

SUMMARY STATISTICS

EQA round: DIF3/17 - Peripheral Blood Morphology Evaluation

Dead line (EQA round closed): 28.07.2017

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
WBC - differential count						
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	0,002	0	0,000 - 0,018	0,000
Neutrophil bars	0,075	0,010 - 0,130	0,129	0,013	0,000 - 0,043	0,014
Segmented neutrophil granulocytes	0,598	0,529 - 0,668	0,512	0,590	0,518 - 0,659	0,597
Eosinophil granulocytes - immature forms	0	0,000 - 0,018	0,003	0	0,000 - 0,018	0,000
Eosinophil segmented granulocytes	0,027	0,008 - 0,057	0,021	0,014	0,003 - 0,043	0,015
Basophilic granulocytes	0,005	0,000 - 0,028	0,005	0,008	0,001 - 0,036	0,007
Monocytes	0,065	0,035 - 0,109	0,063	0,046	0,021 - 0,084	0,040
Lymphocytes	0,248	0,192 - 0,316	0,256	0,321	0,256 - 0,389	0,325
Plasma cells	0	0,000 - 0,018	0,000	0	0,000 - 0,018	0,000
Erythroblasts (number)	0	0,000 - 2,000	0,000	0	0,000 - 2,000	0,000

Sample A

Sample B

WBC - morphology

2	No changes	1,4 %	> 27	No changes	19 %
1	Giant bands and metamyelocytes	0,7 %	36	Hypergranulation/toxic granulation	25 %
> 56	Hypogranulation/agranulation	39 %	4	Hypogranulation/agranulation	2,8 %
2	Hypersegmented granulocytes	1,4 %	19	Hypersegmented granulocytes	13 %
>>> 136	Hyposegmentation or pseudo Pelger anomaly	96 %	2	Döhle bodies	1,4 %
2	Döhle bodies	1,4 %	4	Atypical/reactive monocytes	2,8 %
5	Atypical/reactive monocytes	3,5 %	33	Denuded nuclei/cells, nuclear shadows / smudge cells	23 %
16	Denuded nuclei/cells, nuclear shadows / smudge cells	11 %	>>> 68	Vacuolisation	48 %
> 54	Vacuolisation	38 %	19	LGL/big lymphocytes	13 %
2	LGL/big lymphocytes	1,4 %	> 44	Lymphocytes - reactive forms	31 %
> 62	Lymphocytes - reactive forms	44 %	1	"Hairy" lymphocytes	0,7 %
6	Lymphocytes - atypical forms	4,2 %	18	Lymphocytes - atypical forms	13 %
			1	Nucleus fragments of neutrophils	0,7 %

WBC - relative changes of count

> 50	Normal count	35 %	>>> 115	Normal count	81 %
10	Neutropenia	7,0 %	6	Neutrophilia	4,2 %
2	Neutrophilia	1,4 %	1	Lymphocytosis	0,7 %
2	Lymphocytopenia	1,4 %	2	Eosinophilia	1,4 %
1	Eosinophilia	0,7 %	10	Basophilia	7,0 %
1	Basophilia	0,7 %	1	Monocytosis	0,7 %
2	Monocytosis	1,4 %	2	Monocytopenia	1,4 %
> 90	Left shift	63 %	3	Left shift	2,1 %

RBC - morphology

5	Normocytosis	3,5 %	>>> 42	No changes	30 %
>>> 133	Microcytosis	94 %	> 58	Normocytosis	41 %
1	Macrocytosis	0,7 %	10	Macrocytosis	7,0 %
11	Anisocytosis	7,7 %	13	Anisocytosis	9,2 %
13	Poikilocytosis	9,2 %	5	Poikilocytosis	3,5 %
> 36	Elliptocytes, ovalocytes	25 %	3	Elliptocytes, ovalocytes	2,1 %
4	Spherocytes	2,8 %	10	Spherocytes	7,0 %
28	Stomatocytes	20 %	40	Stomatocytes	28 %
> 70	Dacryocytes	49 %	50	Dacryocytes	35 %
4	Echinocytes	2,8 %	5	Target cells	3,5 %
> 36	Target cells	25 %	15	Polychromasia	11 %
8	Schistocytes (and other fragmentocytes)	5,6 %	> 31	Basophilic stippling	22 %

