# LABORATORY REPORT

Redcliffe labs

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|---|---|---|---|
| Patient NAME | : **Mr DUMMY** | | |
| DOB/Age/Gender | : 25 Y/Male | Report STATUS | : Final Report |
| Patient ID / UHID | : 16038190/OF16038190 | Barcode NO | : RL10365118 |
| Referred BY | : Self | Sample Type | : Whole blood EDTA |
| Sample Collected | : Mar 25, 2026, 01:43 PM | Report Date | : Mar 25, 2026, 03:10 PM. |

## Hepatocellular Carcinoma (HCC) Panel

### Complete Blood Count (CBC)

| Test Description | Value(s) | Unit(s) | Reference Range |
|---|---|---|---|
| **RBC Parameters** | | | |
| Hemoglobin<br>*Cyanide free spectrophotometry* | 14 | g/dL | 13.0 - 17.0 |
| RBC Count<br>*Electrical impedance* | 4.5 | 10^6/µl | 4.5 - 5.5 |
| PCV<br>*Calculated* | 40.8 | % | 40 - 50 |
| MCV<br>*Calculated* | 101 | fl | 83 - 101 |
| MCH<br>*Calculated* | 29 | pg | 27 - 32 |
| MCHC<br>*Calculated* | 33.5 | g/dL | 31.5 - 34.5 |
| RDW (CV)<br>*Calculated* | 13 | % | 11.6 - 14.0 |
| RDW-SD<br>*Calculated* | 41 | fl | 35.1 - 43.9 |
| **WBC Parameters** | | | |
| TLC<br>*Electrical impedance and microscopy* | 5 | 10^3/µl | 4 - 10 |
| **Differential Leucocyte Count** | | | |
| Neutrophils<br>*Flow-cytometry DHSS* | 50 | % | 40 - 80 |
| Lymphocytes<br>*Flow-cytometry DHSS* | 38 | % | 20 - 40 |
| Monocytes<br>*Flow-cytometry DHSS* | 9 | % | 2 - 10 |
| Eosinophils<br>*Flow-cytometry DHSS* | 3 | % | 1 - 6 |
| Basophils<br>*Flow-cytometry DHSS* | 0 | % | 0 - 2 |
| **Absolute Leukocyte Counts**<br>***Calculated*** | | | |
| Neutrophils.<br>*Calculated* | 2.5 | 10^3/µl | 2 - 7 |
| Lymphocytes.<br>*Calculated* | 1.9 | 10^3/µl | 1 - 3 |
| Monocytes.<br>*Calculated* | 0.45 | 10^3/µl | 0.2 - 1.0 |
| Eosinophils.<br>*Calculated* | 0.15 | 10^3/µl | 0.02 - 0.5 |

Booking Centre :- REDCLIFFE - ILC NOIDA
Processing Lab :- Redcliffe Lifetech Pvt. Ltd., H-55, Sector-63, Noida, Uttar Pradesh - 201301

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| Basophils.<br>*Calculated* | **0** | 10^3/µl | 0.02-0.1 |
| **Platelet Parameters** | | | |
| Platelet Count<br>*Electrical impedance and microscopy* | 235 | 10^3/µl | 150 - 410 |
| Mean Platelet Volume (MPV)<br>*Calculated* | 9.5 | fL | 9.3 - 12.1 |
| PCT<br>*Calculated* | 0.2 | % | 0.17 - 0.32 |
| PDW<br>*Calculated* | 12.3 | fL | 8.3 - 25.0 |
| P-LCR<br>*Calculated* | 19 | % | 18 - 50 |
| P-LCC<br>*Calculated* | 45 | 10^9/L | 44 - 140 |
| Mentzer Index<br>*Calculated* | 22.44 | % | > 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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| Patient ID / UHID | : 16038190/OF16038190 | Barcode NO | : RL10365109 |
| Referred BY | : Self | Sample Type | : Serum |
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## Liver Function Test (LFT)

