

# SUMMARY STATISTICS

## EQA round: DIF3/21 - Peripheral Blood Morphology Evaluation

Deadline (EQA round closed): 17.09.2021

Key:	ELG ... expert laboratories group	> ... possible result (found by ELG, but consensus not reached)
	AV, >>> ... assigned value type CVE (consensus of ELG)	
	RAR ... range of acceptable results	
	RoM ... robust average of all results	

	Sample A			Sample B		
	AV	RAR	RoM	AV	RAR	RoM
<b>WBC - differential count</b>						
Blasts	0	0,000 - 0,018	0,000	0	0,000 - 0,018	0,000
Promyelocytes	0	0,000 - 0,018	0,000	0	0,000 - 0,018	0,000
Neutrophil myelocytes	0	0,000 - 0,018	0,000	0	0,000 - 0,018	0,000
Neutrophil metamyelocytes	0	0,000 - 0,018	0,000	0	0,000 - 0,018	0,000
Neutrophil bars	0,013	0,003 - 0,043	0,015	0,008	0,000 - 0,036	0,019
Segmented neutrophil granulocytes	0,190	0,138 - 0,251	0,177	0,737	0,668 - 0,795	0,734
Eosinophils - immature forms	0	0,000 - 0,018	0,000	0	0,000 - 0,018	0,000
Eosinophil segmented granulocytes	0,010	0,000 - 0,036	0,011	0,018	0,005 - 0,050	0,016
Basophilic granulocytes	0	0,000 - 0,018	0,000	0,005	0,000 - 0,028	0,002
Monocytes	0,090	0,050 - 0,139	0,096	0,046	0,021 - 0,084	0,043
Lymphocytes	0,697	0,626 - 0,758	0,696	0,189	0,138 - 0,251	0,181
Plasma cells	0	0,000 - 0,018	0,000	0	0,000 - 0,018	0,000
Erythroblasts (number)	1,000	0,000 - 4,000	0,703	0	0,000 - 2,000	0,000

### Sample A

### Sample B

#### WBC - morphology

1	No changes	0,8 %	>>> 90	No changes	74 %
5	Hypergranulation/toxic granulation	4,1 %	3	Hypergranulation/toxic granulation	2,5 %
1	Agranulation	0,8 %	2	Agranulation	1,6 %
5	Hyposegmentation / asegmentation / pelgeroid	4,1 %	7	Hypersegmented granulocytes	5,7 %
12	Atypical/reactive/pathological monocytes/promono.	9,8 %	2	Hyposegmentation / asegmentation / pelgeroid	1,6 %
> 60	Denuded nuclei/cells, nuclear shadows / smudge cells	49 %	2	Denuded nuclei/cells, nuclear shadows / smudge cells	1,6 %
1	Cytoplasmatic fragments	0,8 %	2	Vacuolisation	1,6 %
>>> 81	Vacuolisation	66 %	4	LGL/big lymphocytes	3,3 %
10	LGL/big lymphocytes	8,2 %	16	Lymphocytes - reactive forms	13 %
33	Lymphocytes - reactive forms	27 %	4	Lymphocytes - atypical forms (except "hairy")	3,3 %
>>> 117	"Hairy" lymphocytes	96 %	1	Nucleus fragments of neutrophiles	0,8 %
18	Lymphocytes - atypical forms (except "hairy")	15 %			

#### WBC - relative changes of count

>>> 118	Neutropenia	97 %	22	Normal count	18 %
>>> 120	Lymphocytosis	98 %	> 94	Neutrophilia	77 %
1	Eosinophilia	0,8 %	> 82	Lymphocytopenia	67 %
> 39	Monocytosis	32 %	1	Basophilia	0,8 %
6	Left shift	4,9 %	2	Left shift	1,6 %

