

## EQA round: IFT1/26 - Immunophenotypisation

Deadline: 27.4.2026

Setup: groups - R (manufacturer of kit); Slovakia; minimal size of the groups n = 5

RoM = robust average	AV = assigned value	D <sub>max</sub> = acceptable difference
SD = standard deviation	CVP = consensus of all participants	LL = lower limit
CV = coefficient of variation	U <sub>AV</sub> = expanded uncertainty of the assigned value (k = 2)	UL = upper limit
N <sub>tot</sub> = total number of the results		N <sub>eva</sub> = number of the results assessed
N <sub>out</sub> = number of the results removed before calculation		N <sub>suc</sub> = number of successful results
		S <sub>rel</sub> = relative success

Test Sample Group	[unit]	RoM	SD	CV [%]	N <sub>tot</sub>	N <sub>out</sub>	Comparability					N <sub>eva</sub>	N <sub>suc</sub>	S <sub>rel</sub> [%]	
							AV	U <sub>AV</sub>	D <sub>max</sub>	LL	UL				
<b>(253) T lymphocytes (CD3+)</b>	[%]				31							31	31	100	
<b>Sample A</b>		73	1,1	1,5	31		CVP	73,1	0,35	7%	67,9	78,3	31	31	100
(12) Beckman Coulter		72,9	1,2	1,6	22	0							22		
(88) Becton Dickinson		72,9	0,65	0,89	5	0							5		
Other					4	0							4		
							3x 36, 1x 177								
<b>Sample B</b>		88,8	0,76	0,85	31		CVP	89	0,33	7%	82,7	95,3	31	31	100
(12) Beckman Coulter		88,9	0,76	0,86	22	0							22		
(88) Becton Dickinson		88,9	0,59	0,67	5	0							5		
Other					4	0							4		
							3x 36, 1x 177								
<b>(254) Th lymphocytes (CD4+)</b>	[%]				31								31	31	100
<b>Sample A</b>		40,9	1,3	3,1	31		CVP	41,2	0,32	10%	37	45,4	31	31	100
(12) Beckman Coulter		40,9	1,2	2,9	22	0							22		
(88) Becton Dickinson		40,1	2	5	5	0							5		
Other					4	0							4		
							3x 36, 1x 177								
<b>Sample B</b>		64,9	1	1,6	31		CVP	65,3	0,35	10%	58,7	71,9	31	31	100
(12) Beckman Coulter		65	1,2	1,8	22	0							22		
(88) Becton Dickinson		64,9	0,52	0,8	5	0							5		
Other					4	0							4		
							3x 36, 1x 177								
<b>(255) T lymphocytes (CD8+)</b>	[%]				31								31	30	97
<b>Sample A</b>		29,4	1	3,5	31		CVP	29,5	0,21	17%	24,4	34,6	31	31	100
(12) Beckman Coulter		29,4	1,2	4	22	0							22		
(88) Becton Dickinson		29,6	0,7	2,4	5	0							5		
Other					4	0							4		
							3x 36, 1x 177								
<b>Sample B</b>		20,9	0,96	4,6	31		CVP	20,8	0,22	17%	17,2	24,4	31	30	97
(12) Beckman Coulter		20,8	1	5	22	0							22		
(88) Becton Dickinson		21,3	0,53	2,5	5	0							5		
Other					4	0							4		
							3x 36, 1x 177								
<b>(256) B lymphocytes</b>	[%]				31								31	30	97
<b>Sample A</b>		15,8	1,3	8,3	31		CVP	16	0,25	30%	11,2	20,8	31	30	97
(12) Beckman Coulter		15,8	1,3	8,2	22	0							22		
(88) Becton Dickinson		16,5	0,36	2,2	5	0							5		
Other					4	0							4		
							3x 36, 1x 177								
<b>Sample B</b>		7,41	0,74	10	31		CVP	7,33	0,14	30%	5,13	9,53	31	30	97
(12) Beckman Coulter		7,43	0,71	9,5	22	0							22		
(88) Becton Dickinson		7,84	0,53	6,8	5	0							5		
Other					4	0							4		
							3x 36, 1x 177								
<b>(257) NK cells</b>	[%]				31								31	31	100
<b>Sample A</b>		9,5	0,82	8,6	31		CVP	9,27	0,22	26%	6,85	11,7	31	31	100
(12) Beckman Coulter		9,56	0,85	8,9	22	0							22		
(88) Becton Dickinson		9,57	0,79	8,3	5	0							5		
Other					4	0							4		
							3x 36, 1x 177								
<b>Sample B</b>		2,52	0,62	25	31		CVP	2,31	0,18	64%	0,831	3,79	31	31	100
(12) Beckman Coulter		2,53	0,63	25	22	0							22		
(88) Becton Dickinson		2,71	0,59	22	5	0							5		
Other					4	0							4		
							3x 36, 1x 177								
<b>(638) Isotype switched memory B lymphocytes (CD19+CD27+IgD-)</b>	[% of B]				3								3	2	67
<b>Sample A</b>		25,1	9	36	3		CVP	24	7,4	80%	4,8	43,2	3	3	100
Other					3	0							3		
							1x 12, 1x 36, 1x 88								
<b>Sample B</b>		26	17	64	3		CVP	18,1	4,3	60%	7,24	29	3	2	67
Other					3	0							3		
							1x 12, 1x 36, 1x 88								

