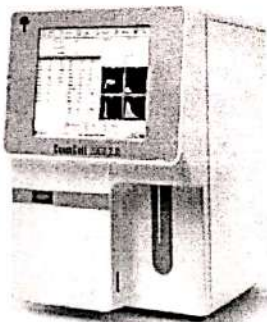


Installation Qualification  
For  
Councill Penta 2.0  
Auto hematology Analyzer



Tulip Diagnostics (P) Ltd.

Hem  
Sample  
Mode:  
Name:  
Gende  
Age:  
Bed N  
Patien  
Depar  
Oper  
Super  
Test T  
[Th

## **Contents**

- 1) Instrument Identification
- 2) Environment Condition
- 3) Instrument Delivery and Documentation
- 4) Instrument Safety
- 5) Assembly and Installation
- 6) Summary Report



**1) Instrument Identification**

**Auto hematology analyzer ( Councell penta 2.0)**

Sr. No.	Specification	As per design qualification	Specification received	Match (Yes/No)
1	General Feature	The measurement methods used in this analyzer are: the electrical Impedance method for determining the RBC and PLT data; the colorimetric method for determining the HGB; laser-based flow cytometry for determining the WBC data.		Yes
2	Sample aspiration volume.	Whole Blood mode_20μL, pri-diluted mode_20μL of whole blood/capillary blood sample and 480μL of diluent		Yes
3	LED lamp	530nm LED		Yes
4	Communication port	LAN Port		Yes
5	Printer	External ink tank and leaser printer		Yes
6	Power requirement	AC100V~240V, Input Power ≤200VA, 50/60HZ.		Yes
7	Grounding	Good grounding <5V		Yes

Comments:

## 2) Environment Condition

Has the Instrument been adequately acclimatized since transport or storage?

NO:

YES:

Operating Parameters	Specified Range	Conditions Met
Ambient Temperature	10 to 30 degrees	Yes
Relative Humidity	$\leq 85\%$	Yes
Supply Voltage & Frequency	100 to 240V, 50/60 Hz AC	

Comments:



#### 4) Instrument Safety

##### Manufacturer Safety Recommendations:

- |  |  |     |
|--|--|-----|
| Allow enough space for the Instrument                                | YES: <input checked="" type="checkbox"/> | NO: |
| Position on level, non-combustible surface Indoors                   | YES: <input checked="" type="checkbox"/> | NO: |
| Area free from aggressive/ explosive chemical mixtures               | YES: <input checked="" type="checkbox"/> | NO: |
| Ensure correct power supply and all power switches Easily accessible | YES: <input checked="" type="checkbox"/> | NO: |
| Keep the analyzer away from electromagnetic waves                    | YES: <input checked="" type="checkbox"/> | NO: |
| Read Operator Manual before use                                      | YES: <input checked="" type="checkbox"/> | NO: |
- 

Comments:

## Assembly and Installation

Assembled and installed by:	User:	Specialized Engineer:
Installation Procedure		OK
N/A		
Check and retain Packaging		OK
Verifying the site before connecting to UPS power supply		OK
Checking the instrument before performing the test		OK

Comments:



### 3) Instrument Delivery and Documentation

Unpack the Instrument carefully. Are any items missing against the Packing List?

YES:

NO:

If yes, state the missing Items: \_\_\_\_\_

Is there any damage to the Instrument or Accessories?

YES:

NO:

If yes: Description of Damage: \_\_\_\_\_

Corrective Action: \_\_\_\_\_

Manufacturing informed: YES: \_\_\_\_\_ NO: \_\_\_\_\_

Is all Standard Documentation Included?

Operating Manual:

Present:

Missing: \_\_\_\_\_

Warranty Card:

Present:

Missing: \_\_\_\_\_

Is all additional documentation Included:

Present:

Missing: \_\_\_\_\_

Installation Qualification: *yes*

Operational Qualification: *yes*

Performance Qualification: *yes*

Comments:

*Installation qualification earned out successfully.*

Tulip Diagnostics (P) Ltd.



6) Summary Report

Instrument Name: *Camcee Penta 2.0*

Sr. No.: *0840519220422*

Manufacturer: *Tulip Diagnostics (P) Ltd*

Assessment of complete Installation Qualification:

No Deviations:

Deviations:

Deviation	Impact on Operation	Justification for Acceptance

Successful completion of the preceding activities and checks indicates that this Instrument is installed successfully as per the set protocol. The instrument has passed the Installation Qualification procedure and may now be released for use.

