

Summary statistics - quantitative results

(Groups: measurement principle, manufacturer of kit)

Filter: Czech Republic, minimal size of groups n = 5

EQA round: TM3/18 - Tumour Markers

Dead line: 07.08.2018

RoM = robust average	AV = assigned value	Dmax = acceptable percent difference
SD = standard deviation	CRV = certified reference value	LL = lower limit
CV = coefficient of variation	RV = reference value	UL = upper limit
Ntot = total number of participants	CVE = consensus value from experts	Neva = number of evaluated participants
Nout = number of results excluded before calculation	CVP = consensus value from all participants	Nsuc = number of successful participants
	CVPG = consensus value from participants groups	Srel = success (relative)
	U _{AV} = expanded uncertainty of the assigned value (k = 2)	

Test	[unit]	Comparability					Comparability			N _{eva}	N _{suc}	S _{rel}	
		RoM	SD	CV [%]	N _{tot}	N _{out}	AV	U _{AV}	D _{max}				LL
(180) CA 125					38						37	37	100%
Samples and groups	[kU/L]												
Sample A		14,3	1,8	13	38						37	37	100%
(4) LIA (CLIA, CMIA, ECLIA); (1) Abbott		15,8	0,94	5,9	14	0	CVPG	15,7	0,24	20%	12,5	18,9	14
(4) LIA (CLIA, CMIA, ECLIA); (60) Roche		14,2	1,0	7,1	14	0	CVPG	13,8	0,16	20%	11	16,6	14
Other					10	0							9
								1x 3/25, 4x 4/12, 1x 4/29, 4x 4/179					
Sample B		48,0	9,2	19	38						37	37	100%
(4) LIA (CLIA, CMIA, ECLIA); (1) Abbott		56,9	3,1	5,5	14	0	CVPG	56,6	0,69	20%	45,2	68	14
(4) LIA (CLIA, CMIA, ECLIA); (60) Roche		47,2	3,0	6,3	14	0	CVPG	45,5	0,47	20%	36,4	54,6	14
Other					10	0							9
								1x 3/25, 4x 4/12, 1x 4/29, 4x 4/179					
(181) CA 15-3					34						34	33	97%
Samples and groups	[kU/L]												
Sample A		25,9	4,7	18	34						34	34	100%
(4) LIA (CLIA, CMIA, ECLIA); (1) Abbott		26,5	0,89	3,4	9	0	CVPG	27,1	0,45	18%	22,2	32	9
(4) LIA (CLIA, CMIA, ECLIA); (12) Beckman Coulter		15,0	1,4	9,4	6	0	CVPG	15,1	0,45	18%	12,3	17,9	6
(4) LIA (CLIA, CMIA, ECLIA); (60) Roche		28,9	2,4	8,2	13	0	CVPG	28,8	0,26	18%	23,6	34	13
(4) LIA (CLIA, CMIA, ECLIA); (179) Siemens (Bayer)		23,9	1,2	5,0	5	0	CVPG	25,4	0,46	18%	20,8	30	5
Other					1	0							1
								1x 4/29					
Sample B		12,0	2,0	17	34						34	33	97%
(4) LIA (CLIA, CMIA, ECLIA); (1) Abbott		11,6	0,37	3,2	9	0	CVPG	11,5	0,22	18%	9,43	13,6	9
(4) LIA (CLIA, CMIA, ECLIA); (12) Beckman Coulter		9,42	0,17	1,8	6	0	CVPG	9,21	0,29	18%	7,55	10,9	6
(4) LIA (CLIA, CMIA, ECLIA); (60) Roche		13,6	1,4	10	13	0	CVPG	13,5	0,14	18%	11	16	13
(4) LIA (CLIA, CMIA, ECLIA); (179) Siemens (Bayer)		11,9	0,82	6,9	5	0	CVPG	12,1	0,25	18%	9,92	14,3	5
Other					1	0							1
								1x 4/29					
(182) CA 19-9					39						39	38	97%
Samples and groups	[kU/L]												
Sample A		199	210	100	39						39	39	100%
(4) LIA (CLIA, CMIA, ECLIA); (1) Abbott		487	41	8,3	11	0	CVPG	487	12	20%	389	585	11
(4) LIA (CLIA, CMIA, ECLIA); (12) Beckman Coulter		87,6	5,1	5,8	6	0	CVPG	88,3	2,0	20%	70,6	106	6
(4) LIA (CLIA, CMIA, ECLIA); (60) Roche		62,4	2,7	4,3	14	0	CVPG	62,1	0,42	20%	49,6	74,6	14
(4) LIA (CLIA, CMIA, ECLIA); (179) Siemens (Bayer)		157	10	6,4	6	0	CVPG	161	2,7	20%	128	194	6
Other					2	0							2
								1x 3/25, 1x 4/29					
Sample B		68,0	64	94	39						39	38	97%
(4) LIA (CLIA, CMIA, ECLIA); (1) Abbott		158	15	9,7	11	0	CVPG	163	4,6	20%	130	196	11
(4) LIA (CLIA, CMIA, ECLIA); (12) Beckman Coulter		32,8	0,52	1,6	6	0	CVPG	32,8	0,72	20%	26,2	39,4	6
(4) LIA (CLIA, CMIA, ECLIA); (60) Roche		26,3	1,1	4,1	14	0	CVPG	26,1	0,20	20%	20,8	31,4	14
(4) LIA (CLIA, CMIA, ECLIA); (179) Siemens (Bayer)		55,7	2,5	4,5	6	0	CVPG	56,1	1,0	20%	44,8	67,4	6
Other					2	0							2
								1x 3/25, 1x 4/29					
(183) CA 72-4					23						21	20	95%
Samples and groups	[kU/L]												
Sample A		3,09	0,29	9,5	23						21	20	95%
(4) LIA (CLIA, CMIA, ECLIA); (60) Roche		3,07	0,28	9,1	21	0	CVPG	3,18	0,057	20%	2,54	3,82	21
Other					2	0							0
								1x 1/164, 1x 4/12					
Sample B		5,43	0,44	8,1	23						21	21	100%
(4) LIA (CLIA, CMIA, ECLIA); (60) Roche		5,41	0,41	7,6	21	0	CVPG	5,56	0,087	20%	4,44	6,68	21
Other					2	0							0
								1x 1/164, 1x 4/12					