Sample A			Sample B		
RBC - morphology					
1	Polychromasia	0,7 %	18	Howell-Jolly bodies	13 %
>>> 95	Hypochromia	67 %	2	Rouleaux formation	1,4 %
> 40	Basophilic stippling	28 %	4	Pappenheimer bodies	2,8 %
7	Howell-Jolly bodies	4,9 %			
6	Rouleaux formation	4,2 %			
2	Pappenheimer bodies	1,4 %			
Platelets - morphology					
> 66	No changes	46 %	> 50	No changes	35 %
> 71	Large platelets	50 %	> 78	Large platelets	55 %
10	Small platelets	7,0 %	6	Small platelets	4,2 %
6	Platelet aggregates	4,2 %	4	Platelet aggregates	2,8 %
12	Platelets hypogranulation	8,5 %	2	Platelet satellitism	1,4 %
			> 34	Platelets hypogranulation	24 %
			1	Megakaryocytic nucleus fragments	0,7 %
Clinical recommendation - smear					
>>> 128	Blood smear is pathological	90 %	25	Blood smear is pathological	18 %
14	Blood smear within physiological limits or with reactive changes	9,9 %	>>> 117	Blood smear within physiological limits or with reactive changes	82 %
Clinical recommendation - examination					
>>> 125	An examination by the specialist/haematologist is recommended	88 %	27	An examination by the specialist/haematologist is recommended	19 %
17	An examination by the specialist/haematologist is not necessary	12 %	>>> 115	An examination by the specialist/haematologist is not necessary	81 %
Diagnosis - anaemia					
6	Exact determination impossible	4,2 %			
22	Microcytosis	15 %			
9	Hypochromia	6,3 %			
12	Thalassemia or other haemoglobinopathies	8,5 %			
Diagnosis - acute leukaemia					
1	Without closer determination	0,7 %			
Diagnosis - myelodysplastic syndrome					
11	Myelodysplastic syndrome	7,7 %			
Diagnosis - chronic myeloproliferative disease					
1	Exact determination impossible	0,7 %			
1	Myelofibrosis	0,7 %			
Diagnosis - mature lymphocytic cells neoplasms					
			5	Exact determination impossible	3,5 %
			2	Other findings	1,4 %
Diagnosis - platelets disorders					
			1	Other findings	0,7 %
Diagnosis - other					
3	Viral infection	2,1 %	9	Viral infection	6,3 %
17	Other reactive changes	12 %	1	Parasitic infection	0,7 %
>>> 81	Other findings	57 %	>>> 81	Other reactive changes	57 %
			26	Other findings	18 %
Smear quality					
115	Acceptable	81 %	120	Acceptable	85 %
25	Not acceptable	18 %	20	Not acceptable	14 %
Staining					
124	Acceptable	87 %	127	Acceptable	89 %
12	Not acceptable	8,5 %	9	Not acceptable	6,3 %

Evaluation of the results - scoring system

DIF3/17

Sample A	Sample B
Maximal achievable score: 69	Maximal achievable score: 69
Successful participants (success 60 % and more): 136 (it is 96 %)	Successful participants (success 60 % and more): 122 (it is 86 %)
Minimal success in this round: 46,4 %	Minimal success in this round: 37,7 %
Maximal success in this round: 100,0 %	Maximal success in this round: 100,0 %
Number of participants: 142	
in both samples: 116 (it is 82 %)	
Number of participants that succeeded:	in one sample: 26 (it is 18 %)
	in no sample: 0 (it is 0 %)