



RML - Quality Assurance Program (RML - QAP)



HEMATOLOGY

ALL METHOD REPORT

Cycle-11/2022

Round -6

Date: 20/10/2022

Lab Code: 2457

Complete Blood Count (CBC)

Parameters	No. of Participants	Group Mean	Standard deviation (SD)	Uncertainty of Assign Values	Range (± 2 SD)	Your Value	Standard Deviation Index(SDI)
Hb gm/dl	236	11.4	0.4	0.03	10.7-12.2	*14.5	7.8
WBC $\times 10^3/\mu\text{l}$.	234	10.8	2.1	0.17	6.7-14.9	9.1	-0.8
RBC $\times 10^6/\mu\text{l}$.	236	4.0	0.1	0.01	3.75-4.31	*5.25	12.5
Hct%	236	35.4	2.3	0.19	30.8-40.0	42.3	3.0
MCV fl.	236	87.5	4.4	0.36	78.6-96.4	80.5	-1.6
MCH pg.	236	28.3	0.9	0.07	26.5-30.1	27.7	-0.7
MCHC gm/dl	236	32.4	2.0	0.16	28.4-36.4	34.4	1.0
Platelet $\times 10^3/\mu\text{l}$.	236	273.3	22.5	1.83	228.2-318.3	332	2.6

Interpretation of SDI:

SDI Value(+/-)	0 - 0.5	0.6 - 0.9	1.0 - 2.0	2.1 - 2.9	≥ 3
Interpretation	Excellent Performance	Good Performance	Acceptable Performance	Marginal Performance Need Improvement	Unacceptable Performance Needs Urgent action

Peripheral Blood Smear(PBS):

	Your Result	Consensus Result
DLC	Myelo-1, Mmyelo-2, S-2, P-18, L-45, E-31, B-1	P-19.0-47.8 L-16.0-34.1 E-13.0-51.0 M-1.8-6.2
Morphology	RBC- Normocytic normochromic WBC- Total count increased with eosinophilia and eosinophilic shift to left seen Few reactive lymphocytes seen Platelets decreased few giant platelets seen	Δ Normocytic/ Normochromic (174/186) Δ Eosinophilia (161/186) Δ Thrombocytopenia (113/186) Δ Leukocytosis (98/186) Δ Giant platelets (73/186)
Diagnosis	Eosinophilic leukocytosis with thrombocytopenia	Eosinophilia/ Eosinophilic Leukocytosis

Legends	(*) Excluded From Group Mean	{ } Not Reported	(#) Late Result Submission	(\$) Reported in other Unit
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Chief Coordinator

Dr. Sanjay Mehrotra

Prepared by: SS

Checked By: h

Doc. No.: ASS / FR / 06 / R 01 / Dt.: 05.01.2022

Programme Director

Dr. Bandana Mehrotra

End of Report

Page 1 of 5



Address: B-171, Nirala Nagar, Lucknow -226 020. Ph: (0341)00-130 (30 Lines), 4077180, 2788444 Fax: (0522)2788555

Email: rmlresearchfoundation@gmail.com Website: www.rmlpathology.com

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RML - Quality Assurance Program (RML - QAP)



HEMATOLOGY METHOD WISE REPORT

Lab Code: 2457

Cycle-11/2022
Round -6

Date: 20/10/2022

Note: Your lab is not the part of Method Group

Complete Blood Count (CBC)

Parameters	Method Group	No. of Participants	Group Mean	Standard deviation (SD)	Uncertainty of Assign Values	Range (± 2 SD)	Your Value	Standard Deviation Index(SDI)
Hb gm/dl	Photometric	67	11.4	0.4	0.06	10.7-12.2	-	-
WBC $\times 10^3/\mu\text{l}$.	Electrical Impedance	82	11.6	1.3	0.18	9.0-14.2	-	-
RBC $\times 10^6/\mu\text{l}$.	Electrical Impedance	93	4.1	0.2	0.03	3.7-4.4	-	-
Hct%	Calculated	49	35.8	2.6	0.46	30.6-41.1	-	-
MCV fl.	Electrical Impedance	45	87.5	4.3	0.80	79.0-96.0	-	-
MCH pg.	Calculated	94	28.3	1.0	0.13	26.3-30.3	-	-
MCHC gm/dl	Calculated	100	32.3	2.0	0.25	28.3-36.3	-	-
Platelet $\times 10^3/\mu\text{l}$.	Electrical Impedance	91	274.1	23.0	3.01	228.1-320.1	-	-

