PROFICIENCY TESTING REPORT

ISHTM-AIIMS EXTERNAL QUALITY ASSURANCE PROGRAMME
NABL accredited program as per ISO/IEC 17043:2010 standard
Organized By Department of Hematology, AIIMS, New Delhi-110029

Duration of stability testing - minimum upto 8 days at ambient temp. after dispatch of specimens

EQAP CODE No. : 2180 **Distribution No.:** 158-F **Month/Year:** December/2022

Instrument ID: A6927

Name & Contact No. of PT Co-ordinator: Dr. Seema Tyagi (Prof.), Hematology, AIIMS, Delhi, Tel: 9013085730 , E-Mail : accuracy2000@gmail.com

Date of issue & status of the report: 23-01-2023[Final].

CBC and Retic Assessment

Test Parameters	S.No.			Among Lab (Accuracy Testing)				Within Lab (Precision Testing)			
		Your Result 1	Your Result 2	Your Results Sum of 2 Value	Consensus result sum of 2 values (Assigned Value)	Uncertainty of Assigned Values	Z Score	Yours Results Diff. of 2 Values	Consensus Result Diff. of 2 values (Assigned Value)	Uncertainty of Assigned Values	Z Score
WBC x10³/µl	1	10.2	9.4	19.6	18.2	0.0730	0.67	0.8	0.12	0.0090	8.34
RBC x10⁶/µl	1	4.53	4.5	9.03	9.11	0.0100	-0.33	0.03	0.04	0.0030	-0.27
Hb g/dl	1	12.7	12.5	25.2	25.8	0.0220	-1.16	0.2	0.1	0.0080	1.35
HCT%	1	41.3	41.1	82.4	84.35	0.2260	-0.33	0.2	0.4	0.0260	-0.54
MCV-fl	1	91.3	91.2	182.5	185.4	0.4410	-0.23	0.1	0.2	0.0210	-0.34
MCH-Pg	1	28	27.8	55.8	56.4	0.0550	-0.45	0.2	0.2	0.0140	0.00
MCHC-g/dl	1	30.8	30.4	61.2	60.7	0.1560	0.11	0.4	0.2	0.0160	0.90
Plt. x10³/µl	1	198	196	394	373	1.71	0.46	2	5	0.32	-0.58
Retic %	2	12	11	23	27	0.63	-0.23	1	1	0.06	0.00

P.S . Assesment

		YOUR REPORT	CONSENSUS REPORT
DLC%	3	Nrbcs=05 , Poly=44 L=07, E=02, Mono/Promono=01 , B1=06 P.M.=02, Mye=27, Meta=10, Other=	Poly: 49 - 67, Myelo: 10 - 19, Meta: 6- 14, Lympho: 2- 6, Eosino: 0 2, Promyelo: 1-5, nRBC/Blast/Baso/Mono: 0 - 5
RBC Morphology	3	normocytic normochromic	Predominantly: Normocytic/Normochromic; Moderate: Anisocytosis, hypochromia, Microcytosis; Mild: Macrocytosis, Poikilocytosis
Diagnosis	3	chronic myelogenous leukemia	Chronic Myeloid Leukemia (Chronic Phase)

CAPA Attached

COMBINED DATA VALUES OF TOTAL PARTICIPANTS

Test parameters	S.No.	Total participants covered in the current dist. 158--F	Total No. responded	% of Labs with Z Score 0-2		% of Labs with Z Score 2-3		% of Labs with Z Score >3	
				Among labs	Within lab	Among labs	Within lab	Among labs	Within lab
WBC $x10^3/\mu l$	1	296	295	87.46	88.81	5.42	5.08	7.12	6.11
RBC $x10^6/\mu l$	1	296	296	83.78	92.23	9.46	3.38	6.76	4.39
Hb g/dl	1	296	296	82.77	89.53	8.45	6.08	8.78	4.39
HCT%	1	296	294	95.92	94.22	3.06	2.04	1.02	3.74
MCV-fl	1	296	294	97.62	93.2	1.7	2.04	0.68	4.76
MCH-Pg	1	296	294	85.03	91.16	7.14	3.4	7.83	5.44
MCHC-g/dl	1	296	294	97.28	92.86	1.36	3.74	1.36	3.4
Plt. $x10^3/\mu l$	1	296	294	94.22	91.84	4.76	4.42	1.02	3.74
ReticCount%	2	296	265	92.83	93.58	4.53	2.64	2.64	3.78
PS Assessment	3	296	265	Satisfactory :92.21%, Borderline Sat. :3.05%, Unsatisfactory :4.74%					

