

EQA round: TM2/24 - Tumour Markers

Deadline: 30.4.2024

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

RoM = robust average	AV = assigned value	D _{max} = acceptable difference
SD = standard deviation	CVPG = consensus of the participants' groups	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			
(208) β-2-microglobulin	[mg/L]				17							14	13	93
Sample A												14	13	93
Other					17	0						14		
							1x 1/36, 1x 4/164, 1x 6/1, 1x 6/5, 3x 6/58, 4x 6/60, 1x 6/75, 1x 6/91, 1x 6/149, 1x 6/162, 2x 6/179							
Sample B												14	14	100
Other					17	0						14		
							1x 1/36, 1x 4/164, 1x 6/1, 1x 6/5, 3x 6/58, 4x 6/60, 1x 6/75, 1x 6/91, 1x 6/149, 1x 6/162, 2x 6/179							
(185) AFP	[µg/L]				27							27	23	85
Sample A		53,1	5,6	11	27							27	24	89
(4) LIA (CLIA, CMIA, ECLIA, LOCI); (12) Beckman Coulter		46,7	5,9	13	7	0	CVPG 48,1	1,1	20%	38,4	57,8	7		
(4) LIA (CLIA, CMIA, ECLIA, LOCI); (60) Roche		55,4	3,4	6,1	14	0	CVPG 56,5	0,48	20%	45,2	67,8	14		
Other					6	0						6		
							3x 4/1, 1x 4/162, 2x 4/179							
Sample B		75,6	8	11	27							27	25	93
(4) LIA (CLIA, CMIA, ECLIA, LOCI); (12) Beckman Coulter		69,6	6	8,6	7	0	CVPG 70	1,4	20%	56	84	7		
(4) LIA (CLIA, CMIA, ECLIA, LOCI); (60) Roche		80,2	5,7	7,1	14	0	CVPG 82,4	0,75	20%	65,9	98,9	14		
Other					6	0						6		
							3x 4/1, 1x 4/162, 2x 4/179							
(181) CA 15-3	[kU/L]				24							24	20	83
Sample A		12,5	2,2	18	24							24	20	83
(4) LIA (CLIA, CMIA, ECLIA, LOCI); (60) Roche		13,8	1,4	9,9	12	0	CVPG 13,5	0,11	18%	11	16	12		
Other					12	0						12		
							1x 3/24, 4x 4/1, 4x 4/12, 1x 4/162, 2x 4/179							
Sample B		39,4	6,5	16	24							24	23	96
(4) LIA (CLIA, CMIA, ECLIA, LOCI); (60) Roche		42,2	2,4	5,7	12	0	CVPG 42,3	0,33	18%	34,6	50	12		
Other					12	0						12		
							1x 3/24, 4x 4/1, 4x 4/12, 1x 4/162, 2x 4/179							
(182) CA 19-9	[kU/L]				27							27	25	93
Sample A		39,2	12	30	27							27	25	93
(4) LIA (CLIA, CMIA, ECLIA, LOCI); (12) Beckman Coulter		37,9	7,3	19	6	0	CVPG 40,3	1,1	20%	32,2	48,4	6		
(4) LIA (CLIA, CMIA, ECLIA, LOCI); (60) Roche		32,5	2,9	9	15	0	CVPG 30,7	0,21	20%	24,5	36,9	15		
Other					6	0						6		
							3x 4/1, 1x 4/162, 2x 4/179							
Sample B		9,95	2,7	27	27							27	27	100
(4) LIA (CLIA, CMIA, ECLIA, LOCI); (12) Beckman Coulter		7,8	0,59	7,6	6	0	CVPG 7,43	0,21	±2,8	4,63	10,3	6		
(4) LIA (CLIA, CMIA, ECLIA, LOCI); (60) Roche		9,1	0,86	9,5	15	0	CVPG 8,63	0,091	±2,8	5,83	11,5	15		
Other					6	0						6		
							3x 4/1, 1x 4/162, 2x 4/179							
(183) CA 72-4	[kU/L]				25							23	23	100
Sample A		1,4	0,17	12	25							23	23	100