Interpretation of SDI:

SDI Value(+/-)	0 - 0.5	0.6 - 0.9	1.0 - 2.0	2.1 - 2.9	≥ 3
Interpretation	Excellent Performance	Good Performance	Acceptable Performance	Marginal Performance Need Improvement	Unacceptable Performance Needs Urgent action

Legends	(*) Excluded From Group Mean	(.) Not Reported	(#) Late Result Submission	(\$) Reported in other Unit
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Chief Coordinator

Dr. Sanjay Mehrotra

Checked By:

Prepared By: SSh

Programme Director

Dr. Bandana Mehrotra

End of Report

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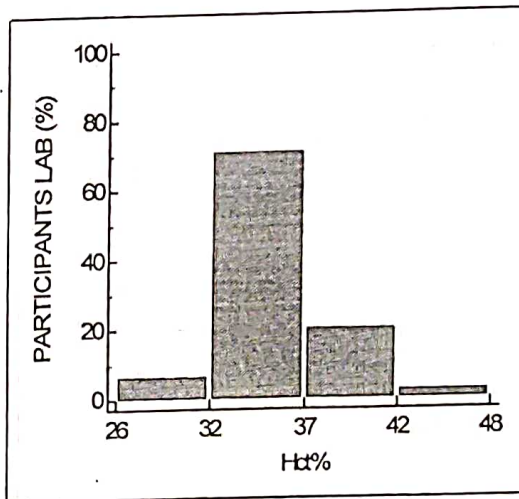
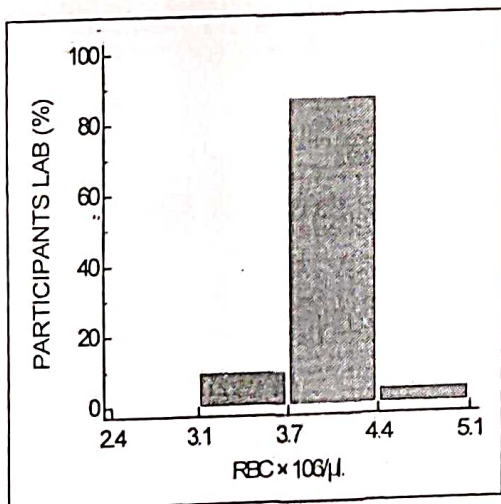
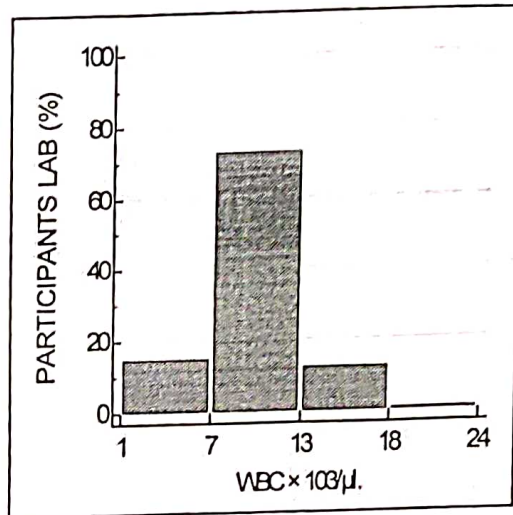
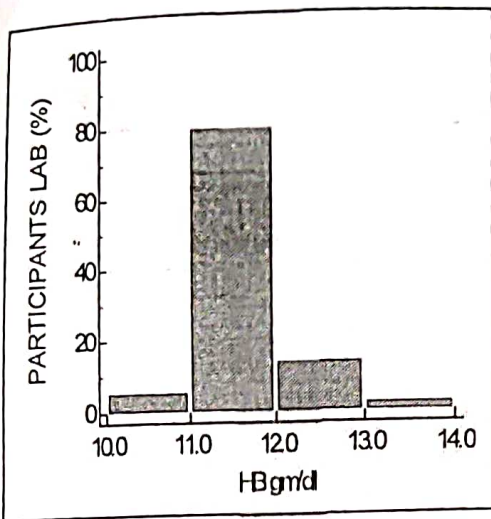


