

SUMMARY STATISTICS

EQA round: DIF3/18 - Peripheral Blood Morphology Evaluation

Dead line (EQA round closed): 27.07.2018

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	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	0,002	0,000 - 0,018	0,003
Neutrophil metamyelocytes	0	0,000 - 0,018	0,000	0,002	0,000 - 0,018	0,002
Neutrophil bars	0,002	0,000 - 0,018	0,005	0,007	0,000 - 0,028	0,012
Segmented neutrophil granulocytes	0,286	0,224 - 0,353	0,277	0,456	0,385 - 0,527	0,460
Eosinophil granulocytes - immature forms	0	0,000 - 0,018	0,000	0	0,000 - 0,018	0,000
Eosinophil segmented granulocytes	0,020	0,005 - 0,050	0,020	0,020	0,005 - 0,050	0,025
Basophilic granulocytes	0,002	0,000 - 0,018	0,003	0,011	0,001 - 0,036	0,012
Monocytes	0,033	0,014 - 0,071	0,033	0,061	0,031 - 0,102	0,061
Lymphocytes	0,655	0,585 - 0,721	0,660	0,416	0,346 - 0,487	0,412
Plasma cells	0	0,000 - 0,018	0,000	0,013	0,000 - 0,043	0,002
Erythroblasts (number)	0	0,000 - 2,000	0,000	1,000	0,000 - 4,000	0,821

Sample A			Sample B		
WBC - morphology					
4	No changes	3,2 %	> 41	No changes	33 %
4	Hypergranulation/toxic granulation	3,2 %	11	Hypergranulation/toxic granulation	8,9 %
1	Hypersegmented granulocytes	0,8 %	2	Giant bands and metamyelocytes	1,6 %
>>> 113	Denuded nuclei/cells, nuclear shadows / smudge cells	91 %	2	Agranulation	1,6 %
>>> 52	Vacuolisation	42 %	12	Hypersegmented granulocytes	9,7 %
>>> 82	LGL/big lymphocytes	66 %	1	Hypossegmentation or pseudo Pelger anomaly	0,8 %
> 47	Lymphocytes - reactive forms	38 %	2	Atypical/reactive monocytes	1,6 %
1	"Hairy" lymphocytes	0,8 %	3	Denuded nuclei/cells, nuclear shadows / smudge cells	2,4 %
> 59	Lymphocytes - atypical forms	48 %	1	Cytoplasmic fragments	0,8 %
			> 34	Vacuolisation	27 %
			12	LGL/big lymphocytes	9,7 %
			> 36	Lymphocytes - reactive forms	29 %
			1	"Hairy" lymphocytes	0,8 %
			13	Lymphocytes - atypical forms	10 %
			2	Nucleus fragments of neutrophils	1,6 %

WBC - relative changes of count					
1	Normal count	0,8 %	> 49	Normal count	40 %
>>> 102	Neutropenia	82 %	> 37	Neutropenia	30 %
2	Neutrophilia	1,6 %	10	Lymphocytosis	8,1 %
>>> 124	Lymphocytosis	100 %	2	Eosinophilia	1,6 %
1	Eosinophilia	0,8 %	> 22	Basophilia	18 %
1	Basophilia	0,8 %	3	Monocytosis	2,4 %
2	Monocytopenia	1,6 %	> 37	Left shift	30 %

RBC - morphology					
>>> 80	No changes	65 %	>>> 89	Microcytosis	72 %
47	Normocytosis	38 %	9	Macrocytosis	7,3 %
2	Anisocytosis	1,6 %	>>> 120	Anisocytosis	97 %
1	Poikilocytosis	0,8 %	>>> 78	Poikilocytosis	63 %
1	Eliptocytes, ovalocytes	0,8 %	>>> 79	Eliptocytes, ovalocytes	64 %
3	Spherocytes	2,4 %	>>> 69	Spherocytes	56 %
5	Stomatocytes	4,0 %	> 35	Stomatocytes	28 %
23	Dacryocytes	19 %	10	Drepanocytes	8,1 %
1	Target cells	0,8 %	>>> 90	Dacryocytes	73 %
1	Schistocytes (and other fragmentocytes)	0,8 %	3	Acanthocytes	2,4 %
3	Basophilic stippling	2,4 %	1	Echinocytes	0,8 %