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EQA round: TM3/18 - Tumour Markers

Dead line: 07.08.2018

Test	[unit]						Comparability							
		RoM	SD	CV [%]	N _{tot}	N _{out}	AV	U _{AV}	D _{max}	LL	UL	N _{eva}	N _{suc}	S _{rel}
(184) CYFRA 21-1					17							17	16	94%
Samples and groups	[µg/L]													
Sample A		10,5	0,66	6,3	17							17	17	100%
(4) LIA (CLIA, CMIA, ECLIA); (1) Abbott		10,3	0,65	6,4	6	0	CVPG	10	0,33	18%	8,2	11,8	6	
(4) LIA (CLIA, CMIA, ECLIA); (60) Roche		10,7	0,67	6,2	11	0	CVPG	10,2	0,15	18%	8,36	12,1	11	
Sample B		8,45	0,62	7,3	17							17	16	94%
(4) LIA (CLIA, CMIA, ECLIA); (1) Abbott		7,95	0,67	8,4	6	0	CVPG	7,65	0,32	18%	6,27	9,03	6	
(4) LIA (CLIA, CMIA, ECLIA); (60) Roche		8,70	0,55	6,4	11	0	CVPG	8,17	0,11	18%	6,69	9,65	11	
(185) AFP					37							37	36	97%
Samples and groups	[µg/L]													
Sample A		39,6	3,3	8,2	37							37	36	97%
(4) LIA (CLIA, CMIA, ECLIA); (1) Abbott		38,4	1,6	4,1	10	0	CVPG	38,5	0,37	20%	30,8	46,2	10	
(4) LIA (CLIA, CMIA, ECLIA); (12) Beckman Coulter		36,6	2,9	7,9	5	0	CVPG	35,1	0,96	20%	28	42,2	5	
(4) LIA (CLIA, CMIA, ECLIA); (60) Roche		42,4	1,9	4,5	13	0	CVPG	41,6	0,38	20%	33,2	50	13	
(4) LIA (CLIA, CMIA, ECLIA); (179) Siemens (Bayer)		38,2	3,9	10	6	0	CVPG	37,8	0,65	20%	30,2	45,4	6	
Other					3	0							3	
														1x 3/24, 1x 3/25, 1x 4/29
Sample B		17,8	1,3	7,3	37							37	37	100%
(4) LIA (CLIA, CMIA, ECLIA); (1) Abbott		17,0	0,91	5,4	10	0	CVPG	17,2	0,13	20%	13,7	20,7	10	
(4) LIA (CLIA, CMIA, ECLIA); (12) Beckman Coulter		17,1	1,1	6,2	5	0	CVPG	16,3	0,49	20%	13	19,6	5	
(4) LIA (CLIA, CMIA, ECLIA); (60) Roche		18,7	0,92	4,9	13	0	CVPG	18,3	0,17	20%	14,6	22	13	
(4) LIA (CLIA, CMIA, ECLIA); (179) Siemens (Bayer)		17,8	1,8	10	6	0	CVPG	17,7	0,37	20%	14,1	21,3	6	
Other					3	0							3	
														1x 3/24, 1x 3/25, 1x 4/29
(186) hCG					44							44	39	89%
Samples and groups	[U/L]													
Sample A		12,0	1,6	13	44							44	42	95%
(4) LIA (CLIA, CMIA, ECLIA); (1) Abbott		10,4	0,71	6,8	11	0	CVPG	10,8	0,19	18%	8,85	12,8	11	
