

Summary statistics - quantitative results

(Groups: measurement principle)

Filter: Slovakia, minimal size of the groups n = 5

EQA round: AKS4/22 - Basic Clinical Chemistry - Serum

Deadline: 14.10.2022

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 the 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					Traceability															
		RoM	SD	CV [%]	N _{tot}	N _{out}	AV	U _{AV}	D _{max}	LL	UL	N _{eva}	N _{suc}	S _{rel}								
(1) Sodium					68							0				68	64	94%				
Samples and groups	[mmol/L]																					
Sample A		127	2,0	1,5	68							0	CRV	128,3	1,9	5%	121	135	68	67	99%	
(2) Indirect ISE		127	2,1	1,7	55	0													55			
(3) Direct ISE		128	1,5	1,1	12	0													12			
Other					1	0													1			
													1x 99									
Sample B		128	2,1	1,6	68							0	CRV	130,7	2,0	5%	124	138	68	65	96%	
(2) Indirect ISE		128	2,1	1,6	55	0													55			
(3) Direct ISE		129	2,6	2,0	12	0													12			
Other					1	0													1			
													1x 99									
(2) Potassium					68							0							68	67	99%	
Samples and groups	[mmol/L]																					
Sample A		3,37	0,05	1,7	68							0	CRV	3,353	0,050	7%	3,11	3,59	68	67	99%	
(2) Indirect ISE		3,37	0,06	1,9	55	0													55			
(3) Direct ISE		3,38	0,03	1,1	12	0													12			
Other					1	0													1			
													1x 99									
Sample B		6,25	0,14	2,2	68							0	CRV	6,28	0,100	7%	5,84	6,72	68	67	99%	
(2) Indirect ISE		6,25	0,15	2,4	55	0													55			
(3) Direct ISE		6,29	0,07	1,2	12	0													12			
Other					1	0													1			
													1x 99									
(3) Chloride					68							68	67	99%					0			
Samples and groups	[mmol/L]																					
Sample A		112	2,1	1,9	68	CVP	112	0,38	7%	104	120	68	67	99%					0			
(3) Indirect ISE		111	2,2	1,9	55	0						55										
(4) Direct ISE		112	2,3	2,1	12	0						12										
Other					1	0						1										
													1x 99									
Sample B		114	2,8	2,5	68	CVP	115	0,43	7%	106	124	68	67	99%					0			
(3) Indirect ISE		114	2,8	2,4	55	0						55										
(4) Direct ISE		115	3,9	3,4	12	0						12										
Other					1	0						1										
													1x 99									
(4) Calcium					65							0							65	63	97%	
Samples and groups	[mmol/L]																					
Sample A		2,91	0,06	2,4	65							0	CRV	2,926	0,047	8%	2,69	3,17	65	64	98%	
(2) Phot. with o-cresolftalexon		2,88	0,09	3,4	8	0													8			
(3) Photom. with arsenazo III		2,91	0,08	2,8	39	0													39			