HEMATOLOGY

GRAPHICAL REPORT

Cycle - 11/2022
Round -6

Date: 20/10/2022



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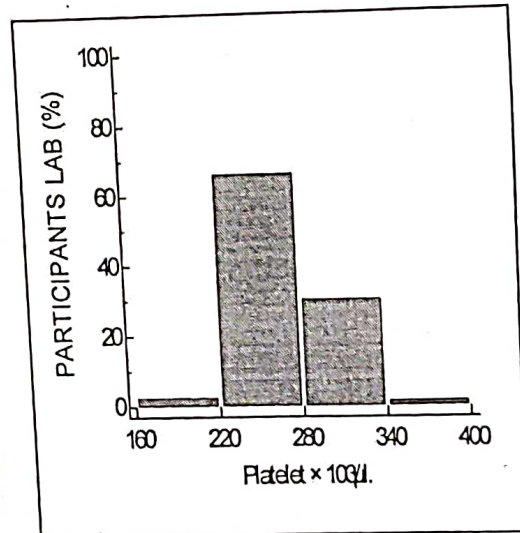
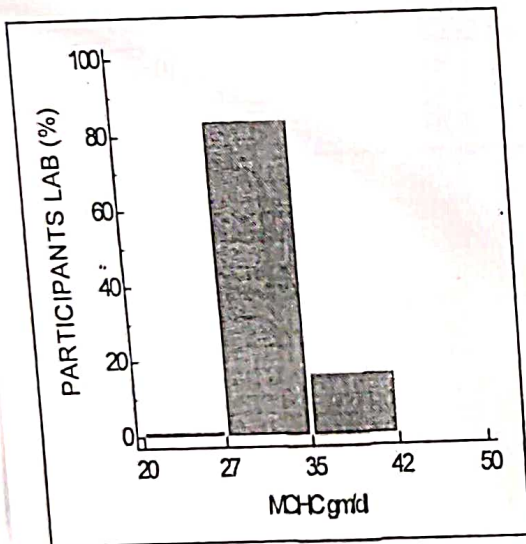
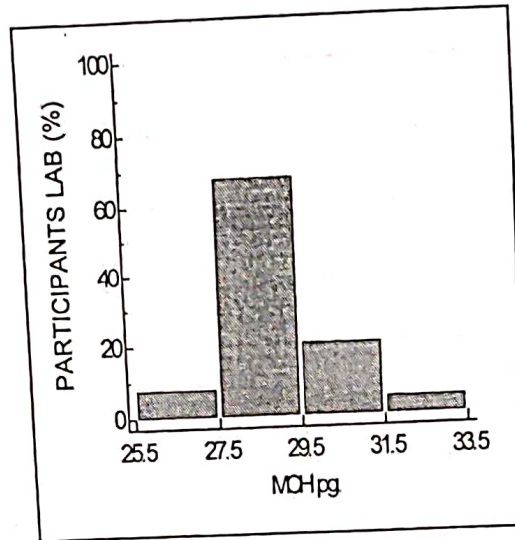
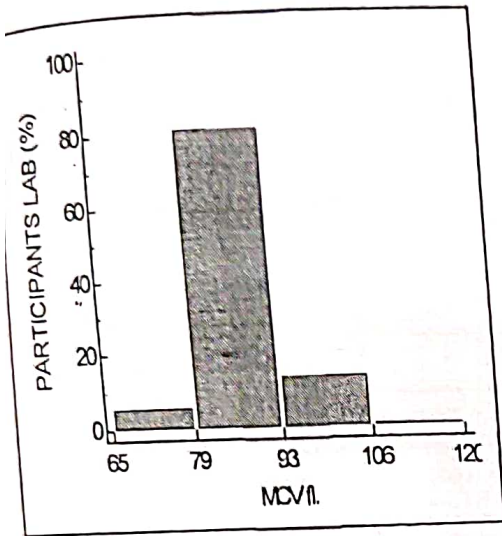
HEMATOLOGY

GRAPHICAL REPORT

Cycle - 11/2022
Round -6

Date: 20/10/2022

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RML - Quality Assurance Program (RML - QAP)



Hematology

ALL PARTICIPANTS COMPLETE DATA REPORT

Cycle - 11/2022

Round No - 6

Date: 20/10/2022

Note:- This report is only for information about the participant's performance in the particular round