(4) LIA (CLIA, CMIA, ECLIA); (12) Beckman Coulter		12,8	0,37	2,9	7	0	CVPG	12,8	0,21	18%	10,4	15,2	7	
(4) LIA (CLIA, CMIA, ECLIA); (60) Roche		13,0	1,0	7,8	14	0	CVPG	12,9	0,10	18%	10,5	15,3	14	
(4) LIA (CLIA, CMIA, ECLIA); (179) Siemens (Bayer)		11,6	1,5	13	6	0	CVPG	12,5	0,29	18%	10,2	14,8	6	
Other					6	0							6	
														1x 3/25, 2x 4/29, 3x 4/210
Sample B		2,20	0,64	29	44							44	40	91%
(4) LIA (CLIA, CMIA, ECLIA); (1) Abbott		2,25	0,39	17	11	0	CVPG	2,34	0,080	100%	0	4,68	11	
(4) LIA (CLIA, CMIA, ECLIA); (12) Beckman Coulter		2,80	0,30	11	7	0	CVPG	2,72	0,061	18%	2,23	3,21	7	
(4) LIA (CLIA, CMIA, ECLIA); (60) Roche		1,81	0,18	10	14	0	CVPG	1,78	0,021	100%	0	3,56	14	
(4) LIA (CLIA, CMIA, ECLIA); (179) Siemens (Bayer)		2,90	0,44	15	6	0	CVPG	3,48	0,23	18%	2,85	4,11	6	
Other					6	0							6	
														1x 3/25, 2x 4/29, 3x 4/210
(189) CEA					41							41	38	93%
Samples and groups	[µg/L]													
Sample A		5,65	0,54	9,6	41							41	39	95%
(4) LIA (CLIA, CMIA, ECLIA); (1) Abbott		5,98	0,43	7,1	13	0	CVPG	5,99	0,076	16%	5,03	6,95	13	
(4) LIA (CLIA, CMIA, ECLIA); (12) Beckman Coulter		5,30	0,44	8,4	7	0	CVPG	5,64	0,13	16%	4,73	6,55	7	
(4) LIA (CLIA, CMIA, ECLIA); (60) Roche		5,85	0,16	2,8	13	0	CVPG	5,81	0,035	16%	4,88	6,74	13	
(4) LIA (CLIA, CMIA, ECLIA); (179) Siemens (Bayer)		4,46	0,64	14	6	0	CVPG	4,21	0,084	16%	3,53	4,89	6	
Other					2	0							2	
														1x 3/25, 1x 4/29
Sample B		29,8	5,5	18	41							41	40	98%
(4) LIA (CLIA, CMIA, ECLIA); (1) Abbott		33,2	1,8	5,5	13	0	CVPG	33	0,38	16%	27,7	38,3	13	
(4) LIA (CLIA, CMIA, ECLIA); (12) Beckman Coulter		30,1	3,3	11	7	0	CVPG	31,7	0,80	16%	26,6	36,8	7	
(4) LIA (CLIA, CMIA, ECLIA); (60) Roche		23,7	1,8	7,5	13	0	CVPG	23,9	0,24	16%	20	27,8	13	
(4) LIA (CLIA, CMIA, ECLIA); (179) Siemens (Bayer)		32,4	1,9	6,0	6	0	CVPG	31,4	0,53	16%	26,3	36,5	6	
Other					2	0							2	
														1x 3/25, 1x 4/29

Summary statistics - quantitative results

(Groups: measurement principle, manufacturer of kit)