Comments:

1). Among Lab (EQA) : **Results acceptable.**

2). Within Lab (IQA) : **Difference in the CBC measurement values for WBC unacceptable, may be due to random/human error.**

Note-1: EQA (External Quality Assurance) : Your Performance among various of participating labs in PT, to determine the accuracy of your results.
IQA (Internal Quality Assurance) : Your Performance of comparison of two consecutive measurement values within your lab to test the precision of your autoanalyzer.

Note-2: Z score among & within lab were calculated, as per to ISO/IEC 13528:2015 standard. Z score among lab (EQA)= (Your Result Sum of two values - Consensus Result sum of two values)/(Normalised IQR)
Z score within lab (IQA)= (Your Result Difference of two values - Consensus Result difference of two values)/(Normalised IQR)
IQR = Quartile 3 - Quartile 1 of participant data, Normalised IQR = 0.7413 x IQR

Note-3: Z score 0 to ±2: Acceptable, Z score ±2 to ±3 :Warning Signal, Z score > ±3 : Unacceptable [As per ISO/IEC 13528:2015 standard]

Note-4: Z score value between"0 to ±2" are texted in green colour. Z score value between"±2 to ±3" are texted in orange colour. Z score value > ±3 are texted in red colour.

Note-5: Homogeneity and stability testing of PT sample were done as per ISO 13528:2015 standard. To pass homogeneity test, between sample SD (Ss) should be smaller than the check value (0.3*SDPA). To pass the stability test, average difference in measurement values of first and last day sample ($\bar{x}$-$\bar{y}$) should be smaller than the check value (0.3*SDPA).

Note-6: ISHTM-AIIMS-EQAP does not subcontract any task of its scheme

Note-7: Participants are free to use methods/analyzer of their own choice.

Note-8: Proficiency testing (PT) samples are sent quarterly to each participant.

Note-9: All the necessary details regarding design and implementation of PT, are provided in the instruction sheet as well as on programme's website www.ishtmaiimseqap.com.

Note 10: Reports are kept confidential.

Report authorized by,

Dr. Seema Tyagi (Prof.)
PT Co-ordinator: ISHTM-AIIMS-EQAP
Department of Hematology, AIIMS, New Delhi

----------End Of Report----------

GLOBAL PATHOLOGY CENTRE,HARI NAGAR

EQAS EVALUATION FORMAT Doc. No. GPC/FR/65

EQAS Sample details	Bio-Rad/CMC/AIIMS EQAS	Sample: Lyophilized/Liquid		
EQAS Lot No.	158F	Received on:		Received By : Babli
CAPA Date:	14/4/2023	Cycle No:		Month: December 2022
Date reconstituted:	NA	Reconstituted By :	NA	
Date & Time of Analysis:				
Aliquot preserved on :				
Results received on :	25/01/2023			

Criteria for outlier SDI/Z score : > 3.0 and Repetition of score >2.0(2 Consecutive cycle)

Parameter outside:	TLC	SDI/Z score:	8.34	Method:
Peer group result:		Lab Result:		
Internal QC data:	Low	High	Normal ✓	
Date:				
LJ chart findings:	OK			

Cause of error detected in Lab (Pls Tick)

1) Method problem : Calibration failure, Inadequate maintenance, deterioration of reagent, ok

Deterioration of component, environmental factors. ok

2) Procedure problem: Incorrect dilution, Incorrect calculation. ok

3) PT sample handling: Cold chain & storage, Reconstitution, Mixing error. ok

4) Incorrect Reporting: Incorrect conversion of units, Incorrect method, transcription errors. ok

5) Problem with PT material: Unstable analyte, Interfering substance. ok

Systematic Error		Transcription Error			Random error ✓	

Corrective Action Taken:

Retained sample run :		ILC: ✓	Done for P/C.	PRECISION: ✓
New Z score:		%Variation:	Satisfactory	14/4/2023

Preventive action taken:

Will take care during sample processing in future. Satisfactory

14/4/2023

14/4/2023.

