Summary statistics - quantitative results

EQA round: AKS1/26 - Basic Clinical Chemistry - Serum

Deadline: 23.1.2026

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

RoM = robust average
SD = standard deviation
CV = coefficient of variation
N_{tot} = total number of the results
N_{out} = number of the results removed before calculation
AV = assigned value
CRV = certified reference value
CVP = consensus of all participants
CVPG = consensus of the participants' groups
U_{AV} = expanded uncertainty of the assigned value (k = 2)
D_{max} = acceptable difference
LL = lower limit
UL = upper limit
N_{eva} = number of the results assessed
N_{suc} = number of successful results
S_{rel} = relative success

Test / Sample / Group	[unit]	RoM	SD	CV [%]	N_{tot}	N_{out}	Comparability AV	U_{AV}	D_{max}	LL	UL	N_{eva}	N_{suc}	S_{rel} [%]	Traceability AV	U_{AV}	D_{max}	LL	UL	N_{eva}	N_{suc}	S_{rel} [%]
(22) **α-amylase**	[µkat/L]				45							0								45	43	96
Sample A												0								45	43	96
(0) Not specified		5,87	0,36	6,1	45	0									CRV 5,89	0,16	15%	5	6,78	45		
Sample B												0								45	45	100
(0) Not specified		4,74	0,31	6,5	45	0									CRV 4,72	0,14	15%	4,01	5,43	45		
(35) **α-amylase pancreatic**	[µkat/L]				18							18	18	100						0		
Sample A												18	18	100						0		
(0) Not specified		4,85	0,13	2,7	18	0	CVP 4,89	0,056	18%	4	5,78	18										
Sample B												18	18	100						0		
(0) Not specified		4,09	0,091	2,2	18	0	CVP 4,14	0,041	18%	3,39	4,89	18										
(32) **γ-globulin (elfo)**	[-]				5							5	5	100						0		
Sample A												5	5	100						0		
(0) Not specified		0,109	0,007	6,8	5	0	CVP 0,126	0,007	30%	0,088	0,164	5										
Sample B												5	5	100						0		
(0) Not specified		0,119	0,013	11	5	0	CVP 0,124	0,005	30%	0,086	0,162	5										
(10) **Albumin**	[g/L]				41							41	38	93						0		
Sample A												41	39	95						0		
(1) BCG		56,8	2,2	3,9	41	0	CVP 57,1	0,39	10%	51,3	62,9	41										
Sample B												41	40	98						0		
(1) BCG		32,1	0,92	2,9	41	0	CVP 32,3	0,23	10%	29	35,6	41										
(31) **Albumin (elpho)**	[-]				5							5	5	100						0		
Sample A												5	5	100						0		
(0) Not specified		0,675	0,022	3,3	5	0	CVP 0,64	0,017	15%	0,544	0,736	5										
Sample B												5	5	100						0		
(0) Not specified		0,656	0,036	5,4	5	0	CVP 0,648	0,011	15%	0,55	0,746	5										
(21) **ALP**	[µkat/L]				43							41	37	90						43	33	77
Sample A		5,17	0,44	8,4	43							41	39	95						43	36	84
(3) IFCC method		5,17	0,44	8,4	43	0									CRV 4,72	0,13	18%	3,87	5,57	43		
(3) IFCC method; (1) Abbott		5,39	0,16	2,9	12	0	CVPG 5,41	0,052	14%	4,65	6,17	12										
(3) IFCC method; (58) Beckman Coulter (AU)		5,53	0,19	3,4	9	0	CVPG 5,48	0,13	14%	4,71	6,25	9										
(3) IFCC method; (60) Roche		4,83	0,25	5,2	18	0	CVPG 4,57	0,092	14%	3,93	5,21	18										
Other					4	0						2										
							2x 3/46, 1x 3/85, 1x 3/177															
Sample B		0,751	0,054	7,2	43							41	37	90						43	38	88
(3) IFCC method		0,751	0,054	7,2	43	0									CRV 0,691	0,019	18%	0,566	0,816	43		
(3) IFCC method; (1) Abbott		0,785	0,027	3,5	12	0	CVPG 0,811	0,014	14%	0,697	0,925	12										
(3) IFCC method; (58) Beckman Coulter (AU)		0,72	0,045	6,2	9	0	CVPG 0,712	0,02	14%	0,612	0,812	9										
(3) IFCC method; (60) Roche		0,745	0,06	8	18	0	CVPG 0,706	0,013	14%	0,607	0,805	18										
Other					4	0						2										
							2x 3/46, 1x 3/85, 1x 3/177															

