AMPATH
Central Reference Laboratory,
Door No. 1-100/1/CCH Nallagandla
Serilingampally
Hyderabad – 500019
040 6719 9977,www.ampath.com

MC-2751

AMPATH
ACCURATE DIAGNOSTICS, AMERICAN STANDARDS.
In collaboration with
UPMC LIFE CHANGING MEDICINE

LABORATORY REPORT

NAME	: [redacted]	REFERRED BY	:	VISIT NO	: [redacted]
AGE	[redacted]		[redacted]	COLLECTED ON	[redacted]
GENDER	: [redacted]	**LAB MR#**	: [redacted]	RECEIVED ON	[redacted]
OP / IP / DG #	:			APPROVED ON	: [redacted]
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Test Name	Result	Biological Ref. Interval	Unit
Amfit Freedom Plus			
	HAEMATOLOGY		
Complete Blood Counts *(Whole Blood - EDTA)*			
(Automated Hematology Analyzer & Microscopy)			
Hemoglobin *photometric method*	17.0	13.0 - 17.0	g/dL
RBC Count *coulter principle*	**5.6 H**	4.5 - 5.5	10^6/µL
Hematocrit	**53.1 H**	36 - 46	%
MCV(Mean Corpuscular Volume) *Derived from RBC Histogram*	94.4	83 - 101	fL
MCH(Mean Corpuscular Hemoglobin) *Calculated*	30.3	27 - 32	pg
MCHC(Mean Corpuscular Hemoglobin Concentration) *Calculated*	32.1	31.5 - 34.5	g/dL
RDW *Derived from RBC Histogram*	**15.2 H**	11.6 - 14	%
Total Leukocyte Count *coulter principle*	5.8	4.0 - 10.0	10³/µl
Differential count % (VCSn Technology & light microscopy)			
Neutrophils	67.0	40-80	%
Lymphocytes	31.0	20-40	%
Monocytes	8.0	2-10	%
Eosinophils	4.0	1-6	%
Basophils	0.0	0-1	%
Differential Counts, Absolute(calculated)			
Absolute Neutrophil Count *VCSn/Calculated*	3.89	2.0-7.0	10³/µl
Absolute Lymphocyte Count *VCSn/Calculated*	1.80	1.0-3.0	10³/µl
Absolute Monocyte Count	0.46	0.2 - 1.0	10³/µl
Absolute Eosinophil Count (AEC) *VCSn/Calculated*	0.23	0.02-0.5	10³/µl
Absolute Basophil Count	0.10	0.02 - 0.1	10³/µl
Platelet Count *coulter principle*	150	150 - 410	10³/µl
MPV	9.3	7.5 - 11.5	fL

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Amfit Freedom Plus			
	BIOCHEMISTRY		
Liver Function Tests (LFT) *(Serum)*			
Bilirubin Total *Diazo method*	1.03	<1.1	mg/dL
Bilirubin Conjugated *Diazo method*	**0.32 H**	<=0.2	mg/dL
Bilirubin Unconjugated, Indirect *Calculation*	0.71	<1.0	mg/dL
Alanine aminotransferase - (ALT / SGPT) *Kinetic IFCC*	**42 H**	< 41.0	U/L
Aspartate Aminotransferase (AST/SGOT) *IFCC kinetic*	27	< 40	U/L
Alkaline Phosphatase - ALP *IFCC kinetic*	65.0	<129	U/L
Protein Total, Serum *Biuret Method*	7.6	6.4-8.3	g/dL
Albumin - Serum *Bromocresol green*	4.8	3.5 - 5.2	g/dL
Globulin *Calculation*	2.8	2.3-3.5	g/dL
A/G (Albumin/Globulin) Ratio *Calculation*	1.7	0.8-2.0	

Interpretation:

