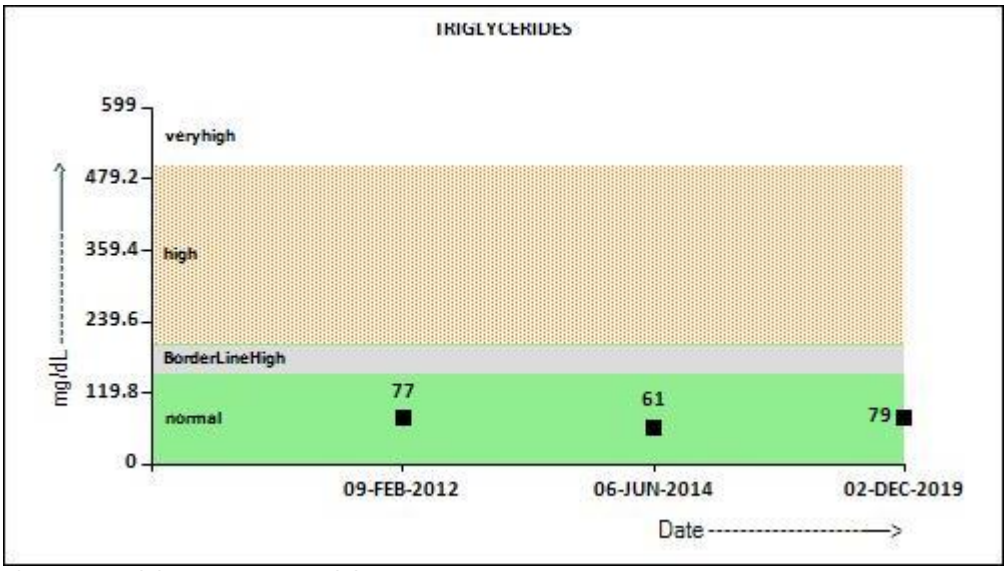
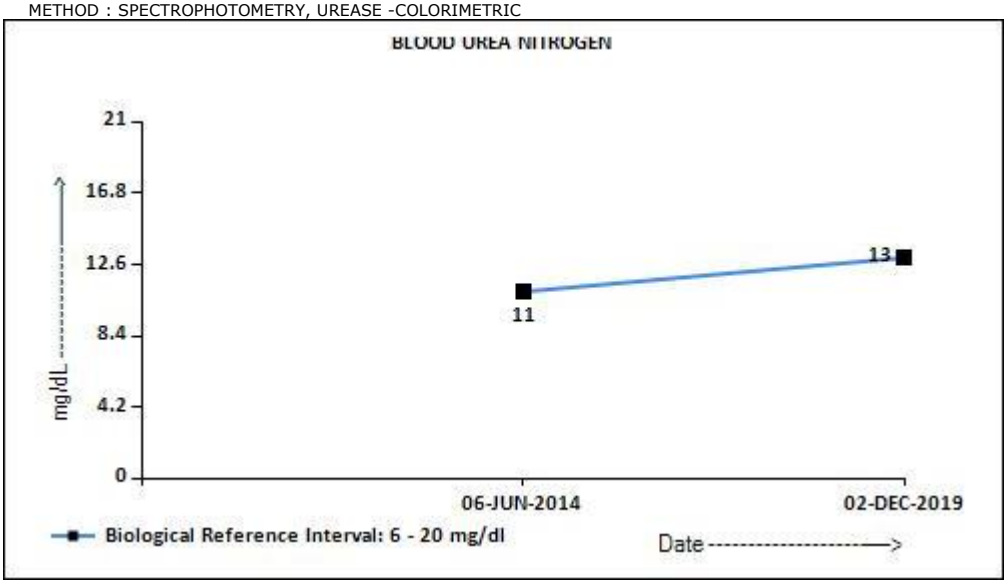