| Test Description | Value(s) | Unit(s) | Reference Range |
|---|---|---|---|
| Bilirubin Total<br>*Diazo* | 1.1 | mg/dL | 0 - 1.2 |
| Bilirubin Direct<br>*Diazo Jondrof* | 0.2 | mg/dL | 0.0 - 0.5 |
| Bilirubin Indirect<br>*Calculated* | 0.9 | mg/dL | 0.1 - 1.0 |
| SGOT/AST<br>*IFCC without P5P* | 21 | U/L | up to 40 |
| SGPT/ALT<br>*IFCC without P5P* | 24 | U/L | up to 41 |
| SGOT/SGPT Ratio<br>*Calculated* | 0.88 | Ratio | - |
| Alkaline Phosphatase<br>*IFCC* | 104 | U/L | 40 - 129 |
| Total Protein<br>*Biuret* | 7.1 | g/dL | 6.4 - 8.3 |
| Albumin<br>*BCG Colorimetric* | 4.3 | g/dL | 3.5 - 5.2 |
| Globulin<br>*Calculated* | 2.8 | g/dL | 2.3 - 3.5 |
| Albumin :Globulin Ratio<br>*Calculated* | 1.54 | Ratio | 1.3 - 2.1 |
| Gamma Glutamyl Transferase (GGT)<br>*IFCC Colorimetric* | 45 | U/L | 8 - 61 |

**Interpretation:**
The liver filters blood, metabolizes nutrients, detoxifies harmful substances, and produces blood clotting proteins. Liver cells contain enzymes that facilitate these functions. When cells are damaged, enzymes leak into the blood, detectable through blood tests.

Key enzymes tested:

**1. AST (SGOT):** may indicate tissue injury / damage in muscles or liver.
**2. ALT (SGPT):** Primarily in the liver. Elevated ALT and AST suggest liver damage.
**3. Alkaline Phosphatase & GGT:** Linked to bile production and flow. Elevated levels may indicate bile flow issues related to the liver, gallbladder, or bile ducts.

Blood proteins, **albumin and globulin**, are essential for growth, development, and health.

**1. Low protein:** May indicate bleeding, liver disorders, malnutrition, or agammaglobulinemia.
**2. High protein (Hyperproteinemia):** Often due to dehydration or increased protein production.
**3. Low albumin:** Caused by poor diet, kidney, or liver disease.
**4. High albumin:** Usually due to severe dehydration.

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MC-5280

| Test Description | Value(s) | Unit(s) | Reference Range |
|---|---|---|---|

**Lactate Dehydrogenase (LDH), Serum**

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|---|---|---|---|
| LDH:Lactate Dehydrogenase<br>*IFCC* | 124 | U/L | up to 250 |

**Interpretation:**

1-Marked elevations in Lactate Dehydrogenase (LDH) activity can be observed in megaloblastic anemia, untreated pernicious anaemia, Hodgkin's disease, abdominal and lung cancers, severe shock, and hypoxia.

2-Moderate to slight increases in LDH levels are seen in myocardial infarction (MI), pulmonary infarction, pulmonary embolism, leukemia, hemolytic anemia, infectious mononucleosis, progressive muscular dystrophy (especially in the early and middle stages of the disease), liver disease, and renal disease.

3-In liver disease, elevations of LHD are not as great as the increases in aspartate amino transferase (AST) and alanine aminotransferase (ALT).

4-Increased levels of the enzyme are found in about one third of patients with renal disease, especially those with tubular necrosis or pyelonephritis. However, these elevations do not correlate well with proteinuria or other parameters of renal disease On occasion a raised LDH level may be the only evidence to suggest the presence of a hidden pulmonary embolus.

**Caution:**

1-Red blood cells contain much more lactate dehydrogenase (LDH) than serum. A hemolyzed specimen is not acceptable. LDH activity is one of the most sensitive indicators of in vitro hemolysis. Causes can include transportation via pneumatic tube, vigorous mixing, or traumatic venipuncture.

