

Summary statistics - quantitative results

(Groups: measurement principle)

Filter: Slovakia, minimal size of groups n = 5

EQA round: AKS3/18 - Basic Clinical Chemistry - Serum

Dead line: 27.07.2018

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					Traceability															
		RoM	SD	CV [%]	N _{tot}	N _{out}	AV	U _{AV}	D _{max}	LL	UL	N _{eva}	N _{suc}	S _{rel}								
(1) Sodium					26							0				26	25	96%				
Samples and groups	[mmol/L]																					
Sample A		131	1,6	1,2	26							0	CRV	130,3	2,0	5%	123	137	26	26	100%	
(2) Indirect ISE		131	1,8	1,4	19	0													19			
(3) Direct ISE		132	0,82	0,62	5	0													5			
Other					2	0													2			
													2x 99									
Sample B		131	2,3	1,7	26							0	CRV	130,9	2,0	5%	124	138	26	25	96%	
(2) Indirect ISE		131	2,4	1,8	19	0													19			
(3) Direct ISE		133	0,74	0,56	5	0													5			
Other					2	0													2			
													2x 99									
(2) Potassium					26							0							26	25	96%	
Samples and groups	[mmol/L]																					
Sample A		4,94	0,13	2,6	26							0	CRV	4,887	0,079	7%	4,54	5,23	26	26	100%	
(2) Indirect ISE		4,95	0,12	2,4	19	0													19			
(3) Direct ISE		4,95	0,12	2,4	5	0													5			
Other					2	0													2			
													2x 99									
Sample B		5,91	0,16	2,8	26							0	CRV	5,843	0,088	7%	5,43	6,26	26	25	96%	
(2) Indirect ISE		5,89	0,15	2,5	19	0													19			
(3) Direct ISE		5,99	0,16	2,7	5	0													5			
Other					2	0													2			
													2x 99									
(3) Chloride					26							26	26	100%					0			
Samples and groups	[mmol/L]																					
Sample A		112	3,1	2,7	26		CVP	113	0,66	7%	105	121	26	26	100%				0			
(3) Indirect ISE		112	3,3	3,0	18	0							18									
Other					8	0							8									
							3x 2, 4x 4, 1x 99															
Sample B		118	2,9	2,4	26		CVP	119	0,68	7%	110	128	26	26	100%				0			
(3) Indirect ISE		117	3,4	2,9	18	0							18									
Other					8	0							8									
							3x 2, 4x 4, 1x 99															
(4) Calcium					25							0							25	24	96%	
Samples and groups	[mmol/L]																					
Sample A		3,46	0,10	2,9	25							0	CRV	3,471	0,052	8%	3,19	3,75	25	24	96%	
(3) Photom. with arsenazo III		3,42	0,13	3,7	15	0													15			
(4) Complex Ca-NM-BAPTA		3,50	0,05	1,5	6	0													6			
Other					4	0													4			
													4x 2									
Sample B		2,86	0,09	3,2	25							0	CRV	2,846	0,043	8%	2,61	3,08	25	25	100%	

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(4) Calcium					25							0									25	24	96%
Samples and groups	[mmol/L]																						
Sample B		2,86	0,09	3,2	25							0		CRV	2,846	0,043	8%	2,61	3,08	25	25	100%	
(3) Photom. with arsenazo III		2,84	0,10	3,7	15	0														15			
(4) Complex Ca-NM-BAPTA		2,87	0,05	2,1	6	0														6			
Other					4	0														4			
														4x 2									
(5) Inorganic phosphate					24							24	23	96%							0		
Samples and groups	[mmol/L]																						
Sample A		1,04	0,03	3,0	24	CVP	1,03	,0097	10%	0,927	1,14	24	23	96%							0		
(1) UV-molybdate method		1,04	0,03	3,1	23	0						23											
Other					1	0						1											
														1x 2									
Sample B		1,36	0,02	1,8	24	CVP	1,35	,0098	10%	1,21	1,49	24	23	96%							0		
(1) UV-molybdate method		1,36	0,02	1,7	23	0						23											
Other					1	0						1											
														1x 2									
(6) Iron					22							22	21	95%							0		
Samples and groups	[µmol/L]																						
Sample A		38,4	1,3	3,4	22	CVP	38,3	0,26	15%	32,5	44,1	22	22	100%							0		
(2) Method with ferrozine/ferene		38,6	1,8	4,8	13	0						13											
(4) Method with TPTZ		38,3	0,82	2,1	9	0						9											
Sample B		42,6	1,5	3,5	22	CVP	42,7	0,26	15%	36,2	49,2	22	21	95%							0		
(2) Method with ferrozine/ferene		42,9	2,3	5,3	13	0						13											
(4) Method with TPTZ		42,1	0,32	0,76	9	0						9											
(7) Magnesium					24							0									24	22	92%
Samples and groups	[mmol/L]																						
Sample A		0,756	0,03	4,7	24							0		CRV	0,725	0,011	15%	0,616	0,834	24	23	96%	
(2) Photometry		0,756	0,03	4,7	24	0															24		
Sample B		1,40	0,04	3,1	24							0		CRV	1,383	0,021	15%	1,17	1,6	24	23	96%	
(2) Photometry		1,40	0,04	3,1	24	0															24		
(8) Lithium					3							0									3	3	100%
Samples and groups	[mmol/L]																						
Sample A		1,51	0,07	4,7	3							0		CRV	1,58	0,024	12%	1,39	1,77	3	3	100%	
Other					3	0																3	
														1x 3, 2x 4									
Sample B		1,17	0,05	5,0	3							0		CRV	1,2	0,018	12%	1,05	1,35	3	3	100%	
Other					3	0																3	
														1x 3, 2x 4									
(9) Total protein					27							0									27	26	96%
Samples and groups	[g/L]																						
Sample A		67,6	1,4	2,1	27							0		CRV	67,99	0,80	9%	61,8	74,2	27	27	100%	
(1) Biuret		67,6	1,4	2,1	27	0															27		
Sample B		82,8	1,7	2,0	27							0		CRV	84,94	0,99	9%	77,2	92,6	27	26	96%	
(1) Biuret		82,8	1,7	2,0	27	0															27		