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Test / Sample / Group	[unit]	RoM	SD	CV [%]	N_{tot}	N_{out}	Comparability AV	U_{AV}	D_{max}	LL	UL	N_{eva}	N_{suc}	S_{rel} [%]	Traceability AV	U_{AV}	D_{max}	LL	UL	N_{eva}	N_{suc}	S_{rel} [%]
(24) **ALT**	[µkat/L]				47							0								47	45	96
Sample A												0								47	46	98
(0) Not specified		1,77	0,12	6,8	47	0									CRV	1,804	0,041	15%	1,53	2,08	47	
Sample B												0								47	46	98
(0) Not specified		1,16	0,061	5,3	47	0									CRV	1,164	0,031	15%	0,989	1,34	47	
(23) **AST**	[µkat/L]				46							0								46	36	78
Sample A												0								46	36	78
(0) Not specified		1,56	0,19	12	46	0									CRV	1,632	0,036	15%	1,38	1,88	46	
Sample B												0								46	44	96
(0) Not specified		2,01	0,087	4,3	46	0									CRV	2,017	0,044	15%	1,71	2,32	46	
(13) **Bilirubin total**	[µmol/L]				46							0								46	45	98
Sample A		17	2,2	13	46							0			CRV	16,49	0,43	26%	12,2	20,8	46	45	98
(2) DCA, DPD		17	2,2	13	45	0															45	
Other					1	0															1	
															1x 1							
Sample B		50,8	4,9	9,6	46							0			CRV	50,2	1,2	26%	37,1	63,3	46	46	100
(2) DCA, DPD		50,6	4,8	9,4	45	0															45	
Other					1	0															1	
															1x 1							
(14) **Bilirubin direct**	[µmol/L]				35							33	31	94						0		
Sample A		4,34	1	24	35							33	31	94						0		
(1) Jendrassik-Gróf; (60) Roche		4,9	0,44	9,1	6	0	CVPG	5,06	0,097	20%	4,04	6,08	6									
(2) DCA, DPD; (1) Abbott		4,6	0,15	3,2	6	0	CVPG	4,77	0,12	20%	3,81	5,73	6									
(2) DCA, DPD; (58) Beckman Coulter (AU)		2,83	0,25	8,9	9	0	CVPG	2,8	0,13	20%	2,24	3,36	9									
(2) DCA, DPD; (60) Roche		5	0,3	5,9	9	0	CVPG	5,06	0,097	20%	4,04	6,08	9									
Other					5	0							3									
							1x 0/60, 2x 1/1, 1x 2/46, 1x 2/177																
Sample B		9,93	3,2	32	35							33	32	97						0		
(1) Jendrassik-Gróf; (60) Roche		13,1	0,51	3,9	6	0	CVPG	13,6	0,34	20%	10,8	16,4	6									
(2) DCA, DPD; (1) Abbott		7,3	0,3	4,1	6	0	CVPG	7,53	0,17	20%	6,02	9,04	6									
(2) DCA, DPD; (58) Beckman Coulter (AU)		7,91	0,43	5,4	9	0	CVPG	7,73	0,28	20%	6,18	9,28	9									
(2) DCA, DPD; (60) Roche		12,8	0,22	1,7	9	0	CVPG	13,6	0,34	20%	10,8	16,4	9									
Other					5	0							3									
							1x 0/60, 2x 1/1, 1x 2/46, 1x 2/177																
(9) **Total protein**	[g/L]				44							0								44	42	95
Sample A												0								44	42	95
(0) Not specified		92,5	2,6	2,8	44	0									CRV	94,5	2,2	9%	85,9	104	44	
Sample B												0								44	43	98
(0) Not specified		49,5	1,2	2,5	44	0									CRV	51,1	1,1	9%	46,5	55,7	44	
(26) **CK**	[µkat/L]				44							0								44	43	98
Sample A												0								44	43	98
(0) Not specified		2,82	0,2	7	44	0									CRV	2,87	0,1	20%	2,29	3,45	44	
Sample B												0								44	44	100
(0) Not specified		1,98	0,12	6,1	44	0									CRV	2,068	0,055	20%	1,65	2,49	44	