IQ Completed By:	<i>Sanjeev Tinnadi</i>	Date: <i>08/08/23</i>	<i>Sanjeev</i>
Deviations Approved By:	<i>Sanjeev Tinnadi</i>	Date: <i>08/08/23</i>	<i>Sanjeev</i>
IQ Approved By:	<i>Sanjeev Tinnadi</i>	Date: <i>08/08/23</i>	<i>Sanjeev</i>

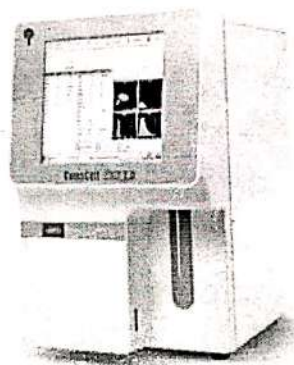
Comments:

Tulip Diagnostics (P) Ltd.





Operation Qualification  
For  
Council penta 2.0  
Auto Hematology Analyzer.



## Contents

- 1) Safety Tests
- 2) Pre-Run Checks
- 3) Functional Tests
- 4) Training
- 5) Summary Report.



## 1) Safety Tests

This instrument confirms to the following standards and is supplied fully tested by the Manufacturer.

- Electrical equipment for measurement, control and laboratory use.
- Instrument requirement for laboratory for Whole Blood testing.

The following electrical safety tests should be carried out by a competent person after Installation.

Safety Tests	Pass	Fail	Date	Signed
Earthing voltage	✓		08/08/2023	Sanjeev Tinas
Input Supply voltage	✓		08/08/2023	Sanjeev Tinas

Comments:

## 2) Pre-Run Checks

### Auto Hematology Analyzer ( Councell Penta 2.0)

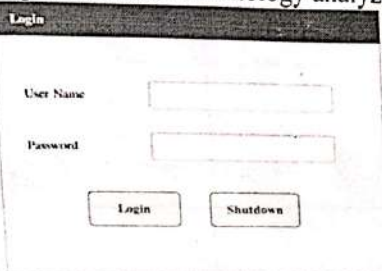
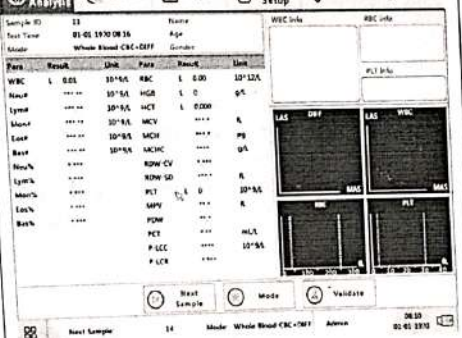
Pre run check	OK	N/A
Mechanics initialization	OK	
Fluidic initialization	OK	
Ambient temperature	OK	
HGB AD value	OK	
Background test	OK	

Comments:



### 3) Functional Tests

#### Auto Hematology Analyzer (Councill Penta 2.0)

Functional Test	Acceptance Criteria	Pass	Fail
Instrument power ON	<p>Log on the Auto hematology analyzer</p>  <p>After self test the instrument will display the following screen.</p> 	Pass	
Self Test	The instrument will also prompt the error status on the screen if any.	Pass	
Background Test	$WBC \leq 0.2 \times 10^9 / L$ , $RBC \leq 0.02 \times 10^{12} / L$ $HGB \leq 1 g/L$ , $PLT \leq 10 \times 10^9 / L$ , $HCT \leq 0.5\%$	Pass	

Comments:

Tulip Diagnostics (P) Ltd.

#### 4) Training

Trained Operators	Read Operator Manual	Read SOP	Practical Training	Authorizing Signature
Gajendra	✓	✓	✓	Sanjeev
Jay Yadav	✓	✓	✓	Sanjeev
Sushma	✓	✓	✓	Sanjeev

Comments:



5) Summary Report

Instrument Name: *Coulter Pen-6 2.0*

Sr. No.: *0846519220422*

Manufacturer: *Tulip Diagnostics Pvt Ltd*

Assessment of complete Operational Qualification:

No Deviations:  *no*

Deviations:

Deviation	Impact on Operation	Justification for Acceptance

Successful completion of the preceding activities and checks indicates that this Instrument is operating satisfactorily following delivery and installation. The instrument has passed the Operational Qualification procedure and may now be released for use.

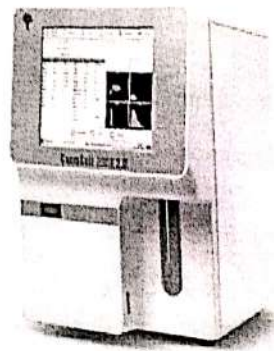
OQ Completed By:	<i>Sanjeev Tiwari</i>	Date: <i>08/08/2023</i>	<i>Sanjeev</i>
Deviations Approved By:	<i>Sanjeev Tiwari</i>	Date: <i>08/08/2023</i>	<i>Sanjeev</i>
OQ Approved By:	<i>Sanjeev Tiwari</i>	Date: <i>08/08/2023</i>	<i>Sanjeev</i>

Comments:

Tulip Diagnostics (P) Ltd.