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EQA round: TM3/18 - Tumour Markers

Dead line: 07.08.2018

Test	[unit]						Comparability						N _{eva}	N _{suc}	S _{rel}
		RoM	SD	CV [%]	N _{tot}	N _{out}	AV	U _{AV}	D _{max}	LL	UL				
(191) PSA					46								46	44	96%
Samples and groups	[µg/L]														
Sample A		7,16	1,1	16	46								46	44	96%
(4) LIA (CLIA, CMIA, ECLIA); (1) Abbott		6,02	0,31	5,1	13	0	CVPG	5,9	0,071	15%	5,01	6,79	13		
(4) LIA (CLIA, CMIA, ECLIA); (12) Beckman Coulter		8,49	0,50	5,9	9	0	CVPG	8,65	0,13	15%	7,35	9,95	9		
(4) LIA (CLIA, CMIA, ECLIA); (60) Roche		7,58	0,47	6,2	17	0	CVPG	7,62	0,047	15%	6,47	8,77	17		
Other					7	0							7		
								2x 4/29, 1x 4/149, 4x 4/179							
Sample B		2,58	0,42	16	46								46	45	98%
(4) LIA (CLIA, CMIA, ECLIA); (1) Abbott		2,09	0,15	7,4	13	0	CVPG	2,01	0,030	15%	1,7	2,32	13		
(4) LIA (CLIA, CMIA, ECLIA); (12) Beckman Coulter		3,02	0,19	6,4	9	0	CVPG	3,09	0,048	15%	2,62	3,56	9		
(4) LIA (CLIA, CMIA, ECLIA); (60) Roche		2,78	0,16	5,9	17	0	CVPG	2,76	0,018	15%	2,34	3,18	17		
Other					7	0							7		
								2x 4/29, 1x 4/149, 4x 4/179							
(194) NSE					18								18	17	94%
Samples and groups	[µg/L]														
Sample A		8,34	0,99	12	18								18	18	100%
(4) LIA (CLIA, CMIA, ECLIA); (60) Roche		8,01	0,60	7,5	15	0	CVPG	7,8	0,11	30%	5,46	10,2	15		
Other					3	0							3		
								3x 4/164							
Sample B		8,22	1,2	14	18								18	17	94%
(4) LIA (CLIA, CMIA, ECLIA); (60) Roche		7,85	0,72	9,2	15	0	CVPG	7,43	0,11	30%	5,2	9,66	15		
Other					3	0							3		
								3x 4/164							
(195) SCCA					11								10	10	100%
Samples and groups	[µg/L]														
Sample A		3,94	0,55	14	11								10	10	100%
(4) LIA (CLIA, CMIA, ECLIA); (1) Abbott		4,04	0,24	6,1	8	0	CVPG	4,15	0,088	23%	3,19	5,11	8		
Other					3	0							2		
								1x 3/24, 1x 3/98, 1x 4/60							
Sample B		1,53	0,26	17	11								10	10	100%
(4) LIA (CLIA, CMIA, ECLIA); (1) Abbott		1,55	0,074	4,8	8	0	CVPG	1,59	0,037 ±0,7		0,89	2,29	8		
Other					3	0							2		
								1x 3/24, 1x 3/98, 1x 4/60							
(196) TPA					5								4	4	100%
Samples and groups	[U/L]														
Sample A		1350	150	11	5								4	4	100%
Other					5	0							4		
								1x 2/43, 4x 4/164							
Sample B		1310	160	12	5								4	4	100%
Other					5	0							4		
								1x 2/43, 4x 4/164							
(198) free-PSA					43								43	42	98%
Samples and groups	[µg/L]														
Sample A		5,63	0,55	9,8	43								43	42	98%
(4) LIA (CLIA, CMIA, ECLIA); (1) Abbott		5,82	0,21	3,6	12	0	CVPG	5,79	0,077	16%	4,86	6,72	12		
(4) LIA (CLIA, CMIA, ECLIA); (12) Beckman Coulter		6,85	0,46	6,7	7	0	CVPG	7,16	0,17	16%	6,01	8,31	7		
(4) LIA (CLIA, CMIA, ECLIA); (60) Roche		5,35	0,31	5,8	17	0	CVPG	5,35	0,041	16%	4,49	6,21	17		
Other					7	0							7		
								2x 4/29, 1x 4/149, 4x 4/179							
Sample B		1,98	0,14	7,3	43								43	43	100%
(4) LIA (CLIA, CMIA, ECLIA); (1) Abbott		1,98	0,09	4,6	12	0	CVPG	1,95	0,024	16%	1,63	2,27	12		
(4) LIA (CLIA, CMIA, ECLIA); (12) Beckman Coulter		2,52	0,10	4,1	7	0	CVPG	2,58	0,064	16%	2,16	3	7		
(4) LIA (CLIA, CMIA, ECLIA); (60) Roche		1,93	0,083	4,3	17	0	CVPG	1,92	0,014	16%	1,61	2,23	17		
Other					7	0							7		
								2x 4/29, 1x 4/149, 4x 4/179							
(201) S-100					10								10	9	90%
Samples and groups	[µg/L]														
Sample A		0,035	0,006	17	10								10	9	90%
(4) LIA (CLIA, CMIA, ECLIA); (60) Roche		0,033	0,002	6,8	9	0	CVPG	0,033	0 ±0,013		0,02	0,046	9		
Other					1	0							1		
								1x 4/164							
Sample B		0,039	0,006	15	10								10	9	90%

