



Laboratory Investigation Report

Name	: Ms. AMAR BASSAM HAWANA	Ref No.	: 43763
DOB	: 02/01/1991	Sample No.	: 2502541654
Age / Gender	: 34 Y / Female	Collected	: 21/02/2025 08:50
Referred by	: CITICARE MEDICAL CENTER	Registered	: 21/02/2025 15:44
Centre	: CITICARE MEDICAL CENTER	Reported	: 21/02/2025 17:22

BIOCHEMISTRY

Test	Result	Flag	Unit	Reference Range	Methodology
GLUCOSE (FASTING)	86		mg/dL	< 100 Please note change. Source: The American Diabetes Association (ADA)	Hexokinase

Sample Type : Fluoride Plasma

End of Report



Dr. Adley Mark Fernandes
M.D (Pathology)
Pathologist

Vyoma V. Shah
Dr. Vyoma V Shah
M.D (Pathology)
Clinical Pathologist

Haleem

HALEEM HAKKIM
Laboratory Technician

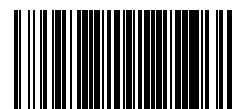
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HEMATOLOGY

Test	Result	Flag	Unit	Reference Range	Methodology
COMPLETE BLOOD COUNT (CBC)					
HEMOGLOBIN	13.0		g/dL	12 - 15.5	Photometric
RBC COUNT	4.7		10 ⁶ /μL	3.9 - 5	Electrical Impedance
HEMATOCRIT	37.4		%	35 - 45	Calculation
MCV	79.5	L	fL	82 - 98	Calculation
MCH	27.6		pg	27 - 32	Calculation
MCHC	34.7		g/dL	32 - 37	Calculation
RDW	14.7		%	11.9 - 15.5	Calculation
RDW-SD	41.1		fL		Calculation
MPV	8.8		fL	7.6 - 10.8	Calculation
PLATELET COUNT	303		10 ³ /uL	150 - 450	Electrical Impedance
PCT	0.3		%	0.01 - 9.99	Calculation
PDW	17.1		Not Applicable	0.1 - 99.9	Calculation
NUCLEATED RBC (NRBC) [^]	0.1		/100 WBC		VCS 360 Technology
ABSOLUTE NRBC COUNT [^]	0.0		10 ³ /uL		Calculation
EARLY GRANULOCYTE COUNT (EGC) [^]	0.0		%		VCS 360 Technology
ABSOLUTE EGC [^]	0.0		10 ³ /uL		Calculation
WBC COUNT	5.8		10 ³ /μL	4 - 11	Electrical Impedance
DIFFERENTIAL COUNT (DC)					
NEUTROPHILS	54		%	40 - 75	VCS 360 Technology
LYMPHOCYTES	38		%	30 - 60	VCS 360 Technology
EOSINOPHILS	3		%	0 - 6	VCS 360 Technology
MONOCYTES	5		%	1 - 6	VCS 360 Technology
BASOPHILS	0		%	0 - 1	VCS 360 Technology
ABSOLUTE COUNT					
ABSOLUTE NEUTROPHIL COUNT	3.1		10 ³ /uL	1.6 - 8.25	Calculation
ABSOLUTE LYMPHOCYTE COUNT	2.2		10 ³ /uL	1.2 - 6.6	Calculation
ABSOLUTE MONOCYTE COUNT	0.4		10 ³ /uL	0.04 - 0.66	Calculation
ABSOLUTE EOSINOPHIL COUNT	0.2		10 ³ /uL	0 - 0.66	Calculation
ABSOLUTE BASOPHIL COUNT	0.0		10 ³ /uL	0 - 0.11	Calculation

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Jillian Joy Garcia
Laboratory Technologist

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HEMATOLOGY

Test	Result	Flag	Unit	Reference Range	Methodology
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COMPLETE BLOOD COUNT (CBC)

INTERPRETATION NOTES :

Please note update on CBC report format, reference ranges and method(Beckman Coulter).

Sample Type : EDTA Whole Blood

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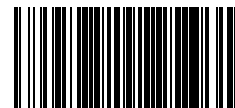
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IMMUNOLOGY

Test	Result	Flag	Unit	Reference Range	Methodology
FERRITIN	14		ng/mL	6 - 175 Please note change. Source: Mayo Clinic Laboratories.	ECLIA

INTERPRETATION NOTES :

Interpretation:

Increased level is seen in haemochromatosis, porphyria, rheumatoid arthritis, liver disease, hyperthyroidism, adult stills disease, type 2 diabetes, leukemia, Hodgkins lymphoma, iron poisoning, in inflammation, frequent blood transfusion, alcohol abuse

Decreased level is seen in any Iron deficiency conditions such as heavy menstrual bleeding, pregnancy, not enough iron in the diet, or bleeding inside the intestinal tract (from ulcers, colon polyps, colon cancer, hemorrhoids, or other conditions).

VITAMIN B12	525		pg/mL	197 - 771	ECLIA
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INTERPRETATION NOTES :

Increase B12 level is seen in Liver disease (such as cirrhosis or hepatitis), Myeloproliferative disorders (for example, polycythemia vera and chronic myelogenous leukemia).

Decreased B12 level is seen in diseases that cause malabsorption (for example, celiac disease and Crohn disease), Lack of intrinsic factor, a protein that helps the intestine absorb vitamin B12, hyperthyroidism, pregnancy.

VITAMIN D, 25-OH (TOTAL)	21		ng/mL	Deficiency: <20 Insufficiency: 20 - <30 Sufficiency: 30 - 80 Toxicity: >80 Please note change. Source: Roche IFU.	ECLIA
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INTERPRETATION NOTES :

Vit D (25 – OH) is the sum of Vit D2 (25 – OH) and Vit D3 (25 – OH). In normal persons not taking external supplements - Vit D3 comprises approximately 90 % of the total.