**PERFORMANCE QUALIFICATION  
FOR  
COUNCELL PENTA 2.0**

**AUTO HEMATOLOGY ANALYZER**





## **Contents**

- 1) Performance Check
- 2) Routine Maintenance
- 3) Safety Tests
- 4) Summary Report

## 1) Performance Check

Auto Hematology Analyzer (Councell penta 2.0)

Test 1

Test Name: Sample Processing

Purpose: Ability to Process Samples

Method:

1. Run the control samples five times consecutively

Acceptance Criteria: Each of the results obtained above should be within the range as specified in the control chart.

Parameters Values for Verification:  
Level 1 (Low Control)

RBC Count:

Test	Control Values	Results Obtained	Pass	Fail
1.	$2.16 \pm 0.18$	2.15	✓	
2.	$2.16 \pm 0.18$	2.15	✓	
3.	$2.16 \pm 0.18$	2.16	✓	

WBC Count:

Test	Control Values	Results Obtained	Pass	Fail
1.	$3.64 \pm 0.50$	3.61	✓	
2.	$3.64 \pm 0.50$	3.59	✓	
3.	$3.64 \pm 0.50$	3.62	✓	

Hemoglobin:

Test	Control Values	Results Obtained	Pass	Fail
1.	$56 \pm 4$	52	✓	
2.	$56 \pm 4$	52	✓	
3.	$56 \pm 4$	52	✓	

MCV:

Tulip Diagnostics (P) Ltd.





Test	Control Values	Results Obtained	Pass	Fail
1.	78.2 ± 5.0	76	✓	
2.	78.2 ± 5.0	77	✓	
3.	78.2 ± 5.0	75	✓	

Platelet Count:

Test	Control Values	Results Obtained	Pass	Fail
1.	48 ± 20	44	✓	
2.	48 ± 20	50	✓	
3.	48 ± 20	49	✓	

Level 2 (Normal Control)

RBC Count:

Test	Control Values	Results Obtained	Pass	Fail
1.	4.41 ± 0.24	4.90	✓	
2.	4.41 ± 0.24	4.38	✓	
3.	4.41 ± 0.24	4.41	✓	

WBC Count:

Test	Control Values	Results Obtained	Pass	Fail
1.	8.42 ± 1.00	8.48	✓	
2.	8.42 ± 1.00	8.50	✓	
3.	8.42 ± 1.00	8.29	✓	

Hemoglobin:

Test	Control Values	Results Obtained	Pass	Fail
1.	133 ± 6	133	✓	
2.	133 ± 6	133	✓	
3.	133 ± 6	138	✓	

MCV:

Test	Control Values	Results Obtained	Pass	Fail
1.	89.9 ± 5.0	90.8	✓	
2.	89.9 ± 5.0	90.4	✓	
3.	89.9 ± 5.0	89.8	✓	

Platelet Count:

Test	Control Values	Results Obtained	Pass	Fail
1.	252 ± 40	256	✓	
2.	282 ± 40	252	✓	
3.	252 ± 40	268	✓	

Level 3 (High Control)

RBC Count:

Test	Control Values	Results Obtained	Pass	Fail
1.	5.04 ± 0.30	5.00	✓	
2.	5.04 ± 0.30	5.01	✓	
3.	5.04 ± 0.30	5.00	✓	

WBC Count:

Test	Control Values	Results Obtained	Pass	Fail
1.	19.34 ± 2.50	18.99	✓	
2.	19.34 ± 2.50	19.27	✓	
3.	19.34 ± 2.50	19.21	✓	

Hemoglobin:

Test	Control Values	Results Obtained	Pass	Fail
1.	164 ± 8	16.1	✓	
2.	164 ± 8	15.9	✓	
3.	164 ± 8	16.6	✓	

MCV:

Test	Control Values	Results Obtained	Pass	Fail
1.	97.7 ± 5.0	100.1	✓	
2.	97.7 ± 5.0	96.9	✓	
3.	97.7 ± 5.0	96.9	✓	

Platelet Count:

Test	Control Values	Results Obtained	Pass	Fail
1.	510 ± 60	524	✓	
2.	510 ± 60	520	✓	
3.	51 ± 60	519	✓	

Validation Team:

Name: Sanjea Tiwari

Designation: Senior Service Engineer

Signature *Sanjea*

Date 8/8/2023



## Test 2

### Test Name:

1. Tests for checking the performance of the instruments during analysis
2. Tests for checking long term performance of the instrument

### Purpose:

The purpose of the above checks is to ensure the reliability of the results being obtained.