1. In an asymptomatic patient, Non alcoholic fatty liver disease (NAFLD) is the most common cause of increased AST, ALT levels. NAFLD is considered as hepatic manifestation of metabolic syndrome.
2. In most type of liver disease, ALT activity is higher than that of AST; exception may be seen in Alcoholic Hepatitis, Hepatic Cirrhosis, and Liver neoplasia. In a patient with Chronic liver disease, AST:ALT ratio>1 is highly suggestive of advanced liver fibrosis.
3. In known cases of Chronic Liver disease due to Viral Hepatitis B & C, Alcoholic liver disease or NAFLD, Enhanced liver fibrosis (ELF) test may be used to evaluate liver fibrosis.
4. In a patient with Chronic Liver disease, AFP and Des-gamma carboxyprothrombin (DCP)/PIVKA II can be used to assess risk for development of Hepatocellular Carcinoma.

Gamma Glutamyl Transferase (GGT) *(Serum)*			
Gamma Glutamyl Transferase (GGT) *Enzymatic colorimetric assay*	**81.0 H**	< 71	U/L

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Amfit Freedom Plus			
CLINICAL PATHOLOGY			
Urine Examination - Routine & Microscopy (CUE) *(Urine)*			
PHYSICAL EXAMINATION:			
Volume	20.00		mL
Colour	Pale Yellow	Pale	
Appearance	Clear	Clear	
CHEMICAL EXAMINATION:			
pH *Dip stick*	5.00	4.8 - 7.4	
Specific Gravity *Dip Stick(Bromothymol blue)*	**1.025 H**	1.010 - 1.022	
Protein *Dip Stick/ Sulfosalicylic acid*	Absent	Negative	
Glucose *Dip Stick /Benedicts test*	**Positive (1+)**	Negative	
Ketones *Dip stick/Sodium nitroprusside reaction*	Absent	Negative	
Urobilinogen *Dip Stick / Ehrlich reaction*	Normal	Normal	
Leucocyte Esterase *Dip Stick*	Negative	Negative	
Nitrite *Dip Stick / (Griess test)*	Negative	Negative	
Bilirubin *Dipstick/diazo*	Negative	Negative	
Blood *Dip Stick (Peroxidase)*	Not Detected	Negative	
Microscopic Examination			
Pus Cells	4 - 5	0 - 5	/HPF
Epithelial Cells	1 - 2	< 5	/HPF
RBCs	Absent	0 - 5	/HPF
Casts	Absent	Absent	/LPF
Crystals	Absent	Absent	/HPF

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	BIOCHEMISTRY		
Calcium - Serum *(Serum)*			
Calcium - Serum *NM-BAPTA*	9.20	8.6 - 10.0	mg/dL
Creatinine *(Serum)*			
Creatinine *Modified Jaffe Kinetic*	1.00	0.70 - 1.20	mg/dL
Urea *(Serum)*			
Urea *Kinetic, Urease*	28.8	19 - 49	mg/dL
Uric acid *(Serum)*			
Uric acid *Uricase*	3.8	3.4-7	mg/dL
Electrolytes (Na, K, Cl) - Serum *(Serum)*			
Sodium - Serum *ISE Indirect*	136.0	136 - 145	mmol/L
Potassium *ISE Indirect*	**3.30 L**	3.5-5.1	mmol/L
Chloride - Serum *ISE Indirect*	**94.4 L**	98-107	mmol/L
Protein Total, Serum *(Serum)*			
Protein Total, Serum *Biuret Method*	7.6	6.4-8.3	g/dL
Blood Urea Nitrogen, BUN - Serum *(Serum)*			
Blood Urea Nitrogen (BUN) *Calculation*	13.46	8.8-20.5	mg/dL
Lipid profile *(Serum)*			
Cholesterol Total - Serum *Enzymatic colorimetric*	**231.0 H**	No risk: <200 Moderate risk: 200-239 High risk: >240	mg/dL
Triglycerides *Enzymatic colorimetry*	**229.6 H**	Normal: <150 Borderline-high: 150–199 High risk 200–499 Very high risk >500	mg/dL