(4) LIA (CLIA, CMIA, ECLIA, LOCI); (60) Roche		1,42	0,14	10	23	0	CVPG 1,45	0,021	22%	1,13	1,77	23		
Other					2	0						0		
							2x 4/73							
Sample B		1,94	0,21	11	25							25	25	100
(4) LIA (CLIA, CMIA, ECLIA, LOCI); (60) Roche		1,91	0,18	9,5	23	0	CVPG 1,92	0,023	22%	1,49	2,35	23		
Other					2	0						2		
							2x 4/73							
(180) CA 125	[kU/L]				27							26	24	92
Sample A		26,5	6,3	24	27							26	24	92
(4) LIA (CLIA, CMIA, ECLIA, LOCI); (1) Abbott		32,6	0,67	2	5	0	CVPG 31,8	0,39	20%	25,4	38,2	5		
(4) LIA (CLIA, CMIA, ECLIA, LOCI); (60) Roche		27,3	1,8	6,8	14	0	CVPG 26	0,24	20%	20,8	31,2	14		
Other					8	0						7		
							1x 3/24, 1x 3/25, 3x 4/12, 1x 4/162, 2x 4/179							
Sample B		13	2,1	16	27							26	26	100
(4) LIA (CLIA, CMIA, ECLIA, LOCI); (1) Abbott		16,4	0,74	4,5	5	0	CVPG 16,2	0,23	20%	12,9	19,5	5		
(4) LIA (CLIA, CMIA, ECLIA, LOCI); (60) Roche		12,6	0,59	4,6	14	0	CVPG 12,3	0,089	20%	9,84	14,8	14		
Other					8	0						7		
							1x 3/24, 1x 3/25, 3x 4/12, 1x 4/162, 2x 4/179							

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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			
(189) CEA	[µg/L]				27							27	24	89
Sample A		3,55	0,57	16	27							27	24	89
(4) LIA (CLIA, CMIA, ECLIA, LOCI); (12) Beckman Coulter		3,3	0,29	8,8	5	0	CVPG	3,39	0,071	16%	2,84	3,94	5	
(4) LIA (CLIA, CMIA, ECLIA, LOCI); (60) Roche		3,76	0,25	6,6	13	0	CVPG	3,63	0,022	16%	3,04	4,22	13	
Other					9	0							9	
								4x 4/1, 1x 4/162, 4x 4/179						
Sample B		10,3	1,5	14	27							27	27	100
(4) LIA (CLIA, CMIA, ECLIA, LOCI); (12) Beckman Coulter		8,73	0,34	3,9	5	0	CVPG	9,14	0,18	16%	7,67	10,7	5	
(4) LIA (CLIA, CMIA, ECLIA, LOCI); (60) Roche		10,7	0,4	3,7	13	0	CVPG	10,6	0,053	16%	8,9	12,3	13	
Other					9	0							9	
								4x 4/1, 1x 4/162, 4x 4/179						
(184) CYFRA 21-1	[µg/L]				23							22	18	82
Sample A		2,46	0,51	21	23							22	19	86
(4) LIA (CLIA, CMIA, ECLIA, LOCI); (1) Abbott		1,83	0,1	5,7	5	0	CVPG	1,86	0,089	18%	1,52	2,2	5	
(4) LIA (CLIA, CMIA, ECLIA, LOCI); (60) Roche		2,67	0,22	8,2	16	0	CVPG	2,6	0,031	18%	2,13	3,07	16	
Other					2	0							1	
								1x 3/24, 1x 4/73						
Sample B		94,5	4,4	4,6	23							22	21	95
(4) LIA (CLIA, CMIA, ECLIA, LOCI); (1) Abbott		97,8	3,2	3,3	5	0	CVPG	97,6	2	18%	80	116	5	
(4) LIA (CLIA, CMIA, ECLIA, LOCI); (60) Roche		93,8	2,6	2,8	16	0	CVPG	93,9	0,78	18%	76,9	111	16	
Other					2	0							1	
								1x 3/24, 1x 4/73						
(186) hCG	[U/L]				30							30	27	90
Sample A		58,6	6,1	10	30							30	28	93
(4) LIA (CLIA, CMIA, ECLIA, LOCI); (12) Beckman Coulter		52,9	17	33	8	0	CVPG	61,2	1	18%	50,1	72,3	8	
(4) LIA (CLIA, CMIA, ECLIA, LOCI); (60) Roche		60	2,4	4,1	9	0	CVPG	59,4	0,3	18%	48,7	70,1	9	
