# LABORATORY REPORT

Redcliffe labs

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|---|---|---|---|
| Patient NAME | : **Dummy** | | |
| DOB/Age/Gender | : | Report STATUS | : Final Report |
| Patient ID / UHID | : | Barcode NO | : |
| Referred BY | : | Sample Type | : |
| Sample Collected | : | Report Date | : |

## Fever Package- Essential

### Complete Blood Count (CBC)

| Test Description | Value(s) | Unit(s) | Reference Range |
|---|---|---|---|
| **RBC Parameters** | | | |
| Hemoglobin<br>*colorimetric* | 13.1 | g/dL | 12.0 - 15.0 |
| RBC Count<br>*Electrical impedance* | **5** | 10^6/µl | 3.8 - 4.8 |
| PCV<br>*Calculated* | 39.7 | % | 36 - 46 |
| MCV<br>*Calculated* | **79.4** | fl | 83 - 101 |
| MCH<br>*Calculated* | **26.1** | pg | 27 - 32 |
| MCHC<br>*Calculated* | 32.9 | g/dL | 31.5 - 34.5 |
| RDW (CV) *<br>*Calculated* | 13.1 | % | 11.6 - 14.0 |
| RDW-SD *<br>*Calculated* | 37.9 | fl | 35.1 - 43.9 |
| **WBC Parameters** | | | |
| TLC<br>*Electrical impedance and microscopy* | 9.59 | 10^3/µl | 4 - 10 |
| **Differential Leucocyte Count** | | | |
| Neutrophils | 74.7 | % | 40-80 |
| Lymphocytes | **18.1** | % | 20-40 |
| Monocytes | 5.2 | % | 2-10 |
| Eosinophils | 1.5 | % | 1-6 |
| Basophils | 0.5 | % | <2 |
| **Absolute Leukocyte Counts**<br>***Calculated*** | | | |
| Neutrophils. | **7.16** | 10^3/µl | 2 - 7 |
| Lymphocytes. | 1.74 | 10^3/µl | 1 - 3 |
| Monocytes. | 0.5 | 10^3/µl | 0.2 - 1.0 |
| Eosinophils. | 0.14 | 10^3/µl | 0.02 - 0.5 |
| Basophils. | 0.05 | 10^3/µl | 0.02 - 0.5 |
| **Platelet Parameters** | | | |
| Platelet Count<br>*Electrical impedance and microscopy* | 261 | 10^3/µl | 150 - 410 |
| Mean Platelet Volume (MPV) *<br>*Calculated* | **7.8** | fL | 9.3 - 12.1 |
| PCT *<br>*Calculated* | 0.2 | % | 0.17 - 0.32 |

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| PDW *<br>*Calculated* | 12.1 | fL | 8.3 - 25.0 |
| P-LCR *<br>*Calculated* | **17.7** | % | 18 - 50 |
| P-LCC *<br>*Calculated* | 46 | 10^9/L | 44 - 140 |
| Mentzer Index *<br>*Calculated* | 15.88 | % | > 13 |

**Interpretation:**
CBC provides information about red cells, white cells and platelets. Results are useful in the diagnosis of anemia, infections, leukemias, clotting disorders and many other medical conditions.

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**Erythrocyte Sedimentation Rate (ESR)**

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|---|---|---|---|
| ESR - Erythrocyte Sedimentation Rate<br>*MODIFIED WESTERGREN* | **46** | mm/hr | 0 - 14 |

**Interpretation:**
ESR is also known as Erythrocyte Sedimentation Rate. An ESR test is used to assess inflammation in the body. Many conditions can cause an abnormal ESR, so an ESR test is typically used with other tests to diagnose and monitor different diseases. An elevated ESR may occur in inflammatory conditions including infection, rheumatoid arthritis ,systemic vasculitis, anemia, multiple myeloma , etc. Low levels are typically seen in congestive heart failure, polycythemia ,sickle cell anemia, hypo fibrinogenemia , etc.

**Reference**- Dacie and lewis practical hematology

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**Malarial Parasite (MP) Smear**

| | | | |
|---|---|---|---|
| MP(PBF FOR MP)<br>*MICROSCOPY* | Not Seen | | NOT SEEN |

**Interpretation:**

1. Malaria is a serious parasitic diseases characterized by fever, chills, and anemia and is caused by a parasite that is transmitted human to human by the bite of infected female Anopheles mosquitoes.
2. Malarial Parasite test is performed on the blood sample to find out the level of Malaria Parasite in the blood.
3. It is conducted to conclude on Malaria and also during the treatment and after the treatment of Malaria.
4. Most people will have symptoms within 14 days of being bitten by an infected mosquito. But symptoms can show up as soon as seven days afterward or can take as long as a year to appear.
5. Clinical decision should not be based on the results of this test, but should be made by the physician after all clinical and laboratory findings have been evaluated.

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| Test Description | Value(s) | Unit(s) | Reference Range |
|---|---|---|---|
| **Malaria Antigen, Rapid Card** | | | |
| Plasmodium Vivax | Negative | | Negative |
| Plasmodium falciparum | Negative | | Negative |

**Interpretation:**
Immunochromatographic Assay done for *Plasmodium falciparum* using Histidine-Rich Protein-II (HRP-II) and *Plasmodium* species (*Plasmodium falciparum, P. vivax, P. ovale and P. malariae*) using lactate dehydrogenase (pLDH) in human whole blood.