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Amfit Freedom Plus			
Cholesterol - HDL (Direct) *Enzymatic colorimetric*	54.0	High Risk: <40 No Risk: >60	mg/dL
LDL Chol, Calculated	**131.08 H**	<100	mg/dL
VLDL (Very Low Density Lipoprotein) *Calculation*	**45.9 H**	<30	mg/dL
Cho/HDL Ratio *Enzymatic colorimetric & Calculation*	**4.28 H**	Normal:<4.0 Low risk:4.0-6.0 High risk:>6.0	
LDL/HDL Ratio	2.43	Desirable/Low Risk: 0.5 - 3.0 Borderline/Moderate: 3.1 - 6.0 High Risk: >6.0	
Vitamin B12 *(Serum)*			
Vitamin B12 *ECLIA*	514.3	197-771	pg/mL

Interpretation:

Vitamin B12 also referred to as cobalamin is a water soluble vitamin. The uptake in the gastro intestinal track depends on intrinsic factor, which is synthesised by gastric parietal cells

Deficiency state:

>Lack of intrinsic factor due to autoimmune atrophic gastritis
>Mal-absorption due to gastrostomy
>Inflammatory bowel disease
>Dietary deficiency (strict vegans)
>Vit B12 deficiency results in megaloblastic anaemia, peripheral neuropathy, dementia and depression

Increased levels:

>VIT B12 supplement intake
>Polycythaemia Vera.

Vitamin D, 25-Hydroxy *(Serum)*			
Vitamin D, 25-Hydroxy *ECLIA*	**21.6 L**	Deficient: <=20 Insufficiency: 20-29 Desirable: >=30-100 Toxicity: >100	ng/ml

Interpretation:

Vitamin D is a fat soluble vitamin produced in the skin by exposure to sun light. Deficiency in children causes rickets and in adults leads to osteomalacia

Decreased levels:

>Impaired cutaneous production (lack of sunlight exposure)
>Dietary absence
>Malabsorption
>Increased metabolism due to drugs like barbiturates, phenytoin.
>Liver disease
>Renal failure

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>VIT D receptor mutation			
Increased levels:			
>Vitamin D intoxication due to increased vit D supplements intake			
HbA1c - Glycated Hemoglobin *(Whole Blood - EDTA)*			
Glycated Hemoglobin, HbA1c *TINIA*	**11.30 H**	Non diabetic range: 4.8-5.6% Prediabetic range: 5.7-6.4% Diabetes range: >=6.5%	%
Estimated Average Glucose	277.6		mg/dL
Interpretation:			
Note: HbA1c results may vary in situations of abnormal red cell turnover, such as pregnancy, recent blood loss or transfusion, or some anemias. In such cases only blood glucose criteria should be used to diagnose diabetes (ADA, 2014). Please correlate clinically.			
Glucose - Fasting *(Fluoride Plasma - F)*			
Glucose - Fasting *Hexokinase*	**318.0 H**	Normal : 74-100 Pre-diabetic : 100-125 Diabetic: >=126	mg/dL
T3 - Total (Tri Iodothyronine) *(Serum)*			
T3 - Total (Tri Iodothyronine) *ECLIA*	106.9	80.00 - 200.00	ng/dL
T4 - Total (Thyroxine - Total) *(Serum)*			
T4 - Total (Thyroxine - Total) *ECLIA*	8.10	5.1-14.1	µg/dL
Interpretation:			
Note : 1. Total T3 & T4 levels measure the hormone which is in the bound form and is not available to most tissues. 2. Severe systemic illness affects the thyroid binding proteins and can falsely alter Total T 4 levels in the absence of a primary thyroid disease. Hence Free T3 & T4 levels are recommended for accurate assessment of thyroid dysfunction.			
TSH, Thyroid Stimulating Hormone *(Serum)*			
TSH, Thyroid Stimulating Hormone *ECLIA*	2.530	0.27 - 4.21	µIU/mL
Interpretation:			
The following potential sources of variation should be considered while interpreting thyroid hormone results: 1. Circadian variation in TSH secretion: peak levels are seen between 2-4 am. Minimum levels seen between 6-10 am. This variation may be as			