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		RoM	SD	CV [%]	N _{tot}	N _{out}	AV	U _{AV}	D _{max}	LL	UL	N _{eva}	N _{suc}	S _{rel}	AV	U _{AV}	D _{max}	LL	UL	N _{eva}	N _{suc}	S _{rel}	
(4) Calcium	[mmol/L]				65							0									65	63	97%
Samples and groups																							
Sample A		2,91	0,06	2,4	65							0	CRV	2,926	0,047	8%	2,69	3,17		65	64	98%	
(4) Photomet. with NM-BAPTA		2,91	0,05	1,9	18	0															18		
Sample B		2,77	0,07	2,7	65							0	CRV	2,795	0,046	8%	2,57	3,02		65	63	97%	
(2) Phot. with o-cresolftalexon		2,72	0,10	3,8	8	0															8		
(3) Photom. with arsenazo III		2,79	0,07	2,7	39	0															39		
(4) Photomet. with NM-BAPTA		2,75	0,06	2,2	18	0															18		
(5) Inorganic phosphate	[mmol/L]				63							63	60	95%							0		
Samples and groups																							
Sample A		1,03	0,03	3,0	63	CVP	1,03	,0046	10%	0,927	1,14	63	60	95%							0		
(1) UV-molybdate method		1,03	0,03	3,0	63	0						63											
Sample B		1,82	0,05	3,2	63	CVP	1,83	,0071	10%	1,64	2,02	63	61	97%							0		
(1) UV-molybdate method		1,82	0,05	3,2	63	0						63											
(6) Iron	[µmol/L]				59							59	58	98%							0		
Samples and groups																							
Sample A		40,8	0,94	2,3	59	CVP	41,1	0,13	15%	34,9	47,3	59	58	98%							0		
(2) Method with ferrozine/ferene		40,9	0,85	2,1	43	0						43											
(4) Method with TPTZ		40,6	1,1	2,7	16	0						16											
Sample B		37,3	0,94	2,5	59	CVP	37,7	0,14	15%	32	43,4	59	58	98%							0		
(2) Method with ferrozine/ferene		37,4	0,92	2,4	43	0						43											
(4) Method with TPTZ		37,1	0,97	2,6	16	0						16											
(7) Magnesium	[mmol/L]				64							0									64	63	98%
Samples and groups																							
Sample A		0,806	0,02	3,2	64							0	CRV	0,783	0,012	15%	0,665	0,901		64	64	100%	
(2) Photometry		0,810	0,02	3,4	55	0															55		
(4) UV enzyme method		0,795	0,00	0,93	9	0															9		
Sample B		0,517	0,02	5,1	64							0	CRV	0,488	0,011	asym.	0,414	0,591		64	63	98%	
(2) Photometry		0,522	0,02	5,1	55	0															55		
(4) UV enzyme method		0,490	0,01	3,0	9	0															9		
(8) Lithium	[mmol/L]				7							0									7	6	86%
Samples and groups																							
Sample A		1,46	0,09	6,6	7							0	CRV	1,489	0,022	12%	1,31	1,67		7	6	86%	
Other					7	0															7		
Sample B		1,02	0,05	5,1	7							0	CRV	1,063	0,016	12%	0,935	1,2		7	6	86%	
Other					7	0															7		
														3x 3, 4x 4									
														3x 3, 4x 4									
(9) Total protein	[g/L]				67							0									67	65	97%
Samples and groups																							
Sample A		71,0	1,8	2,5	67							0	CRV	72,1	1,7	9%	65,6	78,6		67	67	100%	
(1) Biuret		71,0	1,8	2,5	67	0															67		
Sample B		87,2	2,3	2,6	67							0	CRV	88,4	2,0	9%	80,4	96,4		67	65	97%	
(1) Biuret		87,2	2,3	2,6	67	0															67		