Sample A				Sample B			
RBC - morphology							
2	Howell-Jolly bodies	1,6 %	>>> 112	Target cells			90 %
3	Rouleaux formation	2,4 %	>>> 81	Schistocytes (and other fragmentocytes)			65 %
			>>> 78	Polychromasia			63 %
			>>> 100	Hypochromia			81 %
			>>> 114	Basophilic stippling			92 %
			32	Howell-Jolly bodies			26 %
			15	Cabot rings			12 %
			2	Parasite inclusions (eg. malaric plasmodia)			1,6 %
			2	Rouleaux formation			1,6 %
			6	Pappenheimer bodies			4,8 %
			1	RBC agglutination			0,8 %
Platelets - morphology							
>>> 78	No changes	63 %	> 28	No changes			23 %
> 45	Large platelets	36 %	>>> 92	Large platelets			74 %
3	Small platelets	2,4 %	7	Small platelets			5,6 %
2	Platelets hypogranulation	1,6 %	17	Platelet aggregates			14 %
			11	Platelets hypogranulation			8,9 %
Clinical recommendation - smear							
>>> 111	Blood smear is pathological	90 %	>>> 118	Blood smear is pathological			95 %
12	Blood smear within physiological limits or with reactive changes	9,7 %	5	Blood smear within physiological limits or with reactive changes			4,0 %
Clinical recommendation - examination							
>>> 109	An examination by the specialist/haematologist is recommended	88 %	>>> 121	An examination by the specialist/haematologist is recommended			98 %
14	An examination by the specialist/haematologist is not necessary	11 %	2	An examination by the specialist/haematologist is not necessary			1,6 %
Diagnosis - anaemia							
1	Exact determination impossible	0,8 %	7	Exact determination impossible			5,6 %
1	Microcytosis	0,8 %	17	Microcytosis			14 %
1	Haemolytic	0,8 %	7	Hypochromia			5,6 %
1	Thalassemia or other haemoglobinopathies	0,8 %	> 36	Haemolytic			29 %
			>>> 78	Thalassemia or other haemoglobinopathies			63 %
Diagnosis - myelodysplastic syndrome							
			3	Myelodysplastic syndrome			2,4 %
Diagnosis - chronic myeloproliferative disease							
			1	Myelofibrosis			0,8 %
Diagnosis - mature lymphocytic cells neoplasms							
>>> 54	Exact determination impossible	44 %	2	Exact determination impossible			1,6 %
36	CLL (chronic lymphocytic leukaemia)	29 %	1	CLL (chronic lymphocytic leukaemia)			0,8 %
Diagnosis - other							
4	Viral infection incl. inf. mononucleosis	3,2 %	1	Viral infection incl. inf. mononucleosis			0,8 %
> 20	Other reactive changes	16 %	2	Other disease			1,6 %
10	Other disease	8,1 %					
Smear quality							
118	Acceptable	95 %	119	Acceptable			96 %
3	Not acceptable (give a reason)	2,4 %	2	Not acceptable (give a reason)			1,6 %
Staining							
118	Acceptable	95 %	118	Acceptable			95 %
3	Not acceptable (give a reason)	2,4 %	3	Not acceptable (give a reason)			2,4 %
Evaluation of the results - scoring system							
Sample A				Sample B			
Maximal achievable score: 93				Maximal achievable score: 117			
Successful participants (success 60 % and more): 119 (it is 96 %)				Successful participants (success 60 % and more): 121 (it is 98 %)			
Minimal success in this round: 49,5 %				Minimal success in this round: 47,9 %			
Maximal success in this round: 100,0 %				Maximal success in this round: 100,0 %			
Number of participants: 124							
in both samples: 116 (it is 94 %)							
Number of participants that succeeded:							
in one sample: 8 (it is 6 %)							
in no sample: 0 (it is 0 %)							