

SUMMARY STATISTICS

EQA round: DIF2/18 - Peripheral Blood Morphology Evaluation

Dead line (EQA round closed): 25.05.2018

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	0,145	0,099 - 0,202	0,111	0	0,000 - 0,018	0,000
Promyelocytes	0	0,000 - 0,018	0,000	0	0,000 - 0,018	0,000
Neutrophil myelocytes	0,009	0,001 - 0,036	0,009	0	0,000 - 0,018	0,000
Neutrophil metamyelocytes	0,008	0,000 - 0,036	0,010	0	0,000 - 0,018	0,000
Neutrophil bars	0,042	0,017 - 0,077	0,043	0,009	0,000 - 0,036	0,011
Segmented neutrophil granulocytes	0,164	0,116 - 0,224	0,178	0,659	0,590 - 0,725	0,646
Eosinophil granulocytes - immature forms	0,001	0,000 - 0,018	0,001	0	0,000 - 0,018	0,000
Eosinophil segmented granulocytes	0,021	0,005 - 0,050	0,021	0,028	0,011 - 0,064	0,029
Basophilic granulocytes	0,017	0,003 - 0,043	0,015	0,006	0,000 - 0,028	0,007
Monocytes	0,263	0,205 - 0,332	0,244	0,047	0,021 - 0,084	0,050
Lymphocytes	0,339	0,275 - 0,410	0,349	0,253	0,196 - 0,321	0,254
Plasma cells	0	0,000 - 0,018	0,000	0	0,000 - 0,018	0,000
Erythroblasts (number)	1,000	0,000 - 4,000	1,891	0	0,000 - 2,000	0,000

Sample A			Sample B		
WBC - morphology					
5	No changes	3,2 %	> 55	No changes	36 %
3	Hypergranulation/toxic granulation	1,9 %	3	Hypergranulation/toxic granulation	1,9 %
4	Giant bands and metamyelocytes	2,6 %	26	Agranulation	17 %
26	Agranulation	17 %	26	Hypersegmented granulocytes	17 %
34	Hypossegmentation or pseudo Pelger anomaly	22 %	1	Hypossegmentation or pseudo Pelger anomaly	0,6 %
1	Auer rods	0,6 %	2	Döhle bodies	1,3 %
>>> 93	Atypical/reactive monocytes	60 %	18	Denuded nuclei/cells, nuclear shadows / smudge cells	12 %
> 85	Denuded nuclei/cells, nuclear shadows / smudge cells	55 %	12	Vacuolisation	7,8 %
4	Cytoplasmic fragments	2,6 %	>>> 36	LGL/big lymphocytes	23 %
> 91	Vacuolisation	59 %	36	Lymphocytes - reactive forms	23 %
20	LGL/big lymphocytes	13 %	1	"Hairy" lymphocytes	0,6 %
29	Lymphocytes - reactive forms	19 %	6	Lymphocytes - atypical forms	3,9 %
41	Lymphocytes - atypical forms	27 %			
9	Nucleus fragments of neutrophils	5,8 %			

WBC - relative changes of count					
>>> 142	Neutropenia	92 %	>>> 138	Normal count	90 %
1	Neutrophilia	0,6 %	6	Neutrophilia	3,9 %
7	Lymphocytosis	4,5 %	2	Lymphocytopenia	1,3 %
2	Lymphocytopenia	1,3 %	2	Eosinophilia	1,3 %
> 55	Basophilia	36 %	4	Basophilia	2,6 %
>>> 145	Monocytosis	94 %	2	Left shift	1,3 %
2	Monocytopenia	1,3 %			
>>> 108	Left shift	70 %			

