

SUMMARY STATISTICS

EQA round: DIF4/17 - Peripheral Blood Morphology Evaluation

Dead line (EQA round closed): 27.10.2017

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	0,009	0,001 - 0,036	0,009
Promyelocytes	0	0,000 - 0,018	0,000	0,015	0,000 - 0,043	0,020
Neutrophil myelocytes	0	0,000 - 0,018	0,000	0,132	0,087 - 0,185	0,139
Neutrophil metamyelocytes	0	0,000 - 0,018	0,000	0,093	0,055 - 0,144	0,089
Neutrophil bars	0,006	0,000 - 0,028	0,006	0,198	0,140 - 0,262	0,191
Segmented neutrophil granulocytes	0,223	0,169 - 0,289	0,226	0,379	0,312 - 0,451	0,369
Eosinophil granulocytes - immature forms	0	0,000 - 0,018	0,000	0,002	0,000 - 0,018	0,001
Eosinophil segmented granulocytes	0,012	0,001 - 0,036	0,012	0,008	0,000 - 0,036	0,009
Basophilic granulocytes	0,007	0,000 - 0,028	0,004	0,010	0,001 - 0,036	0,010
Monocytes	0,027	0,008 - 0,057	0,026	0,060	0,031 - 0,102	0,057
Lymphocytes	0,726	0,658 - 0,786	0,722	0,089	0,054 - 0,139	0,098
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	1,000	0,000 - 4,000	1,260

Sample A			Sample B		
WBC - morphology					
13	Hypergranulation/toxic granulation	8,3 %	11	No changes	7,1 %
15	Hypogranulation/agranulation	9,6 %	>>> 125	Hypergranulation/toxic granulation	80 %
3	Hypersegmented granulocytes	1,9 %	15	Giant bands and metamyelocytes	9,6 %
1	Atypical/reactive monocytes	0,6 %	4	Hypogranulation/agranulation	2,6 %
>>> 156	Denuded nuclei/cells, nuclear shadows / smudge cells	100 %	2	Hypersegmented granulocytes	1,3 %
> 40	Vacuolisation	26 %	> 24	Hypossegmentation or pseudo Pelger anomaly	15 %
2	LGL/big lymphocytes	1,3 %	3	Auer rods	1,9 %
30	Lymphocytes - reactive forms	19 %	2	Döhle bodies	1,3 %
2	"Hairy" lymphocytes	1,3 %	18	Atypical/reactive monocytes	12 %
>>> 135	Lymphocytes - atypical forms	87 %	12	Denuded nuclei/cells, nuclear shadows / smudge cells	7,7 %
			5	Cytoplasmatic fragments	3,2 %
			> 62	Vacuolisation	40 %
			2	LGL/big lymphocytes	1,3 %
			15	Lymphocytes - reactive forms	9,6 %
			14	Lymphocytes - atypical forms	9,0 %

WBC - relative changes of count					
>>> 146	Neutropenia	94 %	11	Neutropenia	7,1 %
>>> 156	Lymphocytosis	100 %	>>> 108	Neutrophilia	69 %
1	Eosinophilia	0,6 %	1	Lymphocytosis	0,6 %
2	Basophilia	1,3 %	>>> 144	Lymphocytopenia	92 %
> 17	Monocytopenia	11 %	> 24	Basophilia	15 %
1	Left shift	0,6 %	3	Monocytosis	1,9 %
			>>> 156	Left shift	100 %

