

EQA round: T05/24 - Immunophenotypisation (study)

Deadline: 22.4.2024

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

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

Test Sample Group	[unit]	RoM	SD	CV [%]	N _{tot}	N _{out}	Comparability					N _{eva}	N _{suc}	S _{rel} [%]	
							AV	U _{AV}	D _{max}	LL	UL				
(637) B lymphocytes (CD5+CD19+)		[% of B]				25							25	19	76
Sample A		15,8	15	96	25		CVP	15,8	7,4	100%	0	31,6	25	20	80
(12) Beckman Coulter		15,8	15	95	17	0						17			
(88) Becton Dickinson		9,8	5,3	54	5	0						5			
Other					3	0						3			
		1x 0, 1x 36, 1x 999													
Sample B		13,1	13	100	25		CVP	13,1	6,6	100%	0	26,2	25	19	76
(12) Beckman Coulter		13	13	100	17	0						17			
(88) Becton Dickinson		8,1	4,2	51	5	0						5			
Other					3	0						3			
		1x 0, 1x 36, 1x 999													
(638) Isotype switched memory B lymphocytes		[% of B]				15							15	13	87
Sample A		17,5	6,3	36	15		CVP	17,5	4	60%	7	28	15	13	87
(12) Beckman Coulter		16,7	2,2	13	8	0						8			
Other					7	0						7			
		1x 36, 4x 88, 1x 190, 1x 999													
Sample B		13,9	3,3	24	15		CVP	13,9	2,1	60%	5,56	22,3	15	14	93
(12) Beckman Coulter		13,5	3	23	8	0						8			
Other					7	0						7			
		1x 36, 4x 88, 1x 190, 1x 999													
(639) Naive B lymphocytes		[% of B]				17							17	13	76
Sample A		61,1	6,2	10	17		CVP	61,1	3,7	20%	48,8	73,4	17	15	88
(12) Beckman Coulter		61,5	8,2	13	10	0						10			
Other					7	0						7			
		1x 0, 1x 36, 3x 88, 1x 190, 1x 999													
Sample B		75,4	3,9	5,2	17		CVP	75,4	2,3	10%	67,8	83	17	14	82
(12) Beckman Coulter		75,4	3,9	5,2	10	0						10			
Other					7	0						7			
		1x 0, 1x 36, 3x 88, 1x 190, 1x 999													
(640) Activated T lymphocytes (HLA-DR+)		[% of T]				46							46	40	87
Sample A		3,99	2,8	71	46		CVP	3,99	1	100%	0	7,98	46	40	87
(12) Beckman Coulter		4,14	3,2	77	28	0						28			
(88) Becton Dickinson		5,85	2	34	6	0						6			
Other					12	0						12			
		2x 0, 2x 36, 1x 177, 4x 190, 3x 999													
Sample B		7,86	4,3	54	46		CVP	7,86	1,5	100%	0	15,8	46	44	96
(12) Beckman Coulter		8,54	5,1	60	28	0						28			
(88) Becton Dickinson		8,75	1,9	21	6	0						6			
Other					12	0						12			
		2x 0, 2x 36, 1x 177, 4x 190, 3x 999													
(641) gamma-delta T lymphocytes (CD3+TcRγδ+)		[% of T]				22							22	20	91
Sample A		4,82	0,86	18	22		CVP	4,82	0,45	40%	2,89	6,75	22	21	95
(12) Beckman Coulter		4,89	1	21	15	0						15			
Other					7	0						7			
		2x 0, 1x 36, 3x 88, 1x 999													
Sample B		6,45	1,4	22	22		CVP	6,45	0,75	40%	3,87	9,03	22	21	95
(12) Beckman Coulter		6,22	1,5	25	15	0						15			
Other					7	0						7			
		2x 0, 1x 36, 3x 88, 1x 999													
(642) T regulatory lymphocytes		[% of Th]				31							31	27	87
Sample A		3,93	1,6	42	31		CVP	3,93	0,73	70%	1,17	6,69	31	27	87
(12) Beckman Coulter		3,81	2	51	18	0						18			
(88) Becton Dickinson		5,1	1	20	6	0						6			
Other					7	0						7			
		1x 0, 2x 36, 1x 177, 1x 190, 2x 999													
Sample B		5,75	1,6	28	31		CVP	5,75	0,72	70%	1,72	9,78	31	29	94
(12) Beckman Coulter		5,78	1,7	29	18	0						18			
(88) Becton Dickinson		6,65	1,4	21	6	0						6			
Other					7	0						7			
		1x 0, 2x 36, 1x 177, 1x 190, 2x 999													