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Test / Sample / Group	[unit]	RoM	SD	CV [%]	N_{tot}	N_{out}	Comparability: AV	U_{AV}	D_{max}	LL	UL	N_{eva}	N_{suc}	S_{rel} [%]	Traceability: AV	U_{AV}	D_{max}	LL	UL	N_{eva}	N_{suc}	S_{rel} [%]
(2) **Potassium**	[mmol/L]				46							0								46	45	98
Sample A		6,6	0,14	2,2	46							0			CRV 6,569	0,099	7%	6,1	7,03	46	45	98
(2) Indirect ISE		6,6	0,14	2,1	44	0														44		
Other					2	0														2		
															1x 3, 1x 99							
Sample B		3,6	0,068	1,9	46							0			CRV 3,588	0,054	7%	3,33	3,84	46	45	98
(2) Indirect ISE		3,61	0,066	1,8	44	0														44		
Other					2	0														2		
															1x 3, 1x 99							
(5) **Inorganic phosphate**	[mmol/L]				43							43	41	95						0		
Sample A		1,97	0,041	2,1	43		CVP 1,98	0,009	10%	1,78	2,18	43	43	100						0		
(1) UV-molybdate method		1,97	0,041	2,1	42	0						42										
Other					1	0						1										
							1x 2															
Sample B		0,78	0,029	3,7	43		CVP 0,786	0,005	10%	0,707	0,865	43	41	95						0		
(1) UV-molybdate method		0,78	0,029	3,7	42	0						42										
Other					1	0						1										
							1x 2															
(27) **gamma-GT**	[µkat/L]				44							0								44	44	100
Sample A												0								44	44	100
(0) Not specified		3,14	0,11	3,5	44	0									CRV 3,184	0,079	21%	2,51	3,86	44		
Sample B												0								44	44	100
(0) Not specified		0,975	0,032	3,3	44	0									CRV 1,017	0,025	21%	0,803	1,24	44		
(16) **Glucose**	[mmol/L]				46							0								46	45	98
Sample A		6,14	0,18	2,9	46							0			CRV 6,161	0,063	8%	5,66	6,66	46	45	98
(1) GOD photometry		6,23	0,26	4,2	5	0														5		
(3) Method with hexokinase		6,13	0,17	2,7	41	0														41		
Sample B		6,81	0,2	2,9	46							0			CRV 6,787	0,068	8%	6,24	7,33	46	45	98
(1) GOD photometry		6,95	0,3	4,4	5	0														5		
(3) Method with hexokinase		6,79	0,17	2,5	41	0														41		
(7) **Magnesium**	[mmol/L]				43							43	43	100						0		
Sample A		0,987	0,033	3,3	43		CRV 0,956	0,015	11%	0,85	1,07	43	43	100						0		
(2) Photometry		0,987	0,032	3,2	32	0						32										
(4) UV enzyme method		0,986	0,038	3,8	11	0						11										
Sample B		0,802	0,025	3,1	43		CVP 0,803	0,004	11%	0,714	0,892	43	43	100						0		
(2) Photometry		0,802	0,025	3,2	32	0						32										
(4) UV enzyme method		0,804	0,025	3,1	11	0						11										
(3) **Chloride**	[mmol/L]				46							46	44	96						0		
Sample A		133	4	3	46		CVP 133	0,62	7%	123	143	46	45	98						0		
(3) Indirect ISE		133	4	3	44	0						44										
Other					2	0						2										
							1x 2, 1x 4															
Sample B		97,2	3	3,1	46		CVP 97,5	0,59	7%	90,6	105	46	45	98						0		
(3) Indirect ISE		97,1	3	3	44	0						44										
Other					2	0						2										
							1x 2, 1x 4															