SERUM BLOOD UREA NITROGEN

BLOOD UREA NITROGEN	13	6 - 20	mg/dL

METHOD : SPECTROPHOTOMETRY, UREASE -COLORIMETRIC



CREATININE, SERUM

CREATININE	1.20	0.90 - 1.30	mg/dL

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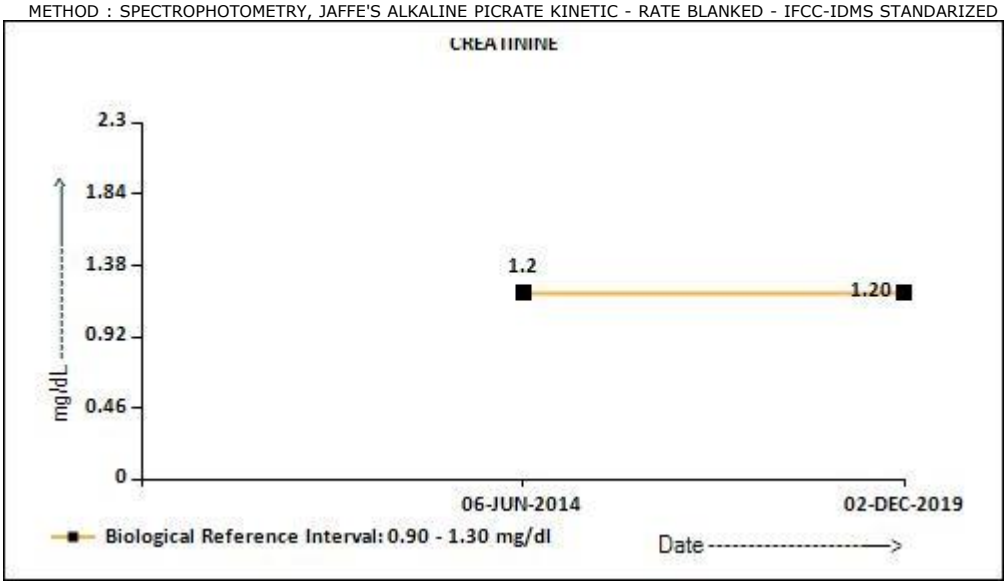
METHOD : SPECTROPHOTOMETRY, JAFFE'S ALKALINE PICRATE KINETIC - RATE BLANKED - IFCC-IDMS STANDARIZED