Parameters	Total No. of Participants	No. of Responses	No. of Participant Excluded from Group Mean	No. of Participants SDI b/w 0.0 - 2	No. of Participants SDI b/w 2.1 - 2.9	No. of Participants SDI >3
Hb gm/dl	271	236	11	205	8	23
WBC × 10 ³ /μl.	271	234	7	197	25	12
RBC × 10 ³ /μl.	271	236	14	181	31	24
HCT%	271	236	3	216	10	10
MCV fl.	271	236	2	227	6	3
MCH pg.	271	236	4	219	5	12
MCHC gm/dl	271	236	1	225	6	5
Platelet × 10 ³ /μl.	271	236	1	220	9	7

****End of Report****

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Arora

Doc. No.: ASS / FR / 01 / R 00 / Dt.: 01.07.2012



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PT EXCEPTION INVESTIGATION FORM

SURVEY INFORMATION - PROFICIENCY TESTING				
Department Name: <i>Hematology</i>		PT/EQA Provider and #: <i>RMLEQA-ROUNP-06</i>		
Survey Name:	<i>Cycle-11-ROUNP-06</i>	Analyzer Name/Model: <i>Yamizer-H500</i>		
Date Survey Received:	<i>24.09.2022</i>	Date Analysis Performed:	<i>26.09.2022</i>	
Date Survey Results Submitted:	<i>26.09.2022</i>	Date Evaluations Available:	<i>01.11.2022</i>	
Previous Survey Problems (If yes, explain):	—			
Investigation Performed By:	<i>P. Ewar</i>	Date:	<i>02.11.2022</i>	
Unacceptable PT/EQA Panel: Date of Repeat testing:				
Specimen No.	Analyte	Reported Result	Repeated Result	Intended Result/Peer Group
<i>Cycle-11-R-06</i>	<i>HB</i>	<i>14.5</i>	<i>12.1</i>	<i>11.4</i>
<i>Cycle-11-R-06</i>	<i>RBC</i>	<i>5.25</i>	<i>4.58</i>	<i>4.1</i>

ROOT CAUSE ANALYSIS			
PRE-ANALYTICAL ERRORS:	YES	NO	N/A
1. Were proficiency testing materials received in the laboratory without delay? Please describe any delivery issues. Comments:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Were specimens shipped and stored appropriately according to temperature requirements? Comments:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Did all EQA vials arrive intact (i.e. no missing, broken or leaking specimens) If not, did you contact the PT provider? Comments:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Did you prepare/reconstitute/dilute PT specimens as indicated by the kit instructions? Comments:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. If there were special instructions provided in the kit, were they followed? Comments:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Were the correct tests performed on the correct specimen(s)? Comments:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Was routine maintenance of instruments/equipment performed as scheduled (daily, weekly, monthly, etc.)? Comments:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Did you check lot numbers and storage conditions of kits, reagents, and materials used to perform testing on samples? Comments:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Were all expiration dates verified before sample testing (Controls, reagents, etc.)? Comments:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

ANALYTICAL ERRORS:	YES	NO	N/A
1. Did you review the current and past PT event for bias, shifts and trends? If present, were investigations performed and what were the outcomes? Comments:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Did you evaluate the instrument/method for any problems prior to or after the PT event? Describe any problems identified. Comments:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Was the calibration at the time of the PT event reviewed for acceptability? If not acceptable, comment:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. How do you establish your Quality Control (QC) mean and ranges? <input type="checkbox"/> Lab established <input type="checkbox"/> Use manufacturer's Comments:	<input checked="" type="checkbox"/> Not applicable		
5. Were all QC levels for this analyte within acceptable range(s) on the day the survey was run? Comments:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Are Westgard QC rules used? If so which ones? Comments:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Were QC/Levy Jennings charts reviewed for any trends, shifts and/or bias? Comments:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Does your laboratory track precision by monitoring Coefficient of Variation (CV) for this analyte? If yes, was your CV acceptable at the time of the survey? Comments:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

9. If manual calculation was performed for this analyte was it checked for accuracy? (dilutions, formula etc.) Comments:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Are questionable results reviewed by supervisor/pathologist before reporting? Comments:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. Was the instrument or reagent manufacturer contacted? Comments:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
POST ANALYTICAL ERRORS:	YES	NO	N/A
1. Were the results correctly transcribed from the instrument print-out/ worksheets to the PT Result Form? Comments:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Did you verify that the electronic results submitted matched the PT result form (i.e. was the provider website checked for accuracy of results submitted?) Comments:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Were the correct instrument/method/reagentcodes submitted to the PT provider? Comments:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Were the correct units reported? Comments:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Were results reported to the correct decimal place? Comments:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Were your results graded in the appropriate peer group? Comments:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

7. Did you select the correct result code for photographic images and/or microscopic examinations?

<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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Comments:

INVESTIGATIVE ACTIONS AND ROOT CAUSE: Briefly discuss what actions were taken in this investigation and what you believe is the primary cause of this PT problem.