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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}	
(10) Albumin					24							24	22	92%							0		
Samples and groups	[g/L]																						
Sample A		43,5	1,5	3,4	24	CVP	43,2	0,39	10%	38,8	47,6	24	23	96%							0		
(1) BCG		43,5	1,5	3,4	24	0						24											
Sample B		52,0	2,0	3,9	24	CVP	51,9	0,41	10%	46,7	57,1	24	23	96%							0		
(1) BCG		52,0	2,0	3,9	24	0						24											
(11) Osmolality					8							8	7	88%							0		
Samples and groups	[mmol/kg]																						
Sample A		308	2,2	0,72	8	CVP	309	2,3	5%	293	325	8	8	100%							0		
(1) Osmometer		308	2,2	0,72	8	0						8											
Sample B		295	7,8	2,6	8	CVP	296	3,1	5%	281	311	8	7	88%							0		
(1) Osmometer		295	7,8	2,6	8	0						8											
(12) Lactate					14							14	14	100%							0		
Samples and groups	[mmol/L]																						
Sample A		1,97	0,06	3,2	14	CVP	1,98	0,023	15%	1,68	2,28	14	14	100%							0		
(3) Photometric enzyme method		1,99	0,06	3,4	8	0						8											
Other					6	0						6											
Sample B		2,92	0,12	4,1	14	CVP	2,95	0,040	15%	2,5	3,4	14	14	100%							0		
(3) Photometric enzyme method		2,95	0,17	5,8	8	0						8											
Other					6	0						6											
(13) Bilirubin total					26							0									26	26	100%
Samples and groups	[µmol/L]																						
Sample A		29,5	2,3	7,9	26							0		CRV	29,6	0,90	21%	23,3	35,9	26	26	100%	
(2) DCA, DPD		29,4	2,2	7,6	22	0															22		
Other					4	0															4		
Sample B		81,5	4,7	5,8	26							0		1x0,3x1 CRV	82,8	2,0	21%	65,4	101	26	26	100%	
(2) DCA, DPD		81,5	4,5	5,6	22	0															22		
Other					4	0															4		
(15) Cholesterol					24							0									24	23	96%
Samples and groups	[mmol/L]																						
Sample A		3,89	0,15	3,8	24							0									24	24	100%
(1) Enzyme method CHOD-PAP		3,89	0,15	3,8	24	0								CRV	3,955	0,040	9%	3,59	4,32	24			
Sample B		5,52	0,22	3,9	24							0									24	23	96%
(1) Enzyme method CHOD-PAP		5,52	0,22	3,9	24	0								CRV	5,672	0,057	9%	5,16	6,19	24			
(16) Glucose					27							0									27	25	93%
Samples and groups	[mmol/L]																						
Sample A		4,15	0,13	3,2	27							0		CRV	4,189	0,042	8%	3,85	4,53	27	26	96%	
(1) GOD photometry		4,20	0,15	3,6	11	0															11		
(3) Method with hexokinase		4,13	0,11	2,6	15	0															15		
Other					1	0															1		
Sample B		5,20	0,15	3,0	27							0		1x2 CRV	5,411	0,054	8%	4,97	5,85	27	25	93%	