BUN/CREAT RATIO

BUN/CREAT RATIO	11.30	8 - 15	

METHOD : CALCULATED PARAMETER

URIC ACID, SERUM

URIC ACID	5.4	3.4 - 7.0	mg/dL

METHOD : SPECTROPHOTOMETRY, ENZYMATIC COLORIMETRIC- URICASE

ELECTROLYTES (NA/K/CL), SERUM

SODIUM	141	136 - 145	mmol/L

METHOD : ISE INDIRECT

POTASSIUM	3.83	3.5 - 5.1	mmol/L

METHOD : ISE INDIRECT

CHLORIDE	102	98 - 106	mmol/L

METHOD : ISE INDIRECT

URINALYSIS

COLOR	PALE YELLOW		

METHOD : REFLECTANCE SPECTROPHOTOMETRY

APPEARANCE	CLEAR		

METHOD : REFLECTANCE SPECTROPHOTOMETRY

PH	7.5	4.7 - 7.5	

METHOD : REFLECTANCE SPECTROPHOTOMETRY- DOUBLE INDICATOR METHOD

SPECIFIC GRAVITY	<=1.005	1.003 - 1.035	

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METHOD : REFLECTANCE SPECTROPHOTOMETRY- PKA CHANGE OF AN IONIC POLYELECTROLYTE			
GLUCOSE	NOT DETECTED	NOT DETECTED	
METHOD : REFLECTANCE SPECTROPHOTOMETRY, DOUBLE SEQUENTIAL ENZYME REACTION-GOD/POD			
PROTEIN	NOT DETECTED	NOT DETECTED	
METHOD : REFLECTANCE SPECTROPHOTOMETRY - PROTEIN-ERROR-OF-INDICATOR PRINCIPLE			
KETONES	NOT DETECTED	NOT DETECTED	
METHOD : REFLECTANCE SPECTROPHOTOMETRY, ROTHERA'S PRINCIPLE			
BLOOD	NOT DETECTED	NOT DETECTED	
METHOD : REFLECTANCE SPECTROPHOTOMETRY, PEROXIDASE LIKE ACTIVITY OF HAEMOGLOBIN			
BILIRUBIN	NOT DETECTED	NOT DETECTED	
METHOD : REFLECTANCE SPECTROPHOTOMETRY, DIAZOTIZATION- COUPLING OF BILIRUBIN WITH DIAZOTIZED SALT			
UROBILINOGEN	NORMAL	NORMAL	
METHOD : REFLECTANCE SPECTROPHOTOMETRY - EHRLICH REACTION			
NITRITE	NOT DETECTED	NOT DETECTED	
METHOD : REFLECTANCE SPECTROPHOTOMETRY, CONVERSION OF NITRATE TO NITRITE			
WBC	1-2	0-5	/HPF
METHOD : MICROSCOPIC EXAMINATION			
EPITHELIAL CELLS	0-1	0-5	/HPF
METHOD : MICROSCOPIC EXAMINATION			
RED BLOOD CELLS	NOT DETECTED	NOT DETECTED	/HPF
METHOD : MICROSCOPIC EXAMINATION			
CASTS	NOT DETECTED		
METHOD : MICROSCOPIC EXAMINATION			
CRYSTALS	NOT DETECTED		
METHOD : MICROSCOPIC EXAMINATION			
BACTERIA	NOT DETECTED	NOT DETECTED	
METHOD : MICROSCOPIC EXAMINATION			

Comments

URINALYSIS : MICROSCOPIC EXAMINATION OF URINE IS CARRIED OUT ON CENTRIFUGED URINARY SEDIMENT.

RHEUMATOID FACTOR QUANTITATIVE, SERUM

RHEUMATOID FACTOR	<9.7	< 15	IU/mL
METHOD : NEPHELOMETRY, PARTICLE- ENHANCED IMMUNONEPHELOMETRY			

Interpretation(s)
ASPARTATE AMINOTRANSFERASE, SERUM-
Aminotransferase (AST) is an enzyme found in various parts of the body .AST is found in the liver, heart, skeletal muscle, kidneys, brain, and red blood cells, and it is commonly measured clinically as a marker for liver health. AST levels increase during chronic viral hepatitis, blockage of the bile duct, cirrhosis of the liver, liver cancer, kidney failure, hemolytic anemia, pancreatitis, hemochromatosis. AST levels may also increase after a heart attack or strenuous activity.
ALANINE AMINOTRANSFERASE, SERUM-
Alanine aminotransferase (ALT) test measures the amount of this enzyme in the blood. ALT is found mainly in the liver, but also in smaller amounts in the kidneys, heart, muscles, and pancreas. It is commonly measured as a part of a diagnostic evaluation of hepatocellular injury, to determine liver health. . AST levels increase during acute hepatitis, sometimes due to a viral infection, ischemia to the liver, chronic hepatitis, obstruction of bile ducts, cirrhosis.
ALKALINE PHOSPHATASE, SERUM-
Alkaline phosphatase (ALP) is a protein found in almost all body tissues. Tissues with higher amounts of ALP include the liver, bile ducts, and bone. Elevated Alkaline

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Phosphaqtase levels are seen in Biliary obstruction,Osteoblastic bone tumors, osteomalacia, hepatitis, Hyperparathyroidism,Leukemia, Lymphoma,Paget's disease,Rickets,Sarcoidosis etc. Lower-than-normal ALP levels seen in Hypophosphatasia, Malnutrition, Protein deficiency,Wilson's disease .
LACTATE DEHYDROGENASE, SERUM-
LDH is an enzyme that helps in energy production. It is present in almost all of the tissues in the body and its levels rise in response to cell damage. LDH levels help to diagnose lung disease, lymphoma, anemia, and liver disease. They also help determine how well chemotherapy is working .A higher-than-normal level may indicate:Blood flow deficiency (ischemia), Heart attack, Hemolytic anemia, Infectious mononucleosis, Liver disease (for example, hepatitis),Low blood pressure,Muscle injury, muscular dystrophy, New abnormal tissue formation usually cancer, Pancreatitis and Stroke.
BILIRUBIN (TOTAL, DIRECT, INDIRECT), SERUM-
Bilirubin is a yellowish pigment found in bile and is a breakdown product of normal heme catabolism. Bilirubin is excreted in bile and urine, and elevated levels may give yellow discoloration in jaundice.Elevated levels results from increased bilirubin production (eg, hemolysis and ineffective erythropoiesis), decreased bilirubin excretion (eg, obstruction and hepatitis), and abnormal bilirubin metabolism (eg, hereditary and neonatal jaundice). Conjugated (direct) bilirubin is elevated more than unconjugated (indirect) bilirubin in Viral hepatitis, Drug reactions, Alcoholic liver disease Conjugated (direct) bilirubin is also elevated more than unconjugated (indirect) bilirubin when there is some kind of blockage of the bile ducts like in Gallstones getting into the bile ducts, tumors & Scarring of the bile ducts. Increased unconjugated (indirect) bilirubin may be a result of Hemolytic or pernicious anemia, Transfusion reaction & a common metabolic condition termed Gilbert syndrome, due to low levels of the enzyme that attaches sugar molecules to bilirubin.