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much as 50% thus, influence of sampling time needs to be considered for clinical interpretation.
2. Total T3 and T4 levels are seen to have physiological rise during pregnancy and in patients on steroid treatment
3. Circulating forms of T3 and T4 are mostly reversibly bound with Thyroxine binding globulins (TBG), and to a lesser extent with albumin and Thyroid binding Pre-Albumin. Thus the conditions in which TBG and protein levels alter such as chronic liver disorders, pregnancy, excess of estrogens, androgens, anabolic steroids and glucocorticoids may cause misleading total T3, total T4 and TSH interpretations.
4. T4 may be normal in the presence of hyperthyroidism under the following conditions : T3 thyrotoxicosis, Hypoproteinemia related reduced binding, in presence of drugs (eg Phenytoin, Salicylates etc)
5. Neonates and infants have higher levels of T4 due to increased concentration of TBG
6. TSH levels may be normal in central hypothyroidism, recent rapid correction of hypothyroidism or hyperthyroidism, pregnancy, phenytoin therapy etc.
7. TSH values of <0.03 uIU/mL must be clinically correlated to evaluate the presence of a rare TSH variant in certain individuals which is undetected by conventional methods.
8. Presence of Autoimmune disorders may lead to spurious results of thyroid hormones
9. Various drugs can lead to interference in test results
It is recommended to evaluate unbound fractions, that is free T3 (fT3) and free T4 (fT4) for clinic-pathologic correlation, as these are the metabolically active forms.

Iron Binding Capacity - Total (TIBC) *(Serum)*

Iron *FerroZine Colorimetric Assay*	**178.8 H**	59-158	µg/dL
Unsaturated Iron Binding Capacity (UIBC) *Direct determination with FerroZine*	188.1	125 - 345	µg/dL
Iron Binding Capacity - Total (TIBC) *Calculation*	366.9	228-428	µg/dL
Transferrin Saturation Index (TSI) *Calculation*	**48.7 H**	16-45	

[redacted]
Consultant- Biochemist
MBBS/MD (Pathology)

Disclaimer:
1. All results released pertain to the specimen as received by the lab for testing and under the assumption that the patient indicated or identified on the bill/test requisition form is the owner of the specimen.
2. Clinical details and consent forms, especially in Genetic testing, histopathology, as well as wherever applicable, are mandatory to be accompanied with the test requisition form. The non-availability of such information may lead to delay in

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reporting as well as misinterpretation of test results. The lab will not be responsible for any such delays or misinterpretations thereof.
3. Test results are dependent on the quality of the sample received by the lab. In case the samples are preprocessed elsewhere (e.g., paraffin blocks), results may be compromised.
4. Tests are performed as per the schedule given in the test listing and in any unforeseen circumstances, report delivery may be affected.
5. Test results may show inter-laboratory as well as intra-laboratory variations as per the acceptable norms.
6. Genetic reports as well as reports of other tests should be correlated with clinical details and other available test reports by a qualified medical practitioner. Genetic counselling is advised in genetic test reports by a qualified genetic counsellor, medical practitioner or both.
7. Samples will be discarded post processing after a specified period as per the laboratory's retention policy. Kindly get in touch with the lab for more information.
8. If accidental damage, loss, or destruction of the specimen is not attributable to any direct or negligent act or omission on the part of Ampath Labs or its employees, Ampath shall in no event be liable. Ampath lab's liability for a lack of services, or other mistakes and omissions, shall be restricted to the amount of the patient's payment for the pertinent laboratory services.

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