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		RoM	SD	CV [%]	N _{tot}	N _{out}	AV	U _{AV}	D _{max}	LL	UL	N _{eva}	N _{suc}	S _{rel}					
(16) Glucose					27							27	25	93%					
Samples and groups	[mmol/L]																		
Sample B		5,20	0,15	3,0	27						CRV	5,411	0,054	8%	4,97	5,85	27	25	93%
(1) GOD photometry		5,27	0,15	2,8	11	0											11		
(3) Method with hexokinase		5,17	0,14	2,6	15	0											15		
Other					1	0											1		
											1x 2								
(17) Uric acid					24							24	24	100%					
Samples and groups	[µmol/L]																		
Sample A		604	18	3,0	24						CRV	614,3	6,1	12%	540	689	24	24	100%
(2) Enzyme-photomet. m.		604	18	3,0	24	0											24		
Sample B		461	12	2,6	24						CRV	471,6	4,7	12%	415	529	24	24	100%
(2) Enzyme-photomet. m.		461	12	2,6	24	0											24		
(18) Urea					26							26	26	100%					
Samples and groups	[mmol/L]																		
Sample A		31,1	1,1	3,7	26						CRV	32,33	0,32	15%	27,4	37,2	26	26	100%
(1) UV enzymatic m.(GMD)		31,1	1,2	3,8	25	0											25		
Other					1	0											1		
											1x 2								
Sample B		14,8	0,78	5,3	26						CRV	14,93	0,15	15%	12,6	17,2	26	26	100%
(1) UV enzymatic m.(GMD)		14,8	0,81	5,5	25	0											25		
Other					1	0											1		
											1x 2								
(19) Creatinine					25							25	25	100%					
Samples and groups	[µmol/L]																		
Sample A		388	14	3,7	25						CRV	391	3,9	13%	340	442	25	25	100%
(2) Jaffé without depro. (with corr.)		388	18	4,6	12	0											12		
(3) Enzyme		390	12	2,9	10	0											10		
Other					3	0											3		
											2x 1, 1x 4								
Sample B		346	13	3,9	25						CRV	351	3,5	13%	305	397	25	25	100%
(2) Jaffé without depro. (with corr.)		347	17	4,9	12	0											12		
(3) Enzyme		347	8,6	2,5	10	0											10		
Other					3	0											3		
											2x 1, 1x 4								
(20) Triglycerides					24							24	24	100%					
Samples and groups	[mmol/L]																		
Sample A		0,915	0,04	4,5	24						CRV	0,928	,0093	15%	0,788	1,07	24	24	100%
(1) Photometric enzyme (GPO-PAP)		0,915	0,04	4,5	24	0											24		
Sample B		2,36	0,09	4,1	24						CRV	2,412	0,024	15%	2,05	2,78	24	24	100%
(1) Photometric enzyme (GPO-PAP)		2,36	0,09	4,1	24	0											24		
(21) ALP					25							25	24	96%					
Samples and groups	[µkat/L]																		
Sample A		2,82	0,35	13	25						CRV	2,894	0,070	24%	2,19	3,59	25	25	100%
(3) IFCC method		2,82	0,35	13	25	0											25		
Sample B		3,43	0,39	11	25						CRV	3,582	0,082	24%	2,72	4,45	25	24	96%

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(21) ALP					25							25	24	96%
Samples and groups	[µkat/L]													
Sample B		3,43	0,39	11	25							25	24	96%
(3) IFCC method		3,43	0,39	11	25	0			CRV	3,582	0,082	24%	2,72	4,45
(22) alpha-amylase					25							25	25	100%
Samples and groups	[µkat/L]													
Sample A		7,09	0,37	5,2	25							25	25	100%
(1) IFCC method		7,09	0,37	5,2	25	0			CRV	7,243	0,20	15%	6,15	8,33
Sample B		8,71	0,42	4,8	25							25	25	100%
(1) IFCC method		8,71	0,42	4,8	25	0			CRV	9,01	0,25	15%	7,65	10,4
(23) AST					26							26	21	81%
Samples and groups	[µkat/L]													
Sample A		1,62	0,14	8,5	26							26	24	92%
(1) IFCC method		1,62	0,14	8,5	26	0			CRV	1,675	0,037	15%	1,42	1,93
Sample B		3,11	0,32	10	26							26	21	81%
(1) IFCC method		3,11	0,32	10	26	0			CRV	3,267	0,072	15%	2,77	3,76
(24) ALT					26							26	24	92%
Samples and groups	[µkat/L]													
Sample A		4,22	0,14	3,3	26							26	24	92%
(1) IFCC method		4,22	0,14	3,3	26	0			CRV	4,303	0,11	15%	3,65	4,95
Sample B		1,27	0,08	6,7	26							26	25	96%
(1) IFCC method		1,27	0,08	6,7	26	0			CRV	1,259	0,030	15%	1,07	1,45
(26) CK					24							24	22	92%
Samples and groups	[µkat/L]													
Sample A		8,16	0,50	6,2	24							24	23	96%
(1) IFCC method		8,16	0,50	6,2	24	0			CRV	8,778	0,24	20%	7,02	10,6
Sample B		3,32	0,21	6,4	24							24	23	96%
(1) IFCC method		3,32	0,21	6,4	24	0			CRV	3,692	0,088	20%	2,95	4,44
(27) gamma-GT					24							24	23	96%
Samples and groups	[µkat/L]													
Sample A		1,34	0,03	2,6	24							24	23	96%
(1) IFCC method		1,34	0,03	2,5	23	0						23		
Other					1	0						1		
Sample B		3,44	0,11	3,1	24							24	24	100%
(1) IFCC method		3,44	0,10	3,0	23	0			CRV	3,454	0,085	15%	2,93	3,98
Other					1	0						1		
(28) LD					21							21	21	100%
Samples and groups	[µkat/L]													
Sample A		4,57	0,27	5,9	21							21	21	100%
(3) IFCC method		4,57	0,27	5,9	21	0			CRV	4,498	0,098	18%	3,68	5,31
Sample B		7,83	0,22	2,8	21							21	21	100%
(3) IFCC method		7,83	0,22	2,8	21	0			CRV	7,757	0,17	18%	6,36	9,16