RBC - morphology					
41	No changes	27 %	>>> 136	Microcytosis	88 %
> 84	Normocytosis	55 %	1	Macrocytosis	0,6 %
1	Microcytosis	0,6 %	>>> 154	Anisocytosis	100 %
1	Macrocytosis	0,6 %	> 43	Poikilocytosis	28 %
10	Anisocytosis	6,5 %	>>> 59	Eliptocytes, ovalocytes	38 %
3	Poikilocytosis	1,9 %	>>> 78	Spherocytes	51 %
12	Eliptocytes, ovalocytes	7,8 %	> 31	Stomatocytes	20 %
>>> 58	Spherocytes	38 %	29	Dacryocytes	19 %
7	Stomatocytes	4,5 %	4	Acanthocytes	2,6 %
4	Dacryocytes	2,6 %	8	Echinocytes	5,2 %
2	Echinocytes	1,3 %	>>> 100	Target cells	65 %

Sample A			Sample B		
RBC - morphology					
2	Target cells	1,3 %	> 32	Schistocytes (and other fragmentocytes)	21 %
5	Schistocytes (and other fragmentocytes)	3,2 %	27	Polychromasia	18 %
28	Polychromasia	18 %	>>> 146	Hypochromia	95 %
12	Hypochromia	7,8 %	5	Basophilic stippling	3,2 %
> 37	Basophilic stippling	24 %	> 17	Howell-Jolly bodies	11 %
15	Howell-Jolly bodies	9,7 %	5	Rouleaux formation	3,2 %
3	Rouleaux formation	1,9 %	4	Pappenheimer bodies	2,6 %
4	Pappenheimer bodies	2,6 %			
Platelets - morphology					
>>> 154	Large platelets	100 %	> 55	No changes	36 %
13	Small platelets	8,4 %	44	Large platelets	29 %
>>> 114	Platelet aggregates	74 %	15	Small platelets	9,7 %
4	Platelet satellitism	2,6 %	>>> 94	Platelet aggregates	61 %
> 21	Platelets hypogranulation	14 %	11	Platelets hypogranulation	7,1 %
> 23	Megakaryocytic nucleus fragments	15 %			
Clinical recommendation - smear					
>>> 154	Blood smear is pathological	100 %	>>> 112	Blood smear is pathological	73 %
			42	Blood smear within physiological limits or with reactive changes	27 %
Clinical recommendation - examination					
>>> 154	An examination by the specialist/haematologist is recommended	100 %	>>> 108	An examination by the specialist/haematologist is recommended	70 %
			46	An examination by the specialist/haematologist is not necessary	30 %
Diagnosis - anaemia					
17	Normocytosis	11 %	9	Exact determination impossible	5,8 %
1	Hypochromia	0,6 %	2	Normocytosis	1,3 %
			>>> 123	Microcytosis	80 %
			>>> 92	Hypochromia	60 %
Diagnosis - acute leukaemia					
> 12	Without closer determination	7,8 %			
>>> 116	AML (acute myeloid leukemia)	75 %			
Diagnosis - myelodysplastic syndrome					
> 32	Myelodysplastic syndrome	21 %			
Diagnosis - chronic myeloproliferative disease					
4	Exact determination impossible	2,6 %			
4	CML (chronic myelogenous leukaemia)	2,6 %			
Diagnosis - platelets disorders					
8	Thrombocytopenia	5,2 %	3	Other findings	1,9 %
11	Other findings	7,1 %			
Diagnosis - other					
3	Other disease	1,9 %	5	Other reactive changes	3,2 %
			4	Other disease	2,6 %
Smear quality					
120	Acceptable	78 %	139	Acceptable	90 %
33	Not acceptable (give a reason)	21 %	14	Not acceptable (give a reason)	9,1 %
Staining					
135	Acceptable	88 %	139	Acceptable	90 %
18	Not acceptable (give a reason)	12 %	14	Not acceptable (give a reason)	9,1 %

Evaluation of the results - scoring system**DIF2/18**

Sample A	Sample B
Maximal achievable score: 93	Maximal achievable score: 105
Successful participants (success 60 % and more): 141 (it is 92 %)	Successful participants (success 60 % and more): 142 (it is 92 %)
Minimal success in this round: 50,5 %	Minimal success in this round: 52,4 %
Maximal success in this round: 100,0 %	Maximal success in this round: 100,0 %
Number of participants: 154	
in both samples: 131 (it is 85 %)	
Number of participants that succeeded:	in one sample: 21 (it is 14 %)
	in no sample: 2 (it is 1 %)