Total Bili-
Source: Wallach"s Interpretation of Diagnostic tests, 9th ed

Direct Bili -
Source: Tietz Text book of Clinical Chemistry & Molecular Diagnostics, 4th ed
TOTAL PROTEIN,ALBUMIN,GLOBULIN, SERUM-
Serum total protein,also known as total protein, is a biochemical test for measuring the total amount of protein in serum..Protein in the plasma is made up of albumin and globulin.

Higher-than-normal levels may be due to: Chronic inflammation or infection, including HIV and hepatitis B or C, Multiple myeloma, Waldenstrom's disease

Lower-than-normal levels may be due to: Agammaglobulinemia, Bleeding (hemorrhage), Burns, Glomerulonephritis, Liver disease, Malabsorption, Malnutrition, Nephrotic syndrome, Protein-losing enteropathy etc.Human serum albumin is the most abundant protein in human blood plasma. It is produced in the liver. Albumin constitutes about half of the blood serum protein. Low blood albumin levels (hypoalbuminemia) can be caused by:Liver disease like cirrhosis of the liver, nephrotic syndrome, protein-losing enteropathy, Burns, hemodilution, increased vascular permeability or decreased lymphatic clearance,malnutrition and wasting etc.
25 - HYDROXYVITAMIN D, SERUM-
Note: Our Vitamin D assays is standardized to be in alignment with the ID-LC/MS/MS 25(OH)vitamin D Reference Method Procedure (RMP), the reference procedure for the Vitamin D Standardization Program (VDSP). The VDSP, a collaboration of the National Institutes of Health Office of Dietary Supplements, National Institute of Technology and Standards, Centers for Disease Control and Ghent University, is an initiative to standardize 25(OH)vitamin D measurement across methods
TSH 3RD GENERATION ULTRA(TSH3 - UL), SERUM-
Below mentioned are the guidelines for Pregnancy related reference ranges for TSH.

Levels in Pregnancy	TSH (µIU/mL)
First Trimester	0.1 - 2.5
2nd Trimester	0.2 – 3.0
3rd Trimester	0.3 – 3.0

NOTE: TSH concentrations in apparently normal euthyroid subjects are known to be highly skewed, with a strong tailed distribution towards higher TSH values. This is well documented in the pediatric population including the infant age group.
GLUCOSE, FASTING, PLASMA-
ADA 2012 guidelines for adults as follows:
Pre-diabetics: 100 - 125 mg/dL
Diabetic: > or = 126 mg/dL

(Ref: Tietz 4th Edition & ADA 2012 Guidelines)
CORONARY RISK PROFILE (LIPID PROFILE), SERUM-
Serum cholesterol is a blood test that can provide valuable information for the risk of coronary artery disease This test can help determine your risk of the build up of plaques in your arteries that can lead to narrowed or blocked arteries throughout your body (atherosclerosis). High cholesterol levels usually don't cause any signs or symptoms, so a cholesterol test is an important tool. High cholesterol levels often are a significant risk factor for heart disease and important for diagnosis of hyperlipoproteinemia, atherosclerosis, hepatic and thyroid diseases.

