

SUMMARY STATISTICS

EQA round: DIF2/19 - Peripheral Blood Morphology Evaluation

Dead line (EQA round closed): 24.05.2019

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	0,002	0,000 - 0,018	0,004
Promyelocytes	0	0,000 - 0,018	0,000	0,002	0,000 - 0,018	0,005
Neutrophil myelocytes	0	0,000 - 0,018	0,000	0,072	0,039 - 0,115	0,073
Neutrophil metamyelocytes	0	0,000 - 0,018	0,000	0,053	0,020 - 0,096	0,047
Neutrophil bars	0,001	0,000 - 0,018	0,005	0,059	0,031 - 0,102	0,060
Segmented neutrophil granulocytes	0,434	0,365 - 0,507	0,436	0,110	0,070 - 0,162	0,096
Eosinophil granulocytes - immature forms	0	0,000 - 0,018	0,000	0	0,000 - 0,018	0,000
Eosinophil segmented granulocytes	0,065	0,035 - 0,109	0,058	0,004	0,000 - 0,028	0,006
Basophilic granulocytes	0,013	0,003 - 0,043	0,010	0,002	0,000 - 0,018	0,002
Monocytes	0,085	0,050 - 0,133	0,075	0,530	0,458 - 0,601	0,492
Lymphocytes	0,405	0,336 - 0,477	0,413	0,169	0,121 - 0,229	0,204
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	0,008

Sample A			Sample B		
WBC - morphology					
14	No changes	9,2 %	1	Giant bands and metamyelocytes	0,7 %
3	Hypergranulation/toxic granulation	2,0 %	>>> 92	Agranulation	61 %
3	Agranulation	2,0 %	2	Hypersegmented granulocytes	1,3 %
3	Hypersegmented granulocytes	2,0 %	>>> 67	Hyposegmentation / asegmentation / pelgeroid	44 %
1	Hyposegmentation / asegmentation / pelgeroid	0,7 %	1	Auer rods	0,7 %
4	Atypical/reactive monocytes	2,6 %	5	Döhle bodies	3,3 %
14	Denuded nuclei/cells, nuclear shadows / smudge cells	9,2 %	>>> 143	Atypical/reactive monocytes	94 %
>>> 121	Vacuolisation	80 %	>>> 97	Denuded nuclei/cells, nuclear shadows / smudge cells	64 %
3	LGL/big lymphocytes	2,0 %	2	Cytoplasmic fragments	1,3 %
> 86	Lymphocytes - reactive forms	57 %	> 44	Vacuolisation	29 %
1	"Hairy" lymphocytes	0,7 %	3	LGL/big lymphocytes	2,0 %
7	Lymphocytes - atypical forms	4,6 %	15	Lymphocytes - reactive forms	9,9 %
			16	Lymphocytes - atypical forms	11 %
			4	Nucleus fragments of neutrophiles	2,6 %

WBC - relative changes of count					
> 30	Normal count	20 %	>>> 148	Neutropenia	97 %
> 92	Neutropenia	61 %	3	Lymphocytosis	2,0 %
> 19	Lymphocytosis	13 %	>>> 60	Lymphocytopenia	39 %
1	Lymphocytopenia	0,7 %	>>> 148	Monocytosis	97 %
> 84	Eosinophilia	55 %	1	Monocytopenia	0,7 %
> 23	Basophilia	15 %	>>> 139	Left shift	91 %
6	Monocytosis	3,9 %			
1	Left shift	0,7 %			

RBC - morphology					
>>> 118	No changes	78 %	>>> 142	Macrocytosis	93 %
35	Normocytosis	23 %	26	Anisocytosis	17 %
2	Anisocytosis	1,3 %	16	Poikilocytosis	11 %
13	Eliptocytes, ovalocytes	8,6 %	>>> 57	Eliptocytes, ovalocytes	38 %
5	Spherocytes	3,3 %	24	Spherocytes	16 %
9	Stomatocytes	5,9 %	13	Stomatocytes	8,6 %
2	Dacryocytes	1,3 %	1	Drepanocytes	0,7 %
1	Echinocytes	0,7 %	>>> 135	Dacryocytes	89 %
3	Target cells	2,0 %	1	Acanthocytes	0,7 %
5	Polychromasia	3,3 %	6	Echinocytes	3,9 %
1	Hypochromia	0,7 %	> 31	Schistocytes (and other fragmentocytes)	20 %