(4) LIA (CLIA, CMIA, ECLIA, LOCI); (210) Roche HCG		54,5	2,8	5,2	7	0	CVPG	55,8	1,6	18%	45,7	65,9	7	
STAT														
Other					6	0							6	
								1x 3/25, 2x 4/1, 1x 4/162, 2x 4/179						
Sample B		13,3	1,4	11	30							30	29	97
(4) LIA (CLIA, CMIA, ECLIA, LOCI); (12) Beckman Coulter		14,7	1,3	8,5	8	0	CVPG	14,5	0,25	18%	11,8	17,2	8	
(4) LIA (CLIA, CMIA, ECLIA, LOCI); (60) Roche		13	0,59	4,5	9	0	CVPG	12,8	0,075	18%	10,4	15,2	9	
(4) LIA (CLIA, CMIA, ECLIA, LOCI); (210) Roche HCG		12	0,59	4,9	7	0	CVPG	12,3	0,38	18%	10	14,6	7	
STAT														
Other					6	0							6	
								1x 3/25, 2x 4/1, 1x 4/162, 2x 4/179						
(206) Calcitonin	[ng/L]				7							6	6	100
Sample A		145	16	11	7							6	6	100
(4) LIA (CLIA, CMIA, ECLIA, LOCI); (60) Roche		143	13	9	6	0	CVPG	142	2,4	31%	97,9	187	6	
Other					1	0							0	
								1x 1/36						
Sample B		25	3,7	15	7							6	6	100
(4) LIA (CLIA, CMIA, ECLIA, LOCI); (60) Roche		25,8	2,6	10	6	0	CVPG	21,6	1,4	60%	8,64	34,6	6	
Other					1	0							0	
								1x 1/36						
(194) NSE	[µg/L]				23							22	21	95
Sample A		50,2	7,6	15	23							22	21	95
(4) LIA (CLIA, CMIA, ECLIA, LOCI); (60) Roche		51	4,8	9,5	17	0	CVPG	51,9	0,49	30%	36,3	67,5	17	
Other					6	0							5	
								2x 3/24, 3x 4/1, 1x 4/73						
Sample B		8,98	1,3	14	23							22	22	100
(4) LIA (CLIA, CMIA, ECLIA, LOCI); (60) Roche		8,95	0,79	8,8	17	0	CVPG	8,66	0,12	30%	6,06	11,3	17	
Other					6	0							5	
								2x 3/24, 3x 4/1, 1x 4/73						
(187) p2PSA	[ng/L]				1							1	1	100
Sample A					1							1	1	100
Other					1	0							1	
								1x 4/12						
Sample B					1							1	1	100
Other					1	0							1	
								1x 4/12						
(191) PSA	[µg/L]				29							29	28	97
Sample A		2,44	0,33	13	29							29	28	97
(4) LIA (CLIA, CMIA, ECLIA, LOCI); (1) Abbott		2,03	0,07	3,4	5	0	CVPG	2,01	0,023	15%	1,7	2,32	5	

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Test Group	[unit]	RoM	SD	CV [%]	N _{tot}	N _{out}	Comparability					N _{eva}	N _{suc}	S _{rel} [%]	
							AV	U _{AV}	D _{max}	LL	UL				
(4) LIA (CLIA, CMIA, ECLIA, LOCI); (12) Beckman Coulter															
		2,85	0,059	2,1	5	0	CVPG	2,84	0,06	15%	2,41	3,27	5		
(4) LIA (CLIA, CMIA, ECLIA, LOCI); (60) Roche Other															
		2,54	0,15	6,1	12	0	CVPG	2,53	0,013	15%	2,15	2,91	12		
					7	0	1x 4/162, 4x 4/179, 2x 4/195					7			
Sample B															
		7,65	1,1	14	29								29	29	100
(4) LIA (CLIA, CMIA, ECLIA, LOCI); (1) Abbott															
		6,33	0,11	1,7	5	0	CVPG	6,26	0,084	15%	5,32	7,2	5		
(4) LIA (CLIA, CMIA, ECLIA, LOCI); (12) Beckman Coulter															
		9,02	0,17	1,9	5	0	CVPG	8,78	0,2	15%	7,46	10,1	5		