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							AV	U _{AV}	D _{max}	LL	UL				
(643) Naive Th lymphocytes	[% of Th]				18							18	17	94	
Sample A		35	10	28	18		CVP	35	5,8	55%	15,7	54,3	18	18	100
(12) Beckman Coulter		35	11	31	12	0							12		
Other					6	0							6		
							4x 88, 1x 190, 1x 999								
Sample B		36,9	9,5	26	18		CVP	36,9	5,5	55%	16,6	57,2	18	17	94
(12) Beckman Coulter		37,5	8,6	23	12	0							12		
Other					6	0							6		
							4x 88, 1x 190, 1x 999								
(630) WBC	[·10 ⁹ /L]				31							31	28	90	
Sample A		2,87	0,21	7,4	31		CVP	2,87	0,093	15%	2,43	3,31	31	29	94
(12) Beckman Coulter		2,86	0,089	3,1	6	0							6		
(63) Sysmex		2,9	0,2	7,1	19	0							19		
Other					6	0							6		
							1x 0, 1x 1, 4x 177								
Sample B		3,01	0,13	4,3	31		CVP	3,01	0,057	10%	2,7	3,32	31	30	97
(12) Beckman Coulter		2,95	0,074	2,5	6	0							6		
(63) Sysmex		3,02	0,13	4,2	19	0							19		
Other					6	0							6		
							1x 0, 1x 1, 4x 177								
(631) Lymphocytes	[·10 ⁹ /L]				32							32	29	91	
Sample A		1,3	0,2	15	32		CVP	1,3	0,087	30%	0,91	1,69	32	30	94
(12) Beckman Coulter		1,2	0,069	5,8	5	0							5		
(63) Sysmex		1,38	0,17	12	18	1							18		
Other					9	0							9		
							2x 0, 1x 1, 1x 36, 4x 177, 1x 999								
Sample B		0,818	0,14	17	32		CVP	0,818	0,062	30%	0,572	1,07	32	29	91
(12) Beckman Coulter		0,725	0,062	8,6	5	0							5		
(63) Sysmex		0,9	0,077	8,6	18	1							18		
Other					9	0							9		
							2x 0, 1x 1, 1x 36, 4x 177, 1x 999								
(644) B lymphocytes (CD5+CD19+) (abs. count)	[·10 ⁹ /L]				17							17	14	82	
Sample A		0,044	0,036	83	17		CVP	0,044	0,021	100%	0	0,088	17	15	88
(12) Beckman Coulter		0,043	0,032	73	11	0							11		
Other					6	0							6		
							1x 0, 1x 63, 2x 88, 1x 177, 1x 999								
Sample B		0,019	0,017	90	17		CVP	0,019	0,01	100%	0	0,038	17	14	82
(12) Beckman Coulter		0,021	0,017	85	11	0							11		
Other					6	0							6		
							1x 0, 1x 63, 2x 88, 1x 177, 1x 999								
(645) Isotype switched memory B lymphocytes (abs. count)	[·10 ⁹ /L]				10							10	9	90	
Sample A		0,03	0,013	43	10		CVP	0,03	0,01	70%	0,009	0,051	10	9	90
(12) Beckman Coulter		0,031	0,013	43	7	0							7		
Other					3	0							3		
							1x 63, 1x 177, 1x 999								
Sample B		0,012	0,003	28	10		CVP	0,012	0,003	70%	0,003	0,021	10	10	100
(12) Beckman Coulter		0,011	0,003	27	7	0							7		
Other					3	0							3		
							1x 63, 1x 177, 1x 999								
(646) Naive B lymphocytes (abs. počet)	[·10 ⁹ /L]				12							12	11	92	
Sample A		0,091	0,022	25	12		CVP	0,091	0,016	50%	0,045	0,137	12	11	92
(12) Beckman Coulter		0,103	0,022	22	7	0							7		
Other					5	0							5		
							1x 0, 1x 63, 1x 88, 1x 177, 1x 999								
Sample B		0,054	0,013	24	12		CVP	0,054	0,009	50%	0,027	0,081	12	11	92
(12) Beckman Coulter		0,059	0,013	22	7	0							7		
Other					5	0							5		
							1x 0, 1x 63, 1x 88, 1x 177, 1x 999								
(647) Activated T lymphocytes (HLA-DR+) (abs. c)	[·10 ⁹ /L]				31							31	24	77	
Sample A		0,04	0,03	75	31		CVP	0,04	0,013	100%	0	0,08	31	25	81
(12) Beckman Coulter		0,045	0,034	74	16	0							16		
Other					15	0							15		
							3x 0, 1x 36, 3x 63, 1x 88, 2x 177, 3x 190, 2x 999								
Sample B		0,049	0,025	51	31		CVP	0,049	0,011	100%	0	0,098	31	26	84
(12) Beckman Coulter		0,054	0,018	34	16	0							16		
Other					15	0							15		
							3x 0, 1x 36, 3x 63, 1x 88, 2x 177, 3x 190, 2x 999								