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							AV	U <sub>AV</sub>	D <sub>max</sub>	LL	UL				
<b>(642) T regulatory lymphocytes (CD3+CD4+CD25+CD127low)</b>	[% of Th]				5							5	4	80	
<b>Sample A</b>		9,3	5,8	62	5		CVP	11,2	1,8	54%	5,15	17,3	5	4	80
Other					5	0		2x 12, 1x 36, 1x 88, 1x 999					5		
<b>Sample B</b>		9,4	5,9	63	5		CVP	12	2,3	64%	4,32	19,7	5	4	80
Other					5	0		2x 12, 1x 36, 1x 88, 1x 999					5		
<b>(630) WBC</b>	[·10 <sup>9</sup> /L]				23							23	23	100	
<b>Sample A</b>		3,23	0,13	4	23		CVP	3,26	0,037	15%	2,77	3,75	23	23	100
(63) Sysmex		3,27	0,13	4,1	10	0							10		
(177) Mindray		3,26	0,074	2,3	9	0							9		
Other					4	0		2x 12, 1x 176, 1x 179					4		
<b>Sample B</b>		2,61	0,13	5,1	23		CVP	2,64	0,034	15%	2,24	3,04	23	23	100
(63) Sysmex		2,62	0,069	2,6	10	0							10		
(177) Mindray		2,67	0,082	3,1	9	0							9		
Other					4	0		2x 12, 1x 176, 1x 179					4		
<b>(631) Lymphocytes</b>	[·10 <sup>9</sup> /L]				23							23	23	100	
<b>Sample A</b>		1,44	0,14	9,6	23		CVP	1,47	0,049	22%	1,14	1,8	23	23	100
(63) Sysmex		1,55	0,18	11	10	0							10		
(177) Mindray		1,38	0,074	5,4	7	0							7		
Other					6	0		3x 12, 1x 36, 1x 176, 1x 179					6		
<b>Sample B</b>		0,575	0,09	16	23		CVP	0,595	0,027	30%	0,416	0,774	23	23	100
(63) Sysmex		0,659	0,055	8,4	10	0							10		
(177) Mindray		0,51	0,045	8,7	7	0							7		
Other					6	0		3x 12, 1x 36, 1x 176, 1x 179					6		
<b>(632) T lymphocytes (CD3+) (abs. count)</b>	[·10 <sup>9</sup> /L]				23							23	23	100	
<b>Sample A</b>		1,04	0,1	9,6	23		CVP	1,08	0,038	24%	0,82	1,34	23	23	100
(12) Beckman Coulter		1,09	0,12	11	12	0							12		
Other					11	0		1x 0, 2x 36, 4x 63, 2x 88, 2x 177					11		
<b>Sample B</b>		0,504	0,074	15	23		CVP	0,527	0,024	30%	0,368	0,686	23	23	100
(12) Beckman Coulter		0,524	0,087	17	12	0							12		
Other					11	0		1x 0, 2x 36, 4x 63, 2x 88, 2x 177					11		
<b>(633) Th lymphocytes (CD4+) (abs. count)</b>	[·10 <sup>9</sup> /L]				23							23	23	100	
<b>Sample A</b>		0,587	0,06	10	23		CVP	0,605	0,022	24%	0,459	0,751	23	23	100
(12) Beckman Coulter		0,611	0,068	11	12	0							12		
Other					11	0		1x 0, 2x 36, 4x 63, 2x 88, 2x 177					11		
<b>Sample B</b>		0,371	0,053	14	23		CVP	0,386	0,017	30%	0,27	0,502	23	23	100
(12) Beckman Coulter		0,383	0,06	16	12	0							12		
Other					11	0		1x 0, 2x 36, 4x 63, 2x 88, 2x 177					11		
<b>(634) T lymphocytes (CD8+) (abs. count)</b>	[·10 <sup>9</sup> /L]				23							23	22	96	
<b>Sample A</b>		0,416	0,03	7,1	23		CVP	0,433	0,015	22%	0,337	0,529	23	23	100
(12) Beckman Coulter		0,434	0,051	12	12	0							12		
Other					11	0		1x 0, 2x 36, 4x 63, 2x 88, 2x 177					11		
<b>Sample B</b>		0,117	0,02	17	23		CVP	0,123	0,006	32%	0,083	0,163	23	22	96
(12) Beckman Coulter		0,121	0,02	17	12	0							12		
Other					11	0		1x 0, 2x 36, 4x 63, 2x 88, 2x 177					11		
<b>(635) B lymphocytes (abs. count)</b>	[·10 <sup>9</sup> /L]				23							23	21	91	
<b>Sample A</b>		0,223	0,025	11	23		CVP	0,232	0,009	26%	0,171	0,293	23	21	91
(12) Beckman Coulter		0,236	0,027	11	12	0							12		
Other					11	0		1x 0, 2x 36, 4x 63, 2x 88, 2x 177					11		
<b>Sample B</b>		0,042	0,007	17	23		CVP	0,043	0,002	34%	0,028	0,058	23	22	96
(12) Beckman Coulter		0,045	0,006	13	12	0							12		
Other					11	0		1x 0, 2x 36, 4x 63, 2x 88, 2x 177					11		

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							AV	U <sub>AV</sub>	D <sub>max</sub>	LL	UL				
(636) <b>NK cells (abs. count)</b>	[·10 <sup>9</sup> /L]				23							23	22	96	
<b>Sample A</b>		0,137	0,018	13	23		CVP	0,139	0,006	30%	0,097	0,181	23	22	96
(12) Beckman Coulter		0,141	0,03	21	11	0							11		
Other					12	0							12		
							1x 0, 1x 9, 2x 36, 4x 63, 2x 88, 2x 177								
<b>Sample B</b>		0,015	0,006	38	23		CVP	0,014	0,002	88%	0,001	0,027	23	22	96
(12) Beckman Coulter		0,011	0,002	15	11	0							11		
Other					12	0							12		
							1x 0, 1x 9, 2x 36, 4x 63, 2x 88, 2x 177								