RBC - morphology					
>>> 96	No changes	62 %	2	Normocytosis	1,3 %
58	Normocytosis	37 %	2	Microcytosis	1,3 %
7	Anisocytosis	4,5 %	2	Macrocytosis	1,3 %
1	Poikilocytosis	0,6 %	>>> 152	Anisocytosis	97 %
4	Eliptocytes, ovalocytes	2,6 %	38	Poikilocytosis	24 %
16	Spherocytes	10 %	>>> 120	Eliptocytes, ovalocytes	77 %
22	Stomatocytes	14 %	>>> 52	Spherocytes	33 %
2	Dacryocytes	1,3 %	> 90	Stomatocytes	58 %
1	Acanthocytes	0,6 %	1	Drepanocytes	0,6 %
8	Echinocytes	5,1 %	>>> 135	Dacryocytes	87 %
3	Target cells	1,9 %	1	Acanthocytes	0,6 %

Sample A			Sample B		
RBC - morphology					
3	Schistocytes (and other fragmentocytes)	1,9 %	4	Echinocytes	2,6 %
3	Polychromasia	1,9 %	1	Target cells	0,6 %
2	Hypochromia	1,3 %	> 27	Schistocytes (and other fragmentocytes)	17 %
4	Howell-Jolly bodies	2,6 %	>>> 75	Polychromasia	48 %
2	Rouleaux formation	1,3 %	>>> 44	Hypochromia	28 %
1	Pappenheimer bodies	0,6 %	18	Basophilic stippling	12 %
			17	Howell-Jolly bodies	11 %
			1	Cabot rings	0,6 %
			1	Rouleaux formation	0,6 %
			2	Pappenheimer bodies	1,3 %
Platelets - morphology					
>>> 105	No changes	67 %	5	No changes	3,2 %
42	Large platelets	27 %	>>> 148	Large platelets	95 %
12	Small platelets	7,7 %	15	Small platelets	9,6 %
8	Platelets hypogranulation	5,1 %	1	Platelet aggregates	0,6 %
			1	Platelet satellitism	0,6 %
			> 79	Platelets hypogranulation	51 %
			> 17	Megakaryocytic nucleus fragments	11 %
Clinical recommendation - smear					
>>> 156	Blood smear is pathological	100 %	>>> 156	Blood smear is pathological	100 %
Clinical recommendation - examination					
>>> 155	An examination by the specialist/haematologist is recommended	99 %	>>> 156	An examination by the specialist/haematologist is recommended	100 %
1	An examination by the specialist/haematologist is not necessary	0,6 %			
Diagnosis - anaemia					
			1	Hypochromia	0,6 %
Diagnosis - acute leukaemia					
			2	AML	1,3 %
Diagnosis - myelodysplastic syndrome					
			6	Myelodysplastic syndrome	3,8 %
Diagnosis - chronic myeloproliferative disease					
			>>> 66	Exact determination impossible	42 %
			> 58	CML	37 %
			> 47	Myelofibrosis	30 %
Diagnosis - mature lymphocytic cells neoplasms					
> 6	Exact determination impossible	3,8 %			
>>> 146	CLL	94 %			
1	HCL	0,6 %			
> 9	Other lymphoproliferative diseases	5,8 %			
Diagnosis - platelets disorders					
2	Thrombocytopenia	1,3 %	1	Other findings	0,6 %
Diagnosis - other					
			1	Other diseases	0,6 %
Smear quality					
153	Acceptable	98 %	153	Acceptable	98 %
2	Not acceptable	1,3 %	2	Not acceptable	1,3 %
Staining					
147	Acceptable	94 %	148	Acceptable	95 %
8	Not acceptable	5,1 %	7	Not acceptable	4,5 %

Evaluation of the results - scoring system

DIF4/17

Sample A	Sample B
Maximal achievable score: 87	Maximal achievable score: 117
Successful participants (success 60 % and more): 156 (it is 100 %)	Successful participants (success 60 % and more): 152 (it is 97 %)
Minimal success in this round: 64,4 %	Minimal success in this round: 35,9 %
Maximal success in this round: 100,0 %	Maximal success in this round: 100,0 %
Number of participants: 156	
in both samples: 152 (it is 97 %)	
Number of participants that succeeded:	in one sample: 4 (it is 3 %)
	in no sample: 0 (it is 0 %)