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(29) Lipase					15							11	11	100%							0			
Samples and groups	[µkat/L]																							
Sample A		1,23	0,17	13	15							11	11	100%							0			
(0) Not specified; (58) Beckman Coulter (Olympus)		1,36	0,03	2,2	5	0	CVPG	1,38	0,027	24%	1,04	1,72			5									
(0) Not specified; (60) Roche		1,16	0,09	8,3	6	0	CVPG	1,23	0,066	24%	0,934	1,53			6									
Other					4	0									0									
								1x 0/12, 1x 0/177, 2x 0/178																
Sample B		1,61	0,19	12	15							11	11	100%							0			
(0) Not specified; (58) Beckman Coulter (Olympus)		1,76	0,02	1,3	5	0	CVPG	1,79	0,034	24%	1,36	2,22			5									
(0) Not specified; (60) Roche		1,50	0,18	12	6	0	CVPG	1,63	0,095	24%	1,23	2,03			6									
Other					4	0									0									
								1x 0/12, 1x 0/177, 2x 0/178																
(30) Cholinesterase					13							13	13	100%							0			
Samples and groups	[µkat/L]																							
Sample A		139	4,9	3,5	13							13	13	100%							0			
(1) ECCLS method 37°C		139	4,9	3,5	13	0	CVP	140	1,8	12%	123	157			13									
Sample B		147	5,5	3,8	13							13	13	100%							0			
(1) ECCLS method 37°C		147	5,5	3,8	13	0	CVP	148	2,0	12%	130	166			13									
(31) Albumin (elpho)					7							7	7	100%							0			
Samples and groups	[-]																							
Sample A		0,605	0,02	4,5	7		CVP	0,627	0,018	15%	0,532	0,722			7	7	100%				0			
(0) Not specified		0,605	0,02	4,5	7	0									7									
Sample B		0,608	0,05	8,5	7		CVP	0,61	0,019	15%	0,518	0,702			7	7	100%				0			
(0) Not specified		0,608	0,05	8,5	7	0									7									
(32) gamma-globuline (elpho)					7							7	7	100%							0			
Samples and groups	[-]																							
Sample A		0,126	0,01	12	7		CVP	0,128	0,059	30%	0,089	0,167			7	7	100%				0			
(0) Not specified		0,126	0,01	12	7	0									7									
Sample B		0,128	0,02	19	7		CVP	0,132	0,068	30%	0,092	0,172			7	7	100%				0			
(0) Not specified		0,128	0,02	19	7	0									7									
(35) alpha-amylase pancreatic					13							13	13	100%							0			
Samples and groups	[µkat/L]																							
Sample A		6,29	0,14	2,2	13		CVP	6,35	0,084	10%	5,71	6,99			13	13	100%				0			
(1) With IFCC calibration		6,29	0,14	2,2	13	0									13									
Sample B		7,74	0,18	2,3	13		CVP	7,83	0,11	10%	7,04	8,62			13	13	100%				0			
(1) With IFCC calibration		7,74	0,18	2,3	13	0									13									
(36) Calcium ionised					3							3	3	100%							0			
Samples and groups	[mmol/L]																							
Sample A		2,34	0,04	1,8	3		CVP	2,32	0,050	10%	2,08	2,56			3	3	100%				0			
Other					3	0									3									
								3x 2																
Sample B		1,80	0,02	1,3	3		CVP	1,79	0,036	10%	1,61	1,97			3	3	100%				0			
Other					3	0									3									
								3x 2																