Serum Triglyceride are a type of fat in the blood. When you eat, your body converts any calories it doesn't need into triglycerides, which are stored in fat cells. High triglyceride levels are associated with several factors, including being overweight, eating too many sweets or drinking too much alcohol, smoking, being sedentary, or having diabetes with elevated blood sugar levels. Analysis has proven useful in the diagnosis and treatment of patients with diabetes mellitus, nephrosis, liver obstruction, other diseases involving lipid metabolism, and various endocrine disorders. In conjunction with high density lipoprotein and total serum cholesterol, a triglyceride determination provides valuable information for the assessment of coronary heart disease risk.It is done in fasting state.

High-density lipoprotein (HDL) cholesterol. This is sometimes called the ""good"" cholesterol because it helps carry away LDL cholesterol, thus keeping arteries open and

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ACCESSION NO : **0002SL002302** AGE : 41 Years SEX : Male DATE OF BIRTH : 16/01/1978

DRAWN : 02/12/2019 09:12 RECEIVED : 02/12/2019 09:13 REPORTED : 02/12/2019 16:29

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Test Report Status **Final**	Results	Biological Reference Interval	Units

blood flowing more freely.HDL cholesterol is inversely related to the risk for cardiovascular disease. It increases following regular exercise, moderate alcohol consumption and with oral estrogen therapy. Decreased levels are associated with obesity, stress, cigarette smoking and diabetes mellitus.

SERUM LDL The small dense LDL test can be used to determine cardiovascular risk in individuals with metabolic syndrome or established/progressing coronary artery disease, individuals with triglyceride levels between 70 and 140 mg/dL, as well as individuals with a diet high in trans-fat or carbohydrates. Elevated sdLDL levels are associated with metabolic syndrome and an 'atherogenic lipoprotein profile', and are a strong, independent predictor of cardiovascular disease.
Elevated levels of LDL arise from multiple sources. A major factor is sedentary lifestyle with a diet high in saturated fat. Insulin-resistance and pre-diabetes have also been implicated, as has genetic predisposition. Measurement of sdLDL allows the clinician to get a more comprehensive picture of lipid risk factors and tailor treatment accordingly. Reducing LDL levels will reduce the risk of CVD and MI.

Non HDL Cholesterol - Adult treatment panel ATP III suggested the addition of Non-HDL Cholesterol as an indicator of all atherogenic lipoproteins (mainly LDL and VLDL). NICE guidelines recommend Non-HDL Cholesterol measurement before initiating lipid lowering therapy. It has also been shown to be a better marker of risk in both primary and secondary prevention studies.

Recommendations:
Results of Lipids should always be interpreted in conjunction with the patient's medical history, clinical presentation and other findings.

NON FASTING LIPID PROFILE includes Total Cholesterol, HDL Cholesterol and calculated non-HDL Cholesterol. It does not include triglycerides and may be best used in patients for whom fasting is difficult.
SERUM BLOOD UREA NITROGEN-
Causes of Increased levels
Pre renal
• High protein diet, Increased protein catabolism, GI haemorrhage, Cortisol, Dehydration, CHF Renal
• Renal Failure
Post Renal
• Malignancy, Nephrolithiasis, Prostatism

Causes of decreased levels
• Liver disease
• SIADH.
CREATININE, SERUM-
Higher than normal level may be due to:
• Blockage in the urinary tract
• Kidney problems, such as kidney damage or failure, infection, or reduced blood flow
• Loss of body fluid (dehydration)
• Muscle problems, such as breakdown of muscle fibers
• Problems during pregnancy, such as seizures (eclampsia)), or high blood pressure caused by pregnancy (preeclampsia)

Lower than normal level may be due to:
• Myasthenia Gravis
• Muscular dystrophy
URIC ACID, SERUM-
Causes of Increased levels
Dietary
• High Protein Intake.
• Prolonged Fasting,
• Rapid weight loss.
Gout
Lesch nyhan syndrome.
Type 2 DM.
Metabolic syndrome.