### Method:

#### 1. During Sample analysis:

To run control samples each time the instrument is used for sample analysis and verification of the results of the controls to be within the reference range to be established by performance of the precision experiments.

#### 2. Long term Performance

This is to be checked by Levy Jennings plots to be updated once in six months

### Validation Team:

Name *Somjeet Tiwar*

Tulip Diagnostics (P) Ltd.



## 2) Routine Maintenance

### 1. Using probe cleaner daily

The cleanser soak should be performed:

- 1 During the installation and shut down of the machine
- 2 When the background results' abnormal , bad differential of scattergram or clogging.
- 3 Analyzer has been running for more than 24 hours.
- 4 More than 1000 samples were run within 24 hours.

### 2) Swab Cleaning and Maintenance

Repeatedly scrub the bottom end of the swab and the inside of its lower aperture with a Q-tip dampened with the diluted probe cleanser

### 3) Washing.

1. High background of WBC or HGB, clean WBC chamber
2. High background of RBC or PLT, clean RBC chamber
3. High background of scatter gram, clean Flowcell.
4. Clean Sampling probe when it's dirty

### 4) .Maintenance for other parts

Clean the dirty area with soft cloth with alcohol

Validation Team :

Name: *Sanjeev Tindan*

Designation: *Senior Service Engineer*

Signature *Sanjeev*

Tulip Diagnostics (P) Ltd.



### 3) Safety Tests

This instrument confirms to the following standards and is supplied fully tested by the Manufacturer.

- Electrical equipment for measurement, control and laboratory use.
- Instrument requirement for laboratory for Blood testing.

The following electrical safety tests should be carried out by a competent person after Installation.

Safety Tests	Pass	Fail	Date	Signed
Earthing	Pass		8/8/23	Sanjeev Tinnar
UPS Supply	Pass		08/08/23	Sanjeev Tinnar

Comments:

#### 4) Summary Report

Instrument Name: TULIP DIAGNOSTIC (P) LTD

Sr. No.: 0840619220422

Manufacturer:

Assessment of complete Performance Qualification:

No Deviations:

Deviations:

Deviation	Impact on Operation	Justification for Acceptance

Successful completion of the preceding activities and checks indicates that this Instrument is operating satisfactorily following delivery and installation. The instrument has passed the Operational Qualification procedure and may now be released for use.

PQ Completed By:	Sanjeev Tinnar	Date: 8/8/23	Sanjeev
Deviations Approved By:	Sanjeev Tinnar	Date: 08/8/23	Sanjeev
PQ Approved By:	Sanjeev Tinnar	Date: 08/8/23	Sanjeev

Comments:



Works:  
 Plot No. S-124, S-125, S-126, Utility Plot No VIII, Phase III-B,  
 Verna Industrial Estate, Verna, Goa - 403 722, INDIA.  
 Tel: (0832) 8624555, Telefax: (0832) 2783511.  
 E-mail: microexpressfac@tulipgroup.org

## Calibration Certificate

Customer Name	VIIT HOSPITAL	Date	15/01/2024
Address	80 VIIT HOSPITAL KHURJA ROAD BULANSHAHR UTTER PRADESH 203001		
Instrument Model	Councill Pent 2.0	Date of Calibration	15/01/2024
Serial No	0840619220422	Calibrator Lot Number	PLUS0318
		Calibrator Expiry date	14/01/2025

Calibration Values	Parameter	Range	Mean of Measured Values	Factor	Old Factor
	WBC x 10 <sup>3</sup> /μl	6.61-6.82	6.73	100	96.77
	RBC x 10 <sup>6</sup> /μl	3.690-4.0	3.84	100	101.18
	HGB g/dl	10.21-11.36	10.88	99.3	95.39
	HCT	33.06-35.55	33.56	100	103.5
	PLT x 10 <sup>3</sup> /μl	190-256	219	105	97.17

It is hereby certified that the Councill Pent 2.0 hematology analyzer installed at Lotus Diagnostic and Imaging Centre has been calibrated using the standard reference material PLUS 0318.

This certificate is valid for 14/01/2025.

With Regards,




Deepak Kashyap  
 (Head- Products & Marketing) For

**Works:**

Plot No. S-124, S-125, S-126, Utility Plot No. VIII, Phase II-B,

Verna Industrial Estate, Verna, Goa - 403 722, INDIA.

Tel.: (0832) 6624555, Telefax: (0832) 2783511.