HB, RBC, obtained Results not matched with Pregroup
Repeated TU HB, RBC PT Vary could be Random Error

Subtitled PREGROUP

Was Personnel training/competency reviewed? Staff education or re-training conducted, as appropriate?

Comments:

Type of Error:

- Methodological Survey evaluation problem
- Technical
- Clerical
- _____
- Others (explain) Random Error

FUTURE PREVENTATIVE MEASURES/ ACTIONS: Briefly discuss how you will prevent this problem from occurring in the future.

Daily QC has been passed, but Hb, RBC results
Random Error, shall be monitoring further. Machine
has been calibrated.

[Signature]
Investigated by:
(Sign & date)

[Signature]
Lab Director
(Sign & date)

[Signature]
Verified by QM
(Sign & date)

Table for supporting documents:

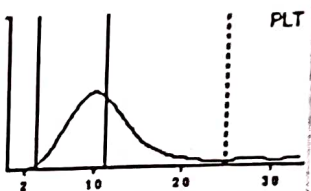
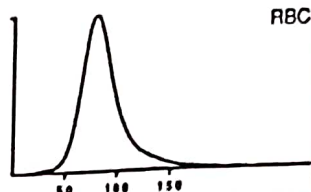
Attachment	Description of attachments
HB	Repeated Results are attached
RBC	Repeated Results are attached.

Results

Run Date 02/11/2022 09:35:25 AM
 Last Name
 First Name
 Gender
 Patient ID
 Date of birth
 Sample comments

Operator TENET
 Sample ID RMLQAPCYCLE11-6
 Department
 Physician
 Type Standard

				Range
RBC	4.58	*	10 ⁶ /μL	3.80 - 6.00
HGB	12.1		g/dL	11.5 - 17.0
HCT	40.4	*	%	35.0 - 52.0
MCV	88.2	*	μm ³	76.0 - 100.0
MCH	26.4	I	pg	27.0 - 34.0
MCHC	30.0	L	g/dL	32.0 - 35.0
RDW-CV	18.8	H	%	11.0 - 17.0
RDW-SD	58.0	H	μm ³	37.0 - 49.0
PLT				
PLT	314	*	10 ³ /μL	150 - 400
PCT	0.37	*	%	0.15 - 0.40
MPV	11.9	h*	μm ³	8.0 - 11.0
PDW	14.1	*	μm ³	11.0 - 22.0
P-LCC	127		10 ³ /μL	44 - 140
P-LCR	40.6		%	18.0 - 50.0



Recommended actions

- Slide review
- Susp. Pathologies
- Anisocytosis
- PLT aggregate ?
- Lymphopenia
- Eosinophilia
- Extrem neutropenia

				Range
WBC	7.77	*	10 ³ /μL	3.50 - 10.00
DIF				
	#		Range	%
NEU	0.41	L*	1.60 - 7.00	5.3 I*
LYM	0.05	L*	1.00 - 3.00	0.6 I*
MON	0.00	I*	0.20 - 0.80	0.1 I*
EOS	7.23	H*	0.00 - 0.50	93.9 h*
BAS	0.00	*	0.00 - 0.15	0.1 *
LIC	0.08	*	0.00 - 0.10	1.0 *



Slide Review

- | | | |
|---------------------|---------------|-----------------|
| Neutrophil | Myeloblast | Anisocytosis |
| Lymphocyte | Promyelocyte | Hypochromia |
| Monocyte | Myelocyte | Polychromasia |
| Eosinophil | Metamyelocyte | Poikilocytosis |
| Basophil | Blast | Microcytosis |
| Atypical Lymphocyte | Target Cell | Macrocytosis |
| Other | Sickle Cell | Platelet Clumps |

Reviewed on 02/11/2022 by TENET Signature: TENET