25 hydroxy (25–OH) vitamin D3 or calcidiol is the storage form of vitamin D3. Deficiency is associated with osteoporosis, multiple sclerosis, and rheumatoid arthritis, and mood disorders. Both Vitamin D2 and Vitamin D3 are converted to 25–OH vitamin D3 in the liver. 25 hydroxy vitamin D3 circulates to the kidney where it is converted to 1, 25 hydroxy vitamins D3 or calcitriol, the functional form of the vitamin.

Calcitriol is vital to calcium regulation and low serum calcium causes release of parathormone which converts 25–OH vitamin D3 to 1, 25 –OH vitamin D3 which then triggers osteolysis releasing calcium into the bloodstream.

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Gyoma V. Shah
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ENDOCRINOLOGY

Test	Result	Flag	Unit	Reference Range	Methodology
ESTRADIOL (E2)	30.1		pg/mL	Refer to Interpretation Table below.	ECLIA

INTERPRETATION NOTES :

Refer to Interpretation Table for Female Reference Range:

FEMALE	REFERENCE RANGE (pg/mL)
Tanner Stage I (>14 days and prepubertal) (Mean Age: 7.1 years)	Undetectable - 20
Tanner Stage II (Mean Age: 10.5 years)	Undetectable - 24
Tanner Stage III (Mean Age: 11.6 years)	Undetectable - 60
Tanner Stage IV (Mean Age: 12.3 years)	15 - 85
Tanner Stage V (Mean Age: 14.5 years)	15 - 350
Follicular Phase	20.5 - 233
Mid Cycle	60.4 - 602
Luteal Phase	51.1 - 222
First Trimester	154 - 3243
Second Trimester	1561 - 21280
Third Trimester	8525 - > 30000
Post Menopause	< 5
Please note update in reference range. Source: Roche; Mayo Clinic Laboratories for Tanner Stage	

Refer to Interpretation Table for Male Reference Range:

1 to 14 days: Estradiol levels in newborns are very elevated at birth but will fall to prepubertal levels within a few days.

TANNER STAGE MALE	REFERENCE RANGE (pg/mL)
Stage I (>14 days and prepubertal)(Mean Age: 7.1 years)	Undetectable - 13
Stage II (Mean Age: 12.1 years)	Undetectable - 16
Stage III (Mean Age: 13.6 years)	Undetectable - 26
Stage IV (Mean Age: 15.1 years)	Undetectable - 38
Stage V (Mean Age: 18 years)	10 - 40

Increased level is seen in early puberty, tumors in the ovaries or testes, gynecomastia, hyperthyroidism, cirrhosis of liver.

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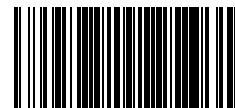
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ENDOCRINOLOGY

Test **Result** **Flag** **Unit** **Reference Range** **Methodology**

Decreased level is seen in menopause, Turner syndrome, ovarian failure, polycystic ovarian syndrome (PCOS), depleted estrogen production, which can be caused by low body fat, hypopituitarism, hypogonadism.

FOLLICLE STIMULATING HORMONE (FSH)	7.8		mIU/mL	Follicular phase: 2.5 - 10.2 Midcycle Peak: 3.4 - 33.4 Luteal Phase: 1.5 - 9.1 Postmenopausal: 23 - 116.3 Pregnant: < 0.3	ECLIA
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INTERPRETATION NOTES :

Increased level of FSH and LH are found in hypogonadism, anorchia, gonadal failure, complete testicular feminization syndrome, menopause, Klinefelter syndrome, alcoholism, and castration.
Decreased level is seen in pituitary or hypothalamic failure

LUTEINISING HORMONE (LH)	7.4		IU/L	Follicular Phase: 1.9 - 12.5 Mid Cycle Peak : 8.7 - 76.3 Luteal phase : 0.5 - 16.9 Post Menopausal : 15.9 - 54.0 Pregnant: < 0.1 - 1.5 Contraceptives: 0.7 - 5.6	ECLIA
PROLACTIN	870		mIU/L	Refer to Interpretation.	ECLIA

INTERPRETATION NOTES :

FEMALE REFERENCE RANGE (Please note change):

Stages	Reference Range (mIU/L)	
Tanner Stage I:	76.596 - 255.319	Source: Quest Diagnostics
Tanner Stage II-III:	55.319 - 382.979	Source: Quest Diagnostics
Tanner Stage IV-V:	68.085 - 425.532	Source: Quest Diagnostics
Non Pregnant:	102-496	Source: Roche Cobas Elecsys IFU
Pregnant:	212.766 - 4446.808	Source: Quest Diagnostics
Postmenopausal:	42.553 - 425.532	Source: Quest Diagnostics

High prolactin level is seen in pituitary gland tumour (prolactinoma), diseases of the hypothalamus, pregnancy, PCOS, liver disease (cirrhosis), kidney disease, anorexia nervosa, hypothyroidism. Drugs that can cause an elevated prolactin include estrogen, tricyclic antidepressants, risperidone, opiates, amphetamines.

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Test	Result	Flag	Unit	Reference Range	Methodology
Levels of prolactin that are below normal are not usually treated but may be indicative of a general decrease in pituitary hormones caused by a pituitary disorder such as hypopituitarism. drugs such as dopamine, levodopa and ergot alkaloid derivatives decrease prolactin level.					
THYROID STIMULATING HORMONE (TSH)	2.58		uIU/mL	0.27 - 4.2	ECLIA

Reference Range for
Pregnant:
First Trimester: 0.24 – 2.99
Second Trimester:
0.46 – 2.95
Third Trimester: 0.43 – 2.78

Sample Type : Serum

End of Report

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