(4) LIA (CLIA, CMIA, ECLIA, LOCI); (60) Roche Other															
		8,01	0,49	6,1	12	0	CVPG	7,77	0,051	15%	6,6	8,94	12		
					7	0	1x 4/162, 4x 4/179, 2x 4/195					7			
(198) free-PSA [µg/L]															
					24								24	22	92
Sample A															
		1,64	0,2	12	24								24	23	96
(4) LIA (CLIA, CMIA, ECLIA, LOCI); (1) Abbott															
		1,82	0,063	3,5	5	0	CVPG	1,75	0,017	16%	1,47	2,03	5		
(4) LIA (CLIA, CMIA, ECLIA, LOCI); (60) Roche Other															
		1,54	0,11	7,4	10	0	CVPG	1,49	0,011	16%	1,25	1,73	10		
					9	0	3x 4/12, 4x 4/179, 2x 4/195					9			
Sample B															
		5,21	0,69	13	24								24	23	96
(4) LIA (CLIA, CMIA, ECLIA, LOCI); (1) Abbott															
		5,83	0,077	1,3	5	0	CVPG	5,67	0,073	16%	4,76	6,58	5		
(4) LIA (CLIA, CMIA, ECLIA, LOCI); (60) Roche Other															
		4,85	0,34	7	10	0	CVPG	4,58	0,044	16%	3,84	5,32	10		
					9	0	3x 4/12, 4x 4/179, 2x 4/195					9			
(201) S-100 [µg/L]															
					8								7	7	100
Sample A															
		13,6	4,1	30	8								7	7	100
(4) LIA (CLIA, CMIA, ECLIA, LOCI); (60) Roche Other															
		15,8	0,79	5	7	0	CVPG	13,7	0,21	32%	9,31	18,1	7		
					1	0	1x 2/98					0			
Sample B															
		1,3	0,067	5,2	8								7	7	100
(4) LIA (CLIA, CMIA, ECLIA, LOCI); (60) Roche Other															
		1,29	0,059	4,6	7	0	CVPG	1,13	0,012	32%	0,768	1,5	7		
					1	0	1x 2/98					0			
(195) SCCA [µg/L]															
					14								12	9	75
Sample A															
		4,88	0,83	17	14								12	10	83
(4) LIA (CLIA, CMIA, ECLIA, LOCI); (1) Abbott															
		4,95	0,074	1,5	5	0	CVPG	5,02	0,12	32%	3,41	6,63	5		
(4) LIA (CLIA, CMIA, ECLIA, LOCI); (60) Roche Other															
		4,41	1,1	24	7	0	CVPG	4,98	0,082	32%	3,38	6,58	7		
					2	0	1x 4/73, 1x 4/162					0			
Sample B															
		1,41	0,3	21	14								12	10	83
(4) LIA (CLIA, CMIA, ECLIA, LOCI); (1) Abbott															
		1,3	0	0	5	0	CVPG	1,28	0,049	32%	0,87	1,69	5		
(4) LIA (CLIA, CMIA, ECLIA, LOCI); (60) Roche Other															
		1,15	0,7	61	7	0	CVPG	1,53	0,041	32%	1,04	2,02	7		
					2	0	1x 4/73, 1x 4/162					0			
(207) Thyreoglobulin [µg/L]															
					12								12	12	100
Sample A															
		70,1	8,4	12	12								12	12	100
(4) LIA (CLIA, CMIA, ECLIA, LOCI); (60) Roche Other															
		72,7	2,6	3,5	5	0	CVPG	71,9	0,59	30%	50,3	93,5	5		
					7	0	2x 3/24, 3x 4/12, 1x 4/29, 1x 4/164					7			
Sample B															
		26,6	5	19	12								12	12	100
(4) LIA (CLIA, CMIA, ECLIA, LOCI); (60) Roche Other															
		29,9	0,99	3,3	5	0	CVPG	29,7	0,27	30%	20,7	38,7	5		
					7	0	2x 3/24, 3x 4/12, 1x 4/29, 1x 4/164					7			