Causes of decreased levels
• Low Zinc Intake
• OCP's
• Multiple Sclerosis

Nutritional tips to manage increased Uric acid levels
• Drink plenty of fluids
• Limit animal proteins
• High Fibre foods
• Vit C Intake
• Antioxidant rich foods
ELECTROLYTES (NA/K/CL), SERUM-
Sodium levels are Increased in dehydration, cushing's syndrome, aldosteronism & decreased in Addison's disease, hypopituitarism,liver disease. Hypokalemia (low K) is common in vomiting, diarrhea, alcoholism, folic acid deficiency and primary aldosteronism. Hyperkalemia may be seen in end-stage renal failure, hemolysis, trauma, Addison's disease, metabolic acidosis, acute starvation, dehydration, and with rapid K infusion.Chloride is increased in dehydration, renal tubular acidosis (hyperchloremia metabolic acidosis), acute renal failure, metabolic acidosis associated with prolonged diarrhea and loss of sodium bicarbonate, diabetes insipidus, adrenocortical hyperfuction, salicylate intoxication and with excessive infusion of isotonic saline or extremely high dietary intake of salt.Chloride is decreased in overhydration, chronic respiratory acidosis,

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salt-losing nephritis, metabolic alkalosis, congestive heart failure, Addisonian crisis, certain types of metabolic acidosis, persistent gastric secretion and prolonged vomiting,
URINALYSIS-Routine urine analysis assists in screening and diagnosis of various metabolic, urological, kidney and liver disorders
Protein: Elevated proteins can be an early sign of kidney disease. Urinary protein excretion can also be temporarily elevated by strenuous exercise, orthostatic proteinuria, dehydration, urinary tract infections and acute illness with fever
Glucose: Uncontrolled diabetes mellitus can lead to presence of glucose in urine. Other causes include pregnancy, hormonal disturbances, liver disease and certain medications.
Ketones: Uncontrolled diabetes mellitus can lead to presence of ketones in urine. Ketones can also be seen in starvation, frequent vomiting, pregnancy and strenuous exercise.
Blood: Occult blood can occur in urine as intact erythrocytes or haemoglobin, which can occur in various urological, nephrological and bleeding disorders.
Leukocytes: An increase in leukocytes is an indication of inflammation in urinary tract or kidneys. Most common cause is bacterial urinary tract infection.
Nitrite: Many bacteria give positive results when their number is high. Nitrite concentration during infection increases with length of time the urine specimen is retained in bladder prior to collection.
pH: The kidneys play an important role in maintaining acid base balance of the body. Conditions of the body producing acidosis/ alkalosis or ingestion of certain type of food can affect the pH of urine.
Specific gravity: Specific gravity gives an indication of how concentrated the urine is. Increased specific gravity is seen in conditions like dehydration, glycosuria and proteinuria while decreased specific gravity is seen in excessive fluid intake, renal failure and diabetes insipidus.
Bilirubin: In certain liver diseases such as biliary obstruction or hepatitis, bilirubin gets excreted in urine.
Urobilinogen: Positive results are seen in liver diseases like hepatitis and cirrhosis and in cases of hemolytic anemia
RHEUMATOID FACTOR QUANTITATIVE, SERUM-
This test is used for diagnosis of Rheumatoid arthritis (RA) in individuals with a suggestive clinical presentation.

Rheumatoid factor is an IgM autoantibody directed against the Fc portion of Immunoglobulin G (IgG) and is found in more than two-thirds of adults with Rheumatoid arthritis. Detection of RF is one of the criteria of the American Rheumatology Association (ARA) for the diagnosis of Rheumatoid arthritis.

The presence of Rheumatoid factor is of prognostic significance also, since patients with high titres tend to have more severe and progressive disease.

RF is also found in a number of other conditions such as Systemic lupus erythematosus, Sjogren's syndrome, chronic liver disease, hepatitis B. It plays an important role in differential diagnosis between RA and other rheumatic diseases.