E-mail: microexpressfac@tulipgroup.org

## CALIBRATION DATA

SMP NO/TIME	WBC	RBC	HGB	HCT	PLT
SCS1	6.74	3.77	10.9	33.3	230
SCS2	6.72	3.99	10.9	33.3	225
SCS3	6.73	3.78	10.9	33.4	206
SCS4	6.69	3.79	10.8	33.5	206
SCS5	6.79	3.88	10.9	34.3	228
<b>MEAN</b>	<b>6.73</b>	<b>3.84</b>	<b>10.88</b>	<b>33.56</b>	<b>219</b>
Acceptable Limits	6.61 - 6.82	3.690 - 4.0	10.21 - 11.36	33.06 - 35.55	190 - 256
<b>Result</b>	<b>PASS</b>	<b>PASS</b>	<b>PASS</b>	<b>PASS</b>	<b>PASS</b>

(Traceability System) :

The traceability system of countcell penta 2.0 Hematology analyzers are shown in attached sheet.


Deepak Kashyap  
Head- Products & Marketing)For





**Delhi Office:**

84, Lal Singh Building, 2nd Floor, 205-206, Near Aggarwal Sweets,

Vasant Kunj Road, Mahipalpur, New Delhi-110 037, INDIA.

Tel.: (011) 46062637 / 38 / 39. Fax : (011) 46062640.

E-mail: tulipdelhi@yahoo.co.in, tulipdelhi@gmail.com

### Third Party Material L1

Parameter	Obtained Value	Range	Remark
WBC	3.61	3.64±0.50	PASS
RBC	2.19	2.16±0.18	PASS
HGB	5.9	5.6±0.4	PASS
MCV	78.1	78.2±5.0	PASS
PLT	54	48±20	PASS

### Third Party Material L2

Parameter	Obtained Value	Range	Remark
WBC	8.40	8.42±1.0	PASS
RBC	4.39	4.41±0.24	PASS
HGB	13.51	13.3±0.6	PASS
MCV	93	89.9±5.0	PASS
PLT	258	252±40	PASS

### Third Party Material L3

Parameter	Obtained Value	Range	Remark
WBC	19.1	19.4±2.50	PASS
RBC	5.14	5.04±0.30	PASS
HGB	16.5	16.4±0.8	PASS
MCV	99	97.7±5.0	PASS
PLT	525	510±60	PASS

Evaluation done by:

Deepak Kashyap

QC- OFFICER.

Tulip Diagnostics (P) Ltd.

Place: NEW DELHI



### Hematology Analyzer Report

Sample ID: 02  
Mode: Whole Blood-CBC+DIFF  
Name: cal 1  
Gender:

Age:  
Patient ID:  
Department: Admin  
Operator: Admin  
Supervisor:

Test Time: 15/01/2024 10:31  
[The test result only accounts for this test sample]

Result

6.74  
4.25  
1.87  
0.47  
0.04  
0.09  
63.1  
27.9  
7.0  
0.6  
1.4  
2.27  
120.32

Unit  
/nL  
/nL  
/nL  
/nL  
/nL  
/nL  
/nL  
/nL  
/nL  
/nL  
/nL  
/nL  
/nL

Para  
WBC  
Neu#  
Lym#  
Mon#  
Eos#  
Bas#  
-ym%  
Mon%  
Eos%  
Bas%  
NLR  
pLR

Ref. Range  
4.00-10.00  
2.00-7.00  
0.80-4.00  
0.12-1.20  
0.02-0.50  
0.00-0.10  
50.0-70.0  
20.0-40.0  
3.0-12.0  
0.5-5.0  
0.0-1.0

Result  
3.99  
10.9  
35.3  
88.4  
27.2  
30.8  
11.8  
38.2  
225  
12.2  
22.0  
0.274

Unit  
10<sup>12</sup>/L  
q/dL  
%

Para  
RBC  
HGB  
HCT  
MCH  
MCHC  
RDW-CV  
RDW-SD  
pLT  
MPV  
pDW-CV  
pDW-SD  
pCT

Ref. Range  
3.50-5.50  
11.0-16.0  
37.0-54.0  
80.0-100.0  
27.0-34.0  
32.0-36.0  
11.0-16.0  
35.0-56.0  
100-300  
7.0-11.0  
0.150-0.170  
9.0-17.0  
0.108-0.282

Result  
3.77  
10.9  
33.3  
88.3  
32.6  
11.8  
38.2  
230  
11.9  
0.166  
23.4  
0.274

Unit  
10<sup>12</sup>/L  
g/dL  
%

Para  
RBC  
HGB  
HCT  
MCH  
MCHC  
RDW-CV  
RDW-SD  
pLT  
MPV  
pDW-CV  
pDW-SD  
pCT

Ref. Range  
4.00-10.00  
2.00-7.00  
0.80-4.00  
0.12-1.20  
0.02-0.50  
0.00-0.10  
50.0-70.0  
20.0-40.0  
3.0-12.0  
0.5-5.0  
0.0-1.0

Result  
6.93  
4.13  
2.03  
0.62  
0.05  
0.10  
59.6  
29.3  
8.9  
0.7  
1.5  
2.03  
101.48