GLOBAL PATHOLOGY CENTRE, Hari Nagar

PRECISION CHECK

HAEMATOLOGY-H560

SL No.	DATE	TLC	RBC	HB	PCV	MCV	MCH	MCHC	PLT
1	**14/04/2023**	5.3	3.47	11.6	35.2	101.4	33.4	33	146
2		5.6	3.43	11.8	35	102	34.4	33.7	140
3		5.2	3.44	11.7	34.9	101.5	34	33.5	139
4		5.4	3.45	11.8	35.1	101.5	34.2	33.6	134
5		5.4	3.44	11.8	35	101.7	34.3	33.7	139
	MEAN	**5.38**	**3.446**	**11.74**	**35.04**	**101.62**	**34.06**	**33.5**	**139.6**
	SD	0.15	0.02	0.09	0.11	0.24	0.40	0.29	4.28
	CV%	2.8	0.4	0.8	0.3	0.2	1.2	0.9	3.1

Acceptance Criteria: <10% of CV

Prepared By:Quality Manager

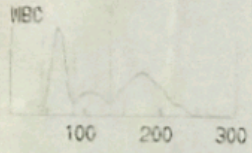
Approved By: Lab Director

10

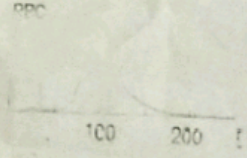
Operator

ID. 1
Date 14/04/2023
Time 11:06
Mode WB

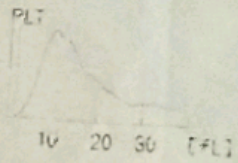
WBC	5.3	×10³/μL
RBC	3.47	×10⁶/μL
HGB	11.6	g/dL
HCT	35.2	%
MCV	101.4	fL
MCH	33.4	pg
MCHC	33.0	g/dL
PLT AG*	146	×10³/μL



LYM%	34.7	%
MXD%	15.5	%
NEUT%	49.8	%
LYM#	1.8	×10³/μL
MXD#	0.8	×10³/μL
NEUT#	2.7	×10³/μL



RDW-SD	53.7	fL
RDW-CV	14.3	%



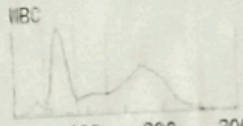
PDW	+	23.1	fL
MPV	+	14.4	fL
P-LCR	+	58.0	%
PCT	*	0.21	%
ResearchW		5.322	×10³/μL
ResearchS		1.089	×10³/μL
ResearchM		0.892	×10³/μL

10

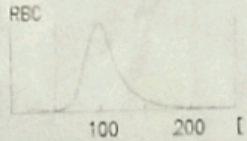
Operator

ID. 2
Date 14/04/2023
Time 11:07
Mode WB

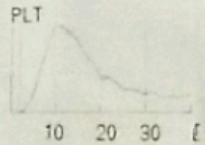
WBC	5.6	×10³/μL
RBC	3.43	×10⁶/μL
HGB	11.8	g/dL
HCT	35.0	%
MCV	102.0	fL
MCH	34.4	pg
MCHC	33.7	g/dL
PLT AG*	140	×10³/μL



LYM%	34.3	%
MXD%	12.7	%
NEUT%	53.0	%
LYM#	1.9	×10³/μL
MXD#	0.7	×10³/μL
NEUT#	3.0	×10³/μL



RDW-SD	53.6	fL
RDW-CV	14.3	%



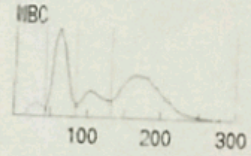
PDW	DW	---.-	fL
MPV	DW	---.-	fL
P-LCR	DW	---.-	%
PCT	DW	--.---	%
ResearchW		5.566	×10³/μL
ResearchS		1.321	×10³/μL
ResearchM		0.711	×10³/μL
ResearchL		2.934	×10³/μL