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Dead line: 07.08.2018

Test	[unit]	RoM	SD	CV [%]	N _{tot}	N _{out}	Comparability						N _{eva}	N _{suc}	S _{rel}
							AV	U _{AV}	D _{max}	LL	UL				
(201) S-100					10								10	9	90%
Samples and groups	[µg/L]														
Sample B		0,039	0,006	15	10								10	9	90%
(4) LIA (CLIA, CMIA, ECLIA); (60) Roche		0,038	0,003	7,9	9	0	CVPG	0,036	0±0,013	0,023	0,049		9		
Other					1	0							1		
															1x 4/164
(206) Calcitonin					4								3	2	67%
Samples and groups	[ng/L]														
Sample A		6,07	1,9	31	4								3	2	67%
Other					4	0							3		
															1x 1/134, 1x 4/29, 2x 4/164
Sample B		15,0	3,3	22	4								3	3	100%
Other					4	0							3		
															1x 1/134, 1x 4/29, 2x 4/164
(207) Thyreoglobulin					19								19	18	95%
Samples and groups	[µg/L]														
Sample A		9,60	3,1	32	19								19	18	95%
(4) LIA (CLIA, CMIA, ECLIA); (60) Roche		11,5	0,45	3,9	12	0	CVPG	11,5	0,13	30%	8,05	15	12		
Other					7	0							7		
															4x 4/12, 3x 4/29
Sample B		16,6	3,9	23	19								19	19	100%
(4) LIA (CLIA, CMIA, ECLIA); (60) Roche		18,9	0,43	2,3	12	0	CVPG	18,6	0,20	30%	13	24,2	12		
Other					7	0							7		
															4x 4/12, 3x 4/29
(208) beta-2-microglobulin					20								18	17	94%
Samples and groups	[mg/L]														
Sample A		2,95	0,22	7,3	20								18	17	94%
(4) LIA (CLIA, CMIA, ECLIA); (29) Siemens (DPC)		2,76	0,23	8,3	5	0	CVPG	2,85	0,16	21%	2,25	3,45	5		
(6) IMT, IMN; (60) Roche		2,91	0,13	4,6	6	0	CVPG	2,96	0,037	21%	2,33	3,59	6		
Other					9	0							7		
															1x 2/147, 1x 4/12, 1x 4/60, 1x 4/164, 1x 6/1, 1x 6/58, 1x 6/91, 1x 6/149, 1x 6/179
Sample B		4,01	0,43	11	20								18	17	94%
(4) LIA (CLIA, CMIA, ECLIA); (29) Siemens (DPC)		3,69	0,19	5,2	5	0	CVPG	3,68	0,17	21%	2,9	4,46	5		
(6) IMT, IMN; (60) Roche		4,12	0,27	6,7	6	0	CVPG	4,09	0,056	21%	3,23	4,95	6		
Other					9	0							7		
															1x 2/147, 1x 4/12, 1x 4/60, 1x 4/164, 1x 6/1, 1x 6/58, 1x 6/91, 1x 6/149, 1x 6/179
(205) Chromogranin A					3								3	3	100%
Samples and groups	[µg/L]														
Sample A		104	15	15	3								3	3	100%
Other					3	0							3		
															1x 1/185, 2x 3/24
Sample B		143	14	9,7	3								3	3	100%
Other					3	0							3		
															1x 1/185, 2x 3/24

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End of report

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