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Test	[unit]	Comparability					Traceability															
		RoM	SD	CV [%]	N _{tot}	N _{out}	AV	U _{AV}	D _{max}	LL	UL	N _{eva}	N _{suc}	S _{rel}	AV	U _{AV}	D _{max}	LL	UL	N _{eva}	N _{suc}	S _{rel}
(15) Cholesterol					66							0								66	61	92%
Samples and groups	[mmol/L]																					
Sample A		3,91	0,14	3,5	66							0								66	62	94%
(1) Enzyme method CHOD-PAP		3,91	0,14	3,5	66	0							CRV	3,906	0,039	9%	3,55	4,26		66		
Sample B		5,03	0,20	4,0	66							0								66	64	97%
(1) Enzyme method CHOD-PAP		5,03	0,20	4,0	66	0							CRV	5,087	0,051	9%	4,62	5,55		66		
(16) Glucose					71							0								71	70	99%
Samples and groups	[mmol/L]																					
Sample A		3,80	0,15	4,0	71							0	CRV	3,89	0,039	asym.	3,46	4,21		71	71	100%
(1) GOD photometry		3,88	0,12	3,2	22	0														22		
(3) Method with hexokinase		3,76	0,14	3,7	48	0														48		
Other					1	0															1	
Sample B		7,60	0,25	3,3	71							0	CRV	7,846	0,078	asym.	6,98	8,48		71	70	99%
(1) GOD photometry		7,72	0,25	3,2	22	0														22		
(3) Method with hexokinase		7,55	0,24	3,2	48	0														48		
Other					1	0															1	
													1x2									
(17) Uric acid					67							0								67	67	100%
Samples and groups	[µmol/L]																					
Sample A		458	11	2,5	67							0	CRV	456,3	4,6	12%	401	512		67	67	100%
(2) Enzyme-photomet. m.		458	11	2,5	67	0														67		
Sample B		521	13	2,5	67							0	CRV	514,4	5,1	12%	452	577		67	67	100%
(2) Enzyme-photomet. m.		521	13	2,5	67	0														67		
(18) Urea					70							0								70	67	96%
Samples and groups	[mmol/L]																					
Sample A		31,1	0,98	3,1	70							0	CRV	31,96	0,32	15%	27,1	36,8		70	68	97%
(1) UV enzymatic m.(GMD)		31,0	0,99	3,2	69	0														69		
Other					1	0															1	
Sample B		15,6	0,56	3,6	70							0	CRV	15,83	0,16	15%	13,4	18,3		70	68	97%
(1) UV enzymatic m.(GMD)		15,6	0,57	3,6	69	0														69		
Other					1	0															1	
													1x2									
(19) Creatinine					70							0								70	68	97%
Samples and groups	[µmol/L]																					
Sample A		121	5,7	4,7	70							0	CRV	119,6	1,7	13%	104	136		70	69	99%
(1) Jaffe		122	7,4	6,0	41	0														41		
(3) Enzyme		119	3,2	2,7	29	0														29		
Sample B		400	15	3,7	70							0	CRV	397,6	4,0	13%	345	450		70	69	99%
(1) Jaffe		397	18	4,6	41	0														41		
(3) Enzyme		403	9,6	2,4	29	0														29		
(20) Triacylglycerols					65							0								65	64	98%
Samples and groups	[mmol/L]																					
Sample A		1,79	0,06	3,3	65							0	CRV	1,771	0,018	15%	1,5	2,04		65	64	98%