Sample A				Sample B			
RBC - morphology							
2	Basophilic stippling	1,3 %	>>>	95	Polychromasia		63 %
2	Rouleaux formation	1,3 %		3	Hypochromia		2,0 %
				13	Basophilic stippling		8,6 %
				18	Howell-Jolly bodies		12 %
				4	Rouleaux formation		2,6 %
				2	Pappenheimer bodies		1,3 %
Platelets - morphology							
>	46	No changes		30 %	17	No changes	11 %
>	97	Large platelets	>>>	64 %	133	Large platelets	88 %
	11	Small platelets		7,2 %	4	Small platelets	2,6 %
	8	Platelet aggregates	>>>	5,3 %	52	Platelets hypogranulation	34 %
	17	Platelets hypogranulation		11 %	3	Megakaryocytic nucleus fragments	2,0 %
	1	Megakaryocytic nucleus fragments		0,7 %			
Clinical recommendation - smear							
	16	Blood smear is pathological		11 %	>>>	150	Blood smear is pathological 99 %
>>>	136	Blood smear within physiological limits or with reactive changes		89 %	1	Blood smear within physiological limits or with reactive changes	0,7 %
Clinical recommendation - examination							
	12	An examination by the specialist/haematologist is recommended		7,9 %	>>>	150	An examination by the specialist/haematologist is recommended 99 %
>>>	139	An examination by the specialist/haematologist is not necessary		91 %	2	An examination by the specialist/haematologist is not necessary	1,3 %
Diagnosis - anaemia							
	1	Hypochromia		0,7 %	1	Exact determination impossible	0,7 %
					5	Macrocytosis	3,3 %
Diagnosis - acute leukaemia							
					2	Without closer determination	1,3 %
					2	AML (acute myeloid leukemia)	1,3 %
Diagnosis - myelodysplastic syndrome							
					>>>	71	Myelodysplastic syndrome 47 %
Diagnosis - chronic myeloproliferative disease							
					>	84	Exact determination impossible 55 %
					8	CML (chronic myelogenous leukaemia)	5,3 %
					2	Myelofibrosis	1,3 %
Diagnosis - mature lymphocytic cells neoplasms							
					1	Exact determination impossible	0,7 %
Diagnosis - platelets disorders							
	47	Thrombocytosis		31 %			
	1	Other findings		0,7 %			
Diagnosis - other							
	1	Viral infection incl. inf. mononucleosis		0,7 %	1	Viral infection incl. inf. mononucleosis	0,7 %
>>>	114	Other reactive changes		75 %	1	Other reactive changes	0,7 %
	6	Allergy		3,9 %	>	15	Other disease 9,9 %
	13	Other disease		8,6 %			
Smear quality							
	143	Acceptable		94 %	145	Acceptable	95 %
	3	Not acceptable (give a reason)		2,0 %	1	Not acceptable (give a reason)	0,7 %
Staining							
	135	Acceptable		89 %	130	Acceptable	86 %
	11	Not acceptable (give a reason)		7,2 %	16	Not acceptable (give a reason)	11 %

Evaluation of the results - scoring system

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Sample A	Sample B
Maximal achievable score: 63	Maximal achievable score: 135
Successful participants (success 60 % and more): 148 (it is 97 %)	Successful participants (success 60 % and more): 142 (it is 93 %)
Minimal success in this round: 42,9 %	Minimal success in this round: 42,2 %
Maximal success in this round: 100,0 %	Maximal success in this round: 100,0 %
Number of participants: 152	
in both samples: 141 (it is 93 %)	
in one sample: 8 (it is 5 %)	
in no sample: 3 (it is 2 %)	