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| Referred BY | : Self | Sample Type | : Serum |
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## #Decarboxy Prothrombin (DCP) PIVKA-II

| Test Description | Value(s) | Unit(s) | Reference Range |
|---|---|---|---|
| DES-GAMMA CARBOXY PROTHROMBIN (DCP)/PIVKA II<br>*CMIA* | 24.0 | mAU/mL | 17.36 - 50.90 |

**Interpretation:**

**Note:**

1. Patient samples may contain heterophilic antibodies or mouse monoclonal antibodies that could react in immunoassays to give a falsely elevated or depressed result.
2. Results should always be interpreted in conjunction with the patient's medical history, clinical presentation and other findings.
3. False low values may be observed in patients receiving vitamin K analogues.
4. False high values may be observed in patients receiving vitamin K antagonists, antimicrobial drugs, with diet low in vitamin K or in patients with ongoing alcohol intake.<40

**Comment:**

Des-gamma carboxyprothrombin (DCP) also known as PIVKA II (Prothrombin induced by VitaminK antagonist II) is an abnormal prothrombin that is increased in the sera of patients with Hepatocellular Carcinoma (HCC). Unlike AFP, it is not elevated in Chronic Liver Disease, Cirrhosis, pregnancy or Germ Cell Tumors. It is a complementary biomarker to AFP in HCC and increases the sensitivity (83%) and specificity (84%) for HCC when used in combination. It is recommended to measure two or more different tumor markers (AFP, DCP or AFP L3) for the diagnosis of HCC at an early stage.1,2 DCP has also been found to correlate better with tumor size, histological grade, portal vein invasion and /or intrahepatic metastasis in patients with HCC.

**Usage:**

1. Risk assessment of patients with Chronic Liver Disease for development of HCC
2. To aid in the diagnosis and prognosis of patients with HCC
3. To monitor therapeutic efficacy in patients with HCC

**References:**

1. Development of Evidence Based Clinical Guidelines for the diagnosis and treatment of Hepatocellular Carcinoma in Japan. Hepatology Research 2008; 38: 37 - 51
2. Prevention of Hepatocellular Carcinoma in the Asia - Pacific Region: Consensus Statements. Journal of Gastroenterology and Hepatology 25 (2010) 657-663

NOTE- **This test is processed at Redcliffe's partnered lab

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**Alpha Fetoprotein (AFP), Tumor Marker**

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|---|---|---|---|
| AFP (ALPHA FETOPROTEIN), TUMOR MARKER<br>*CLIA* | 0.5 | ng/mL | Up to 9.0 |

**Interpretation:**
1. This test is not recommended to screen cancers in the general population.
2. False negative/positive results are observed in patients receiving mouse monoclonal antibodies for diagnosis or therapy.
3. Use of AFP as a tumor marker is not recommended in pregnant females.
4. AFP values regardless of levels should not be interpreted as absolute evidence for the presence or absence of disease. All values should be correlated with clinical findings and results of other investigations.

**Clinical Use**
1. Useful for determining prognosis and monitoring therapy for Hepatocellular carcinoma. Level of AFP is a prognostic indicator of survival. Elevated AFP and serum bilirubin levels in these patients is associated with shorter survival time.
2. An aid in the management of Germ cell (Non-Seminomatous) tumors. Measurement of AFP levels in combination with HCG levels are useful in classifying and staging Germ cell tumors
3. To predict tumor recurrence/presence of residual tumor

**Increased Levels**
1. Germ cell (Non-Seminomatous) tumors
2. Primary hepatocellular carcinoma (70%)
3. Teratocarcinoma
4. Gastrointestinal tract cancers with or without liver metastasis
5. Benign hepatic conditions like Acute Viral Hepatitis, Chronic active hepatitis and Cirrhosis
6. Ataxia telangiectasia
7. Hereditary tyrosinemia

*** 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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