Unit  
/nL  
/nL  
/nL  
/nL  
/nL  
/nL  
/nL  
/nL  
/nL  
/nL  
/nL  
/nL  
/nL

Para  
WBC  
Neu#  
Lym#  
Mon#  
Eos#  
Bas#  
-ym%  
Mon%  
Eos%  
Bas%  
NLR  
pLR

Ref. Range  
4.00-10.00  
2.00-7.00  
0.80-4.00  
0.12-1.20  
0.02-0.50  
0.00-0.10  
50.0-70.0  
20.0-40.0  
3.0-12.0  
0.5-5.0  
0.0-1.0

Result  
3.79  
10.9  
33.5  
88.4  
28.8  
32.6  
11.7  
38.1  
206  
12.6  
23.2

Unit  
10<sup>12</sup>/L  
g/dL  
%

Para  
RBC  
HGB  
HCT  
MCH  
MCHC  
RDW-CV  
RDW-SD  
pLT  
MPV  
pDW-CV  
pDW-SD  
pCT

Ref. Range  
3.50-5.50  
11.0-16.0  
37.0-54.0  
80.0-100.0  
27.0-34.0  
32.0-36.0  
11.0-16.0  
35.0-56.0  
100-300  
7.0-11.0  
0.150-0.170  
9.0-17.0  
0.108-0.282

Result  
3.79  
10.9  
33.5  
88.4  
28.8  
32.6  
11.7  
38.1  
206  
12.8  
0.152  
22.7

Unit  
10<sup>12</sup>/L  
g/dL  
%

Para  
RBC  
HGB  
HCT  
MCH  
MCHC  
RDW-CV  
RDW-SD  
pLT  
MPV  
pDW-CV  
pDW-SD  
pCT

Ref. Range  
3.50-5.50  
11.0-16.0  
37.0-54.0  
80.0-100.0  
27.0-34.0  
32.0-36.0  
11.0-16.0  
35.0-56.0  
100-300  
7.0-11.0  
0.150-0.170  
9.0-17.0  
0.108-0.282

### Hematology Analyzer Report

Sample ID: 03  
Mode: Whole Blood-CBC+DIFF  
Name: cal 2  
Gender:

Age:  
Patient ID:  
Department: Admin  
Operator: Admin  
Supervisor:

Test Time: 15/01/2024 10:33  
[The test result only accounts for this test sample]

Result

6.72  
4.25  
1.87  
0.47  
0.04  
0.09  
63.1  
27.9  
7.0  
0.6  
1.4  
2.27  
120.32

Unit  
/nL  
/nL  
/nL  
/nL  
/nL  
/nL  
/nL  
/nL  
/nL  
/nL  
/nL  
/nL  
/nL

Para  
WBC  
Neu#  
Lym#  
Mon#  
Eos#  
Bas#  
-ym%  
Mon%  
Eos%  
Bas%  
NLR  
pLR

Ref. Range  
4.00-10.00  
2.00-7.00  
0.80-4.00  
0.12-1.20  
0.02-0.50  
0.00-0.10  
50.0-70.0  
20.0-40.0  
3.0-12.0  
0.5-5.0  
0.0-1.0

Result  
6.72  
4.25  
1.87  
0.47  
0.04  
0.09  
63.1  
27.9  
7.0  
0.6  
1.4  
2.27  
120.32

Unit  
/nL  
/nL  
/nL  
/nL  
/nL  
/nL  
/nL  
/nL  
/nL  
/nL  
/nL  
/nL  
/nL

Para  
WBC  
Neu#  
Lym#  
Mon#  
Eos#  
Bas#  
-ym%  
Mon%  
Eos%  
Bas%  
NLR  
pLR

Ref. Range  
4.00-10.00  
2.00-7.00  
0.80-4.00  
0.12-1.20  
0.02-0.50  
0.00-0.10  
50.0-70.0  
20.0-40.0  
3.0-12.0  
0.5-5.0  
0.0-1.0

Result  
6.93  
4.13  
2.03  
0.62  
0.05  
0.10  
59.6  
29.3  
8.9  
0.7  
1.5  
2.03  
101.48

Unit  
/nL  
/nL  
/nL  
/nL  
/nL  
/nL  
/nL  
/nL  
/nL  
/nL  
/nL  
/nL  
/nL

Para  
WBC  
Neu#  
Lym#  
Mon#  
Eos#  
Bas#  
-ym%  
Mon%  
Eos%  
Bas%  
NLR  
pLR

Ref. Range  
4.00-10.00  
2.00-7.00  
0.80-4.00  
0.12-1.20  
0.02-0.50  
0.00-0.10  
50.0-70.0  
20.0-40.0  
3.0-12.0  
0.5-5.0  
0.0-1.0