10 Precision

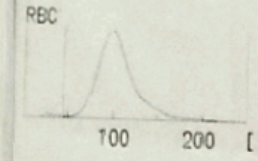
Operator

ID. 3
Date 14/04/2023
Time 11:08
Mode WB

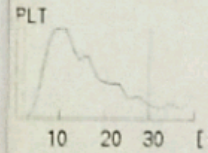
WBC	5.2	×10³/μL
RBC	3.44	×10⁶/μL
HGB	11.7	g/dL
HCT	34.9	%
MCV	101.5	fL
MCH	34.0	pg
MCHC	33.5	g/dL
PLT AG*	139	×10³/μL



LYM%	34.0	%
MXD%	16.0	%
NEUT%	50.0	%
LYM#	1.8	×10³/μL
MXD#	0.8	×10³/μL
NEUT#	2.6	×10³/μL



RDW-SD	+ 55.8	fL
RDW-CV	14.3	%



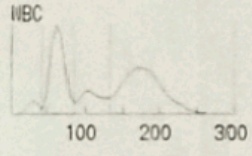
PDW	+	24.8	fL
MPV	+	14.4	fL
P-LCR	+	56.1	%
PCT	*	0.20	%
ResearchW		5.184	×10³/μL
ResearchS		1.768	×10³/μL

10

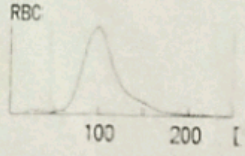
Operator

ID. 4
Date 14/04/2023
Time 11:09
Mode WB

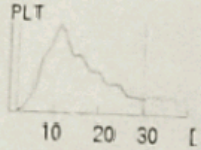
WBC	5.4	×10³/μL
RBC	3.45	×10⁶/μL
HGB	11.8	g/dL
HCT	35.1	%
MCV	101.7	fL
MCH	34.2	pg
MCHC	33.6	g/dL
PLT AG*	134	×10³/μL



LYM%	33.2	%
MXD%	14.7	%
NEUT%	52.1	%
LYM#	1.8	×10³/μL
MXD#	0.8	×10³/μL
NEUT#	2.8	×10³/μL



RDW-SD	+ 54.3	fL
RDW-CV	14.6	%



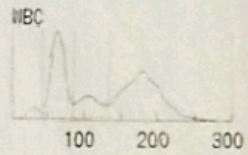
PDW	+	24.1	fL
MPV	+	14.8	fL
P-LCR	+	60.0	%
PCT	*	0.20	%
ResearchW		5.390	×10³/μL
ResearchS		1.793	×10³/μL

10

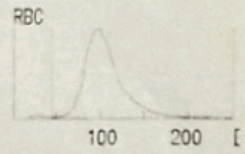
Operator

ID. 5
Date 14/04/2023
Time 11:10
Mode WB

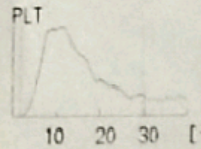
WBC	5.4	×10³/μL
RBC	3.44	×10⁶/μL
HGB	11.8	g/dL
HCT	35.0	%
MCV	101.7	fL
MCH	34.3	pg
MCHC	33.7	g/dL
PLT *	139	×10³/μL



LYM%	33.9	%
MXD%	14.9	%
NEUT%	51.2	%
LYM#	1.8	×10³/μL
MXD#	0.8	×10³/μL
NEUT#	2.8	×10³/μL



RDW-SD	+ 54.3	fL
RDW-CV	14.6	%



PDW	DW	---.-	fL
MPV	DW	---.-	fL
P-LCR	DW	---.-	%
PCT	DW	--.---	%
ResearchW		5.411	×10³/μL