BIO CHEMISTRY

GLYCOSYLATED HEMOGLOBIN, EDTA WHOLE BLOOD

GLYCOSYLATED HEMOGLOBIN (HBA1C)	4.9	Non-diabetic: < 5.7 Pre-diabetics: 5.7 - 6.4 Diabetics: > or = 6.5 ADA Target: 7.0 Action suggested: > 8.0	%
METHOD : ION- EXCHANGE HPLC			
MEAN PLASMA GLUCOSE	93.9	< 116.0	mg/dL

Interpretation(s)
GLYCOSYLATED HEMOGLOBIN, EDTA WHOLE BLOOD-
Glycosylated hemoglobin (GHb) has been firmly established as an index of long-term blood glucose concentrations and as a measure of the risk for the development of complications in patients with diabetes mellitus. Formation of GHb is essentially irreversible, and the concentration in the blood depends on both the life span of the red blood cell (average 120 days) and the blood glucose concentration. Because the rate of formation of GHb is directly proportional to the concentration of glucose in the blood, the GHb concentration represents the integrated values for glucose over the preceding 6-8 weeks.
Any condition that alters the life span of the red blood cells has the potential to alter the GHb level. Samples from patients with hemolytic anemias will exhibit decreased glycated hemoglobin values due to the shortened life span of the red cells. This effect will depend upon the severity of the anemia. Samples from patients with polycythemia or post-splenectomy may exhibit increased glycated hemoglobin values due to a somewhat longer life span of the red cells.
Glycosylated hemoglobins results from patients with HbSS, HbCC, and HbSC and HbD must be interpreted with caution, given the pathological processes, including anemia, increased red cell turnover, transfusion requirements, that adversely impact HbA1c as a marker of long-term glycemic control. In these conditions, alternative forms of testing such as glycated serum protein (fructosamine) should be considered.
References
1. Tietz Textbook of Clinical Chemistry and Molecular Diagnostics, edited by Carl A Burtis, Edward R.Ashwood, David E Bruns, 4th Edition, Elsevier publication, 2006, 879-884.
2. Forsham PH. Diabetes Mellitus:A rational plan for management. Postgrad Med 1982, 71,139-154.
3. Mayer TK, Freedman ZR: Protein glycosylation in Diabetes Mellitus: A review of laboratory measurements and their clinical utility. Clin Chim Acta 1983, 127, 147-184.

DIAGNOSTIC REPORT

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SPECIALISED CHEMISTRY - HORMONE

* FREE THYROXINE (FT4), SERUM

FREE THYROXINE (FT4)	1.39	0.93 - 1.71	ng/dL

METHOD : COMPETITIVE ELECTROCHEMILUMINESCENCE IMMUNOASSAY

COMMENT:
PLEASE NOTE THE CHANGE IN REFERENCE RANGE AND METHODOLOGY.

Interpretation(s)
FREE THYROXINE (FT4), SERUM-
The guidlines for age related reference ranges for FT4.

New Born (1-4 days)	2.2 - 5.3 ng/dL
Children	0.8- 2.7 ng/dL
Pregnancy	
1st Trimester	0.7- 2.0 ng/dL
2nd & 3rd Trimester	0.5 - 1.6 ng/dL

Kindly note: Method specific reference ranges are appearing on the report under biological reference range.

****End Of Report****

TEST MARKED WITH '*' ARE OUTSIDE THE NABL ACCREDITED SCOPE OF THE LABORATORY.

Dr. A Dasgupta, MD, PhD
Mentor-Haematology Services

Dr. Kshama P, MD
Biochemist

DIAGNOSTIC REPORT

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CONDITIONS OF LABORATORY TESTING & REPORTING

1. It is presumed that the test sample belongs to the patient named or identified in the test requisition form.
2. All Tests are performed and reported as per the turnaround time stated in the SRL Directory of services (DOS).
3. SRL confirms that all tests have been performed or assayed with highest quality standards, clinical safety & technical integrity.
4. A requested test might not be performed if:
   a. Specimen received is insufficient or inappropriate specimen quality is unsatisfactory
   b. Incorrect specimen type
   c. Request for testing is withdrawn by the ordering doctor or patient
   d. There is a discrepancy between the label on the specimen container and the name on the test requisition form
5. The results of a laboratory test are dependent on the quality of the sample as well as the assay technology.
6. Result delays could be because of uncontrolled circumstances. e.g. assay run failure.
7. Tests parameters marked by asterisks are excluded from the "scope" of NABL accredited tests. (If laboratory is accredited).
8. Laboratory results should be correlated with clinical information to determine Final diagnosis.
9. Test results are not valid for Medico- legal purposes.
10. In case of queries or unexpected test results please call at SRL customer care (Toll free: 1800-222-000). Post proper investigation repeat analysis may be carried out.

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