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Test / Sample / Group	[unit]	RoM	SD	CV [%]	N_{tot}	N_{out}	Comparability								Traceability							
								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**	[mmol/L]				44								0									44	35	80
Sample A													0									44	43	98
(0) Not specified		6,22	0,25	4	44	0										CRV	6,28	0,21	9%	5,71	6,85	44		
Sample B													0									44	36	82
(0) Not specified		3,11	0,11	3,6	44	0										CRV	3,298	0,039	9%	3	3,6	44		
(30) **Cholinesterase**	[µkat/L]				12								12	12	100							0		
Sample A													12	12	100							0		
(0) Not specified		174	8,7	5	12	0	CVP	177	2,9	12%	155	199	12											
Sample B													12	12	100							0		
(0) Not specified		94,9	4,8	5	12	0	CVP	96,9	1,5	12%	85,2	109	12											
(19) **Creatinine**	[µmol/L]				46								0									46	41	89
Sample A		140	6,4	4,6	46								0			CRV	139,9	1,4	13%	121	159	46	43	93
(1) Jaffe		146	8,9	6,1	19	0																19		
(3) Enzyme		138	2,8	2	27	0																27		
Sample B		184	5,4	2,9	46								0			CRV	184,5	1,8	13%	160	209	46	43	93
(1) Jaffe		183	8,9	4,8	19	0																19		
(3) Enzyme		185	4,6	2,5	27	0																27		
(17) **Uric acid**	[µmol/L]				44								0									44	44	100
Sample A													0									44	44	100
(0) Not specified		579	15	2,5	44	0										CRV	585,1	5,9	12%	514	656	44		
Sample B													0									44	44	100
(0) Not specified		289	11	3,7	44	0										CRV	288,5	2,9	12%	253	324	44		
(12) **Lactate**	[mmol/L]				15								15	15	100							0		
Sample A		4,53	0,18	3,9	15		CVP	4,57	0,032	15%	3,88	5,26	15	15	100							0		
(3) Photometric enzyme method		4,56	0,082	1,8	9	0							9											
Other					6	0							6											
							4x 1, 2x 2																	
Sample B		0,968	0,049	5,1	15		CVP	0,99	0,013	15%	0,841	1,14	15	15	100							0		
(3) Photometric enzyme method		0,98	0,015	1,5	9	0							9											
Other					6	0							6											
							4x 1, 2x 2																	
(28) **LD**	[µkat/L]				37								0									37	36	97
Sample A													0									37	36	97
(0) Not specified		4,14	0,17	4,1	37	0										CRV	4,299	0,095	18%	3,52	5,08	37		
Sample B													0									37	37	100
(0) Not specified		1,88	0,1	5,5	37	0										CRV	1,976	0,046	18%	1,62	2,34	37		
(29) **Lipase**	[µkat/L]				25								23	23	100							0		
Sample A		2,84	0,24	8,5	25								23	23	100							0		
(0) Not specified; (58) Beckman Coulter (AU)		2,58	0,022	0,86	6	0	CVPG	2,6	0,045	18%	2,13	3,07	6											
(0) Not specified; (60) Roche		2,99	0,06	2	13	0	CVPG	2,91	0,07	18%	2,38	3,44	13											
Other					6	0							4											
							4x 0/1, 1x 0/177, 1x 0/179																	
Sample B		0,484	0,042	8,7	25								23	23	100							0		
(0) Not specified; (58) Beckman Coulter (AU)		0,46	0,015	3,2	6	0	CVPG	0,466	0,015	18%	0,382	0,55	6											
(0) Not specified; (60) Roche		0,506	0,021	4,2	13	0	CVPG	0,506	0,007	18%	0,414	0,598	13											