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(20) Triacylglycerols					65							0								65	64	98%	
Samples and groups	[mmol/L]																						
Sample A		1,79	0,06	3,3	65							0	CRV	1,771	0,018	15%	1,5	2,04	65	64	98%		
(1) Photometric enzyme (GPO-PAP)		1,79	0,06	3,3	65	0													65				
Sample B		1,70	0,05	3,4	65							0	CRV	1,72	0,017	15%	1,46	1,98	65	65	100%		
(1) Photometric enzyme (GPO-PAP)		1,70	0,05	3,4	65	0													65				
(21) ALP					68							65	65	100%	CRV				68	68	100%		
Samples and groups	[µkat/L]																						
Sample A		3,61	0,31	8,6	68							65	65	100%	CRV	3,62	0,100	20%	2,89	4,35	68	68	100%
(3) IFCC method; (1) Abbott		3,56	0,09	2,7	9	0	CVPG	3,64	0,037	15%	3,09	4,19	9										
(3) IFCC method		3,61	0,31	8,6	68	0															68		
(3) IFCC method; (46) Erba Lachema		3,78	0,27	7,1	6	0	CVPG	3,67	0,12	15%	3,11	4,23	6										
(3) IFCC method; (58) Beckman Coulter (AU)		3,88	0,21	5,4	22	0	CVPG	3,81	0,075	15%	3,23	4,39	22										
(3) IFCC method; (60) Roche		3,37	0,12	3,7	24	0	CVPG	3,28	0,029	15%	2,78	3,78	24										
Other					7	0							4										
							3x 3/12, 1x 3/162, 3x 3/178																
Sample B		3,29	0,25	7,7	68							65	65	100%	CRV	3,373	0,094	20%	2,69	4,05	68	68	100%
(3) IFCC method; (1) Abbott		3,23	0,03	1,2	9	0	CVPG	3,3	0,037	15%	2,8	3,8	9										
(3) IFCC method		3,29	0,25	7,7	68	0															68		
(3) IFCC method; (46) Erba Lachema		3,52	0,36	10	6	0	CVPG	3,37	0,14	15%	2,86	3,88	6										
(3) IFCC method; (58) Beckman Coulter (AU)		3,48	0,14	3,9	22	0	CVPG	3,42	0,063	15%	2,9	3,94	22										
(3) IFCC method; (60) Roche		3,09	0,14	4,6	24	0	CVPG	3,02	0,027	15%	2,56	3,48	24										
Other					7	0							4										
							3x 3/12, 1x 3/162, 3x 3/178																
(22) alpha-amylase					68							0							68	66	97%		
Samples and groups	[µkat/L]																						
Sample A		5,40	0,31	5,7	68							0							68	67	99%		
(1) IFCC method		5,39	0,30	5,5	67	0							CRV	5,35	0,16	15%	4,54	6,16	67				
Other					1	0														1			
														1x 99									
Sample B		1,97	0,08	4,3	68							0							68	67	99%		
(1) IFCC method		1,97	0,08	4,1	67	0							CRV	2,06	0,056	15%	1,75	2,37	67				
Other					1	0														1			
														1x 99									
(23) AST					70							0							70	67	96%		
Samples and groups	[µkat/L]																						
Sample A		1,74	0,09	5,6	70							0	CRV	1,771	0,045	15%	1,5	2,04	70	68	97%		
(1) IFCC method		1,74	0,09	5,6	70	0													70				
Sample B		3,14	0,18	5,9	70							0	CRV	3,141	0,069	15%	2,66	3,62	70	69	99%		
(1) IFCC method		3,14	0,18	5,9	70	0													70				
(24) ALT					71							0							71	71	100%		
Samples and groups	[µkat/L]																						
Sample A		2,18	0,09	4,5	71							0	CRV	2,213	0,051	15%	1,88	2,55	71	71	100%		
(1) IFCC method		2,18	0,09	4,5	71	0													71				
Sample B		2,67	0,13	4,9	71							0	CRV	2,716	0,060	15%	2,3	3,13	71	71	100%		