#### RBC - morphology

1	No changes	0,8 %	3	No changes	2,5 %
5	Normocytosis	4,1 %	4	Normocytosis	3,3 %
1	Macrocytosis	0,8 %	>>> 109	Microcytosis	89 %
>>> 109	Anisocytosis	89 %	4	Anisocytosis	3,3 %
7	Poikilocytosis	5,7 %	2	Poikilocytosis	1,6 %
>>> 84	Eliptocytes, ovalocytes	69 %	5	Eliptocytes, ovalocytes	4,1 %
28	Spherocytes	23 %	3	Spherocytes	2,5 %
> 32	Stomatocytes	26 %	> 34	Stomatocytes	28 %
1	Drepanocytes	0,8 %	1	Dacryocytes	0,8 %
>>> 86	Dacryocytes	70 %	1	Echinocytes	0,8 %
1	Acanthocytes	0,8 %	5	Target cells	4,1 %
6	Echinocytes	4,9 %	4	Schistocytes (and other fragmentocytes)	3,3 %
12	Target cells	9,8 %	3	Polychromasia	2,5 %
> 31	Schistocytes (and other fragmentocytes)	25 %	>>> 98	Hypochromia	80 %
17	Polychromasia	14 %	1	Basophilic stippling	0,8 %

## Sample A

## Sample B

## RBC - morphology

>	22	Hypochromia	18 %	11	Rouleaux formation	9,0 %
	7	Basophilic stippling	5,7 %			
	6	Howell-Jolly bodies	4,9 %			
	4	Rouleaux formation	3,3 %			
	1	Pappenheimer bodies	0,8 %			
	1	RBC agglutination	0,8 %			

## Platelets - morphology

	15	No changes	12 %	>	58	No changes	48 %
>>>	101	Large platelets	83 %	>	59	Large platelets	48 %
	8	Small platelets	6,6 %		13	Small platelets	11 %
	1	Platelet aggregates	0,8 %		2	Platelet aggregates	1,6 %
	19	Platelets hypogranulation	16 %		3	Platelets hypogranulation	2,5 %
	1	Megakaryocytic nucleus fragments	0,8 %				

## Clinical recommendation - smear

>>>	120	Blood smear is pathological	98 %	>>>	77	Blood smear is pathological	63 %
	2	Blood smear within physiological limits or with reactive changes	1,6 %		44	Blood smear within physiological limits or with reactive changes	36 %

## Clinical recommendation - examination

>>>	120	An examination by the specialist/haematologist is recommended	98 %	>	55	An examination by the specialist/haematologist is recommended	45 %
	2	An examination by the specialist/haematologist is not necessary	1,6 %	>	66	An examination by the specialist/haematologist is not necessary	54 %

## Diagnosis - anaemia

	9	Exact determination impossible	7,4 %
	2	Normocytosis	1,6 %
>>>	97	Microcytosis	80 %
>	55	Hypochromia	45 %
	1	Haemolytic	0,8 %

## Diagnosis - myelodysplastic syndrome

	1	Myelodysplastic syndrome	0,8 %
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## Diagnosis - mature lymphocytic cells neoplasms

>	13	Exact determination impossible	11 %	1	Exact determination impossible	0,8 %
	2	CLL (chronic lymphocytic leukaemia)	1,6 %			
>>>	112	HCL (hairy cell leukaemia)	92 %			

## Diagnosis - platelets disorders

	26	Thrombocytopenia	21 %	1	Thrombocytosis	0,8 %
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## Diagnosis - other

	1	Viral infection incl. inf. mononucleosis	0,8 %	1	Viral infection incl. inf. mononucleosis	0,8 %
	2	Other reactive changes	1,6 %	1	Parasitic infection	0,8 %
	1	Other disease	0,8 %	9	Other reactive changes	7,4 %
				5	Other disease	4,1 %

## Smear quality

	117	Acceptable	96 %	117	Acceptable	96 %
	4	Not acceptable (give a reason)	3,3 %	4	Not acceptable (give a reason)	3,3 %

## Staining

	120	Acceptable	98 %	121	Acceptable	99 %
	1	Not acceptable (give a reason)	0,8 %			

## Evaluation of the results - scoring system

## DIF3/21

## Sample A

## Maximal achievable score: 99

Successful participants (success 60 % and more): 121 (it is 99 %)

Minimal success in this round: 50,5 %

Maximal success in this round: 100,0 %

## Sample B

## Maximal achievable score: 63

Successful participants (success 60 % and more): 118 (it is 97 %)

Minimal success in this round: 39,7 %

Maximal success in this round: 100,0 %

## Number of participants: 122

in both samples: 117 (it is 96 %)

Number of the participants that succeeded: in one sample: 5 (it is 4 %)

in no sample: 0 (it is 0 %)