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Other					6	0	4x 0/1, 1x 0/177, 1x 0/179					4										
(8) **Lithium**	[mmol/L]				7							0								7	6	86
Sample A												0								7	7	100
(4) Photometry		0,89	0,045	5	7	0									CRV 0,918	0,014	12%	0,807	1,03	7		
Sample B												0								7	6	86
(4) Photometry		0,62	0,03	4,8	7	0									CRV 0,641	0,01	12%	0,564	0,718	7		
(18) **Urea**	[mmol/L]				46							0								46	45	98
Sample A												0								46	45	98
(1) UV enzymatic m.(GMD)		9,33	0,43	4,6	46	0									CRV 9,492	0,095	15%	8,06	11	46		
Sample B												0								46	45	98
(1) UV enzymatic m.(GMD)		4,99	0,26	5,1	46	0									CRV 5,035	0,05	15%	4,27	5,8	46		
(11) **Osmolality**	[mmol/kg]				9							9	9	100						0		
Sample A												9	9	100						0		
(0) Not specified		328	5,2	1,6	9	0	CVP 327	1,8	5%	310	344	9										
Sample B												9	9	100						0		
(0) Not specified		239	3	1,2	9	0	CVP 240	1	5%	228	252	9										
(1) **Sodium**	[mmol/L]				45							0								45	44	98
Sample A		148	2,3	1,6	45							0			CRV 150,1	2,3	5%	142	158	45	44	98
(2) Indirect ISE		148	2,3	1,5	44	0														44		
Other					1	0														1		
															1x 3							
Sample B		112	1,4	1,3	45							0			CRV 112,2	1,9	5%	106	118	45	44	98
(2) Indirect ISE		112	1,4	1,2	44	0														44		
Other					1	0														1		
															1x 3							
(20) **Triacylglycerols**	[mmol/L]				44							0								44	44	100
Sample A												0								44	44	100
(1) Photometric enzyme (GPO-PAP)		1,55	0,039	2,5	44	0									CRV 1,535	0,015	18%	1,25	1,82	44		
Sample B												0								44	44	100
(1) Photometric enzyme (GPO-PAP)		1,05	0,062	5,9	44	0									CRV 1,023	0,013	18%	0,838	1,21	44		
(4) **Calcium**	[mmol/L]				44							0								44	43	98
Sample A		2,82	0,068	2,4	44							0			CRV 2,826	0,042	8%	2,59	3,06	44	44	100
(2) Phot. with o-cresolftalexon		2,85	0,03	1	6	0														6		
(3) Photom. with arsenazo III		2,8	0,07	2,5	23	0														23		
(4) Photomet. with NM-BAPTA		2,83	0,066	2,3	15	0														15		
Sample B		1,94	0,045	2,3	44							0			CRV 1,929	0,031	8%	1,77	2,09	44	43	98
(2) Phot. with o-cresolftalexon		1,97	0,037	1,9	6	0														6		
(3) Photom. with arsenazo III		1,93	0,058	3	23	0														23		
(4) Photomet. with NM-BAPTA		1,95	0,033	1,7	15	0														15		
(36) **Calcium ionised**	[mmol/L]				7							7	6	86						0		
Sample A		1,66	0,059	3,6	7		CVP 1,67	0,017	10%	1,5	1,84	7	6	86						0		
(2) Direct ISE		1,68	0,037	2,2	6	0						6										
Other					1	0						1										
							1x 0															

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Deadline: 23.1.2026

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

Test / Sample / Group	[unit]	RoM	SD	CV [%]	N_{tot}	N_{out}	Comparability	AV	U_{AV}	D_{max}	LL	UL	N_{eva}	N_{suc}	S_{rel} [%]	Traceability	AV	U_{AV}	D_{max}	LL	UL	N_{eva}	N_{suc}	S_{rel} [%]
Sample B		1,4	0,059	4,2	7		CVP	1,39	0,014	10%	1,25	1,53	7	6	86							0		
(2) Direct ISE		1,41	0,045	3,2	6	0							6											
Other					1	0							1											
							1x 0																	
(6) **Iron**	[µmol/L]				41								41	40	98							0		
Sample A		37,7	1,6	4,2	41		CVP	37,9	0,21	15%	32,2	43,6	41	40	98							0		
(2) Method with ferrozine/ferene		38	1,4	3,7	33	0							33											
(4) Method with TPTZ		36,5	1,2	3,3	8	0							8											
Sample B		18,9	0,94	5	41		CVP	18,9	0,11	15%	16	21,8	41	40	98							0		
(2) Method with ferrozine/ferene		19,1	0,85	4,5	33	0							33											
(4) Method with TPTZ		18,1	0,74	4,1	8	0							8											