Result  
6.69  
4.15  
2.04  
0.39  
0.04  
0.07  
62.0  
30.5  
5.9  
0.6  
1.0

Unit  
/nL  
/nL  
/nL  
/nL  
/nL  
/nL  
/nL  
/nL  
/nL  
/nL  
/nL  
/nL  
/nL

Para  
WBC  
Neu#  
Lym#  
Mon#  
Eos#  
Bas#  
-ym%  
Mon%  
Eos%  
Bas%  
NLR  
pLR

Ref. Range  
4.00-10.00  
2.00-7.00  
0.80-4.00  
0.12-1.20  
0.02-0.50  
0.00-0.10  
50.0-70.0  
20.0-40.0  
3.0-12.0  
0.5-5.0  
0.0-1.0

Result  
6.69  
4.15  
2.04  
0.39  
0.04  
0.07  
62.0  
30.5  
5.9  
0.6  
1.0

Unit  
/nL  
/nL  
/nL  
/nL  
/nL  
/nL  
/nL  
/nL  
/nL  
/nL  
/nL  
/nL  
/nL

Para  
WBC  
Neu#  
Lym#  
Mon#  
Eos#  
Bas#  
-ym%  
Mon%  
Eos%  
Bas%  
NLR  
pLR

Ref. Range  
4.00-10.00  
2.00-7.00  
0.80-4.00  
0.12-1.20  
0.02-0.50  
0.00-0.10  
50.0-70.0  
20.0-40.0  
3.0-12.0  
0.5-5.0  
0.0-1.0

Result  
6.69  
4.15  
2.04  
0.39  
0.04  
0.07  
62.0  
30.5  
5.9  
0.6  
1.0

Unit  
/nL  
/nL  
/nL  
/nL  
/nL  
/nL  
/nL  
/nL  
/nL  
/nL  
/nL  
/nL  
/nL

Para  
WBC  
Neu#  
Lym#  
Mon#  
Eos#  
Bas#  
-ym%  
Mon%  
Eos%  
Bas%  
NLR  
pLR

Ref. Range  
4.00-10.00  
2.00-7.00  
0.80-4.00  
0.12-1.20  
0.02-0.50  
0.00-0.10  
50.0-70.0  
20.0-40.0  
3.0-12.0  
0.5-5.0  
0.0-1.0



**atology Analyzer Report**

Pat ID: 06 Whole Blood-CBC+DIFF  
 Patient Name: cal5

Ref: [Blank]

Loc: [Blank]

Attending: [Blank]

Department: Admin

Reviser: [Blank]

Time: 15/01/2024 10:39

Note: [Blank]

Reference: [Blank] (e test result only accounts for this test sample)

Para	Result	Unit	Ref. Range	Para	Result	Unit	Ref. Range
WBC	6.79	/nL	4.00-10.00	RBC	3.88	10 <sup>12</sup> /L	3.50-5.50
Neu#	3.99	/nL	2.00-7.00	HGB	10.9	g/dL	11.0-16.0
Lym#	2.10	/nL	0.80-4.00	HCT	34.3	%	37.0-54.0
Mon#	0.54	/nL	0.12-1.20	MCV	88.3	fL	80.0-100.0
Eos#	0.07	/nL	0.02-0.50	MCH	28.0	pg	27.0-34.0
Bas#	0.09	/nL	0.00-0.10	MCHC	31.7	g/dL	32.0-36.0
Neu%	58.9	%	50.0-70.0	RDW-CV	11.7	%	11.0-16.0
Lym%	30.9	%	20.0-40.0	RDW-SD	37.9	fL	35.0-56.0
Mon%	7.9	%	3.0-12.0	PLT	228	10 <sup>9</sup> /L	100-300
Eos%	1.0	%	0.5-5.0	MPV	12.3	fL	7.0-11.0
Bas%	1.3	%	0.0-1.0	PDW-CV	0.157		0.150-0.170
NLR	1.90			PDW-SD	22.7	fL	9.0-17.0
PLR	108.57			PCT	0.281	%	0.108-0.282



# HEAMATOLOGY

Equipmen TULIP

Date: 15/01/2024

Technician Name: MR.JAY YADAV

S.NO	WBC	RBC	HB	HCT/PCV	MCV	MCH	MCHC	PLT
1	4.93	4.75	14.4	40.8	85.9	30.4	35.4	172
2	4.79	4.54	14.3	38.8	85.5	31.4	36.7	148
3	4.95	4.48	14.5	38.4	85.7	32.4	37.7	155
4	4.77	4.51	14.4	38.7	85.8	32	37.3	154
5	4.81	4.55	14.4	38.9	85.5	31.7	37.1	159
6	4.98	4.6	14.4	39.3	85.6	31.3	36.6	149
7	4.94	4.52	14.4	38.5	85.3	31.8	37.3	183
8	4.85	4.52	14.4	39	86.1	31.9	37	177
9	4.76	4.62	14.2	39.8	86.1	30.7	35.6	146
10	4.68	4.69	14	40.5	86.2	29.9	34.7	159
MEAN	4.846	4.578	14.34	39.27	85.77	31.35	36.54	160.2
SD	0.099911	0.086641	0.1429841	0.8327331	0.3020302	0.7473286	0.9788883	12.847827
CV%	2.061722	1.8925518	0.9970995	2.1205325	0.3521396	2.3838232	2.6789498	8.0198672