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							AV	U _{AV}	D _{max}	LL	UL				
(648) gamma-delta T lymphocytes(CD3+TcRγδ+) (abs. count)															
	[·10 ⁹ /L]				15							15	13	87	
Sample A		0,046	0,012	26	15		CVP	0,046	0,008	55%	0,02	0,072	15	14	93
(12) Beckman Coulter		0,049	0,013	27	9	0							9		
Other					6	0							6		
							1x 0, 1x 58, 1x 88, 1x 177, 2x 999								
Sample B		0,038	0,011	28	15		CVP	0,038	0,007	55%	0,017	0,059	15	13	87
(12) Beckman Coulter		0,037	0,01	28	9	0							9		
Other					6	0							6		
							1x 0, 1x 58, 1x 88, 1x 177, 2x 999								
(649) T regulatory lymphocytes (abs. count)															
	[·10 ⁹ /L]				22							22	19	86	
Sample A		0,029	0,018	64	22		CVP	0,029	0,01	100%	0	0,058	22	19	86
(12) Beckman Coulter		0,031	0,02	63	11	0							11		
Other					11	0							11		
							2x 0, 2x 63, 2x 88, 1x 177, 4x 999								
Sample B		0,03	0,021	71	22		CVP	0,03	0,011	100%	0	0,06	22	20	91
(12) Beckman Coulter		0,031	0,02	66	11	0							11		
Other					11	0							11		
							2x 0, 2x 63, 2x 88, 1x 177, 4x 999								
(650) Naive Th lymphocytes (abs. count)															
	[·10 ⁹ /L]				12							12	11	92	
Sample A		0,206	0,095	46	12		CVP	0,206	0,067	100%	0	0,412	12	11	92
(12) Beckman Coulter		0,183	0,1	55	8	0							8		
Other					4	0							4		
							1x 63, 1x 88, 1x 177, 1x 999								
Sample B		0,137	0,075	55	12		CVP	0,137	0,053	100%	0	0,274	12	11	92
(12) Beckman Coulter		0,132	0,042	32	8	0							8		
Other					4	0							4		
							1x 63, 1x 88, 1x 177, 1x 999								