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(24) ALT					71							0									71	71	100%
Samples and groups	[µkat/L]																						
Sample B		2,67	0,13	4,9	71							0	CRV	2,716	0,060	15%	2,3	3,13		71	71	100%	
(1) IFCC method		2,67	0,13	4,9	71	0																	
(26) CK					66							0									66	64	97%
Samples and groups	[µkat/L]																						
Sample A		6,72	0,44	6,6	66							0	CRV	7,12	0,18	20%	5,69	8,55		66	65	98%	
(1) IFCC method		6,72	0,44	6,6	66	0																	
Sample B		2,48	0,14	5,8	66							0	CRV	2,66	0,068	20%	2,12	3,2		66	65	98%	
(1) IFCC method		2,48	0,14	5,8	66	0																	
(27) gamma-GT					68							0									68	68	100%
Samples and groups	[µkat/L]																						
Sample A		1,28	0,03	2,8	68							0	CRV	1,32	0,038	15%	1,12	1,52		68	68	100%	
(1) IFCC method		1,28	0,03	2,7	67	0																	
Other					1	0																	
Sample B		1,31	0,03	2,6	68							0	CRV	1,375	0,037	15%	1,16	1,59		68	68	100%	
(1) IFCC method		1,31	0,03	2,6	67	0																	
Other					1	0																	
(28) LD					51							0									51	51	100%
Samples and groups	[µkat/L]																						
Sample A		6,08	0,17	2,8	51							0	CRV	6,04	0,13	18%	4,95	7,13		51	51	100%	
(3) IFCC method		6,08	0,17	2,8	51	0																	
Sample B		6,32	0,17	2,7	51							0	CRV	6,2	0,14	18%	5,08	7,32		51	51	100%	
(3) IFCC method		6,32	0,17	2,7	51	0																	
(29) Lipase					30							28	27	96%							0		
Samples and groups	[µkat/L]																						
Sample A		1,21	0,08	6,7	30							28	27	96%							0		
(0) Not specified; (58) Beckman Coulter (AU)		1,23	0,06	5,6	12	0	CVPG	1,22	0,020	24%	0,927	1,52	12										
(0) Not specified; (60) Roche		1,16	0,02	2,5	11	0	CVPG	1,17	0,016	24%	0,889	1,46	11										
Other					7	0						5											
Sample B		1,45	0,07	5,1	30							28	28	100%							0		
(0) Not specified; (58) Beckman Coulter (AU)		1,45	0,07	4,9	12	0	CVPG	1,44	0,022	24%	1,09	1,79	12										
(0) Not specified; (60) Roche		1,43	0,04	2,9	11	0	CVPG	1,45	0,019	24%	1,1	1,8	11										
Other					7	0						5											
(30) Cholinesterase					27							27	25	93%							0		
Samples and groups	[µkat/L]																						
Sample A		119	6,0	5,1	27		CVP	119	1,2	12%	104	134	27	25	93%					0			
(1) Standard method		119	6,0	5,1	27	0							27										
Sample B		163	9,4	5,7	27		CVP	165	1,8	12%	145	185	27	25	93%					0			
(1) Standard method		163	9,4	5,7	27	0							27										

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(31) Albumin (elpho)					12							12	12	100%									0
Samples and groups	[-]																						
Sample A		0,598	0,03	4,9	12	CVP	0,625	0,012	15%	0,531	0,719	12	12	100%									0
(0) Not specified		0,598	0,03	4,9	12	0						12											
Sample B		0,603	0,03	5,9	12	CVP	0,623	0,014	15%	0,529	0,717	12	12	100%									0
(0) Not specified		0,603	0,03	5,9	12	0						12											
(32) gamma-globulin (elpho)					12							12	12	100%									0
Samples and groups	[-]																						
Sample A		0,143	0,01	7,4	12	CVP	0,136	,0034	30%	0,095	0,177	12	12	100%									0
(0) Not specified		0,143	0,01	7,4	12	0						12											
Sample B		0,136	0,01	8,6	12	CVP	0,131	,0043	30%	0,091	0,171	12	12	100%									0
(0) Not specified		0,136	0,01	8,6	12	0						12											
(35) alpha-amylase pancreatic					11							11	11	100%									0
Samples and groups	[µkat/L]																						
Sample A		4,63	0,24	5,1	11	CVP	4,68	0,049	18%	3,83	5,53	11	11	100%									0
(1) With IFCC calibration		4,63	0,24	5,1	11	0						11											
Sample B		1,26	0,07	5,7	11	CVP	1,28	0,014	18%	1,04	1,52	11	11	100%									0
(1) With IFCC calibration		1,26	0,07	5,7	11	0						11											
(36) Calcium ionised					8							8	8	100%									0
Samples and groups	[mmol/L]																						
Sample A		1,93	0,13	6,5	8	CVP	1,91	0,027	10%	1,71	2,11	8	8	100%									0
(2) Direct ISE		1,93	0,13	6,5	8	0						8											
Sample B		1,66	0,07	4,7	8	CVP	1,65	0,019	10%	1,48	1,82	8	8	100%									0
(2) Direct ISE		1,66	0,07	4,7	8	0						8											

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End of report

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