APPROVED BY  
HQD.LAB

PREPARED BY  
QUALITY MANAGER





us%

Bas%	NLR	PLR	RBC	HGB	HCT	MCV	MCH	MCHC	RDW-CV	RDW-SD	PLT	MPV	PDW-CV	PDW-SD	PCT
0.8	1.93	113.91	4.75	14.4	40.8	85.9	30.4	35.4	13.1	40.9	172	10.8	0.151	16.0	0.186
0.8	1.94	99.33	4.54	14.3	38.8	85.5	31.4	36.7	13.0	40.6	148	11.2	0.152	19.0	0.165
0.6	1.99	101.97	4.48	14.5	38.4	85.7	32.4	37.7	13.0	40.7	155	11.4	0.159	20.4	0.177
0.5	1.75	99.35	4.51	14.4	38.7	85.8	32.0	37.3	13.0	40.8	154	11.1	0.158	18.8	0.171
0.6	1.82	90.26	4.55	14.4	38.9	85.5	31.7	37.1	13.0	40.6	139	11.3	0.157	20.7	0.171
0.8	1.89	96.13	4.60	14.4	39.3	85.6	31.3	36.6	12.9	40.4	149	11.6	0.157	20.7	0.158
0.9	1.94	119.61	4.52	14.4	38.5	85.3	31.8	37.3	13.0	40.8	183	11.3	0.167	21.3	0.172
0.5	1.76	112.03	4.52	14.4	39.0	86.1	31.9	37.0	13.2	41.6	177	10.0	0.154	14.3	0.182
0.5	1.73	92.99	4.62	14.2	39.8	86.1	30.7	35.6	12.9	40.4	146	11.6	0.160	18.6	0.200
0.7	1.70	103.25	4.69	14.0	40.5	86.2	29.9	34.7	12.9	40.5	159	11.1	0.156	20.0	0.170
													0.168	21.5	0.177

Sample ID  
 3-rec 3 on10  
 3-rec 3 on9  
 3-rec 3 on8  
 3-rec 3 on7  
 3-rec 3 on6  
 3-rec 3 on5  
 3-rec 3 on4  
 3-rec 3 on3  
 3-rec 3 on2  
 3-rec 3 on1

Mode  
 Whole 3lood-C3C-Diff  
 Whole 3lood-C3C-Diff  
 Whole 3lood-C3C-Diff  
 Whole 3lood-C3C-Diff  
 Whole 3lood-C3C-Diff  
 Whole 3lood-C3C-Diff  
 Whole 3lood-C3C-Diff  
 Whole 3lood-C3C-Diff  
 Whole 3lood-C3C-Diff  
 Whole 3lood-C3C-Diff

Name  
 Date  
 Time  
 Status  
 WBC  
 Neu#  
 Lym#  
 Mon#  
 Eos#  
 Bas#  
 Neu%  
 Lym%

15/01/2024 12:34 Printed 4.93 2.92 1.51 0.25 0.21 0.04 59.3 30.6  
 15/01/2024 12:32 Printed 4.79 2.89 1.49 0.16 0.21 0.04 60.3 31.1  
 15/01/2024 12:30 Printed 4.95 3.03 1.52 0.18 0.19 0.03 61.2 30.7  
 15/01/2024 12:29 Transmitted 4.77 2.72 1.55 0.27 0.21 0.02 56.9 32.5  
 15/01/2024 12:28 Transmitted 4.81 2.81 1.54 0.25 0.18 0.03 58.5 31.7  
 15/01/2024 12:27 Transmitted 4.98 2.93 1.55 0.24 0.22 0.04 59.9 31.1  
 15/01/2024 12:25 Transmitted 4.94 2.97 1.53 0.17 0.23 0.02 57.2 31.3  
 15/01/2024 12:24 Transmitted 4.85 2.78 1.58 0.28 0.19 0.02 56.9 31.3  
 15/01/2024 12:23 Printed 4.76 2.71 1.57 0.25 0.21 0.02 55.9 31.3  
 15/01/2024 12:22 Printed 4.68 2.62 1.54 0.30 0.19 0.03 55.9 31.3

Table Review