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| **SGOT / AST** | | | |
| SGOT/AST<br>*IFCC with P5P* | 32.3 | U/L | 0 - 35 |
| **Interpretation:**<br>Serum AST is used for differential diagnosis of diseases of hepatobiliary system and pancreas. Increased values are seen in liver diseases like acute viral hepatitis, cirrhosis, biliary obstruction, primary or metastatic cancer, granuloma, hepatic ischaemia. | | | |
| **SGPT / ALT** | | | |
| SGPT/ALT<br>*IFCC with P5P* | **42.2** | U/L | 0 - 35 |
| **Interpretation:**<br>Serum ALT is used for differential diagnosis of diseases of hepatobiliary system and pancreas. Increased in alcohalic hepatitis, cirrhosis, hepatocellular carcinoma, chronic hepatitis. Decreased in genito-urinary tract infection, malignancy, pyridoxal phosphate deficiency states (malnutrition, pregnancy, alcoholic liver disease). | | | |

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**WIDAL By Slide Agglutination**

| | | | |
|---|---|---|---|
| Salmonella typhi O (TO) | < 1:80 | Titre | < 1:80 |
| Salmonella typhi H (TH) | < 1:80 | Titre | < 1:160 |
| Salmonella paratyphi A(H) | < 1:80 | Titre | < 1:80 |
| Salmonella Paratyphi B(H) | < 1:80 | Titre | < 1:80 |

**Interpretation:**

**METHOD-**(Slide Agglutination)

1.Titres >1:80 of “O” antigen & >1:160 of “H” antigen for Salmonella typhi and titres >1:80 of “H” antigen for Salmonella paratyphi A & B are reactive.
2. Rising titres in paired samples taken 7-10 days apart are more significant than a single test.
3. Reactive results indicates ongoing or recent infection by Salmonella spp. and the diagnosis should be confirmed by gold standard test such as Blood culture.
4. The reactivity will vary with stage of the disease with appearance in 1st week to increase in titres till end of 4th week post which it starts decreasing.
5. In TAB vaccinated patients, high titres of H antibody of ≥1:160 to each of Salmonellae is observed. They tend to persist for many months and even years while O antibody shows lower titres and disappears within 6 months.
6. Antibiotic treatment during 1st week before the appearance of antibodies tend to supress the immune response in the form of no or decreasing antibody levels.
7. False positive results/anamnestic response may be seen in patients with past enteric infection and during unrelated fevers like Malaria, Influenzae etc. in the form of transient rise in H antibody in Widal test.
8. False negative results may be due to processing of sample collected early in the course of disease (1st week) and immunosuppression.
9. Test conducted on serum.

**Uses**
To diagnose infection due to Salmonella spp. (Enteric fever).
To monitor the progression of disease.
To assess the response to therapy (decreasing titres) in patients being treated for Enteric fever

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## Urine Routine and Microscopic Examination

| Test Description | Value(s) | Unit(s) | Reference Range |
|---|---|---|---|
| **Physical Examination *** | | | |
| Volume * | 15 | ml | - |
| Colour * | Yellow | - | Pale yellow |
| Transparency * | Clear | - | Clear |
| Deposit * | Absent | - | Absent |
| **Chemical Examination *** | | | |
| Reaction (pH)<br>*Double Indicator* | 6.0 | - | 4.5 - 8.0 |
| Specific Gravity<br>*Ion Exchange* | 1.015 | - | 1.010 - 1.030 |
| Urine Glucose (sugar)<br>*Oxidase / Peroxidase* | **Positive(++)** | - | Negative |
| Urine Protein (Albumin)<br>*Acid / Base Colour Excahnge* | **Positive(+)** | - | Negative |
| Urine Ketones (Acetone)<br>*Legals Test* | Negative | - | Negative |
| Blood<br>*Peroxidase Hemoglobin* | Negative | - | Negative |
| Leucocyte esterase<br>*Enzymatic Reaction* | Negative | - | Negative |
| Bilirubin Urine<br>*Coupling Reaction* | Negative | - | Negative |
| Nitrite<br>*Griless Test* | Negative | - | Negative |
| Urobilinogen<br>*Ehrlichs Test* | Normal | - | Normal |
| **Microscopic Examination *** | | | |
| Pus Cells (WBCs) * | 1-2 | /hpf | 0 - 5 |
| Epithelial Cells * | 1-2 | /hpf | 0 - 4 |
| Red blood Cells * | Absent | /hpf | Absent |
| Crystals * | Absent | - | Absent |
| Cast * | Absent | - | Absent |
| Yeast Cells * | Absent | - | Absent |
| Amorphous deposits * | Absent | - | Absent |
| Bacteria * | Absent | - | Absent |
| Protozoa * | Absent | - | Absent |

**Interpretation:**

**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

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**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 haemolytic anaemia.

*** End Of Report ***

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2. It is to be presumed that the tests performed pertain to the specimen/sample attributed to the Customer's name or identification. It is presumed that the verification particulars have been cleared out by the customer or his/her representation at the point of generation of said specimen / sample. It is hereby clarified that the reports furnished are restricted solely to the given specimen only.

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