Summary statistics - quantitative results

EQA round: AKS1/24 - Basic Clinical Chemistry - Serum

Deadline: 26.1.2024

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

RoM = robust average	AV = assigned value	D_{max} = acceptable difference
SD = standard deviation	CRV = certified reference value	LL = lower limit
CV = coefficient of variation	CVP = consensus of all participants	UL = upper limit
N_{tot} = total number of the results	CVPG = consensus of the participants' groups	N_{eva} = number of the results assessed
N_{out} = number of the results removed before calculation	U_{AV} = expanded uncertainty of the assigned value (k = 2)	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]				54								0									54	53	98
Sample A													0									54	53	98
(0) Not specified		3,35	0,14	4,2	54	0										CRV	3,455	0,098	15%	2,93	3,98	54		
Sample B													0									54	53	98
(0) Not specified		5,88	0,37	6,4	54	0										CRV	5,98	0,16	15%	5,08	6,88	54		
(35) **α-amylase pancreatic**	[µkat/L]				23								23	23	100							0		
Sample A													23	23	100							0		
(0) Not specified		2,49	0,078	3,1	23	0	CVP	2,49	0,03	18%	2,04	2,94	23											
Sample B													23	23	100							0		
(0) Not specified		4,99	0,17	3,3	23	0	CVP	5,05	0,057	18%	4,14	5,96	23											
(32) **γ-globulin (elfo)**	[-]				7								7	7	100							0		
Sample A													7	7	100							0		
(0) Not specified		0,128	0,02	16	7	0	CVP	0,129	0,007	30%	0,09	0,168	7											
Sample B													7	7	100							0		
(0) Not specified		0,13	0,019	15	7	0	CVP	0,127	0,006	30%	0,088	0,166	7											
(10) **Albumin**	[g/L]				50								50	49	98							0		
Sample A													50	49	98							0		
(1) BCG		57,3	1,9	3,3	50	0	CVP	57,4	0,35	10%	51,6	63,2	50											
Sample B													50	50	100							0		
(1) BCG		44,2	1,3	2,9	50	0	CVP	44,4	0,25	10%	39,9	48,9	50											
(31) **Albumin (elpho)**	[-]				7								7	7	100							0		
Sample A													7	7	100							0		
(0) Not specified; (34) Sebia		0,63	0,06	9,5	7	0	CVPG	0,643	0,014	15%	0,546	0,74	7											
Sample B													7	7	100							0		
(0) Not specified; (34) Sebia		0,627	0,068	11	7	0	CVPG	0,648	0,012	15%	0,55	0,746	7											
(21) **ALP**	[µkat/L]				53								49	44	90							53	44	83
Sample A		5,87	0,56	9,6	53								49	47	96							53	50	94
(3) IFCC method		5,87	0,56	9,6	53	0										CRV	6,28	0,18	18%	5,14	7,42	53		
(3) IFCC method; (1) Abbott		6,13	0,23	3,8	14	0	CVPG	6,16	0,08	14%	5,29	7,03	14											
(3) IFCC method; (58) Beckman Coulter (AU)		6,46	0,19	2,9	9	0	CVPG	6,44	0,17	14%	5,53	7,35	9											
(3) IFCC method; (60) Roche		5,46	0,25	4,6	23	0	CVPG	5,51	0,071	14%	4,73	6,29	23											
Other					7	0							3											
							2x 3/12, 2x 3/46, 1x 3/85, 1x 3/177, 1x 3/179																	
Sample B		0,778	0,074	9,5	53								49	44	90							53	47	89
(3) IFCC method		0,778	0,074	9,5	53	0										CRV	0,828	0,035	18%	0,678	0,978	53		
(3) IFCC method; (1) Abbott		0,819	0,063	7,7	14	0	CVPG	0,841	0,016	14%	0,723	0,959	14											
(3) IFCC method; (58) Beckman Coulter (AU)		0,69	0,074	11	9	0	CVPG	0,71	0,039	14%	0,61	0,81	9											
(3) IFCC method; (60) Roche		0,774	0,035	4,6	23	0	CVPG	0,787	0,01	14%	0,676	0,898	23											
Other					7	0							3											
							2x 3/12, 2x 3/46, 1x 3/85, 1x 3/177, 1x 3/179																	

Summary statistics - quantitative results

EQA round: AKS1/24 - Basic Clinical Chemistry - Serum

Deadline: 26.1.2024

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									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} [%]
(24) **ALT**	[µkat/L]				56								0									56	55	98
Sample A													0									56	55	98
(0) Not specified		3,56	0,18	5,1	56	0										CRV	3,649	0,081	15%	3,1	4,2	56		
Sample B													0									56	56	100
(0) Not specified		1,7	0,081	4,7	56	0										CRV	1,702	0,045	15%	1,44	1,96	56		
(23) **AST**	[µkat/L]				55								0									55	48	87
Sample A													0									55	48	87
(0) Not specified		4,6	0,41	9	55	0										CRV	4,66	0,1	15%	3,96	5,36	55		
Sample B													0									55	53	96
(0) Not specified		1,47	0,12	7,9	55	0										CRV	1,473	0,044	15%	1,25	1,7	55		
(13) **Bilirubin total**	[µmol/L]				55								0									55	54	98
Sample A		64,8	5,3	8,2	55								0			CRV	65	1,5	26%	48,1	81,9	55	54	98
(2) DCA, DPD		65	5,3	8,2	54	0																54		
Other					1	0																1		
																1x 1								
Sample B		21,6	2,7	12	55								0			CRV	21,42	0,57	26%	15,8	27	55	55	100
(2) DCA, DPD		21,7	2,7	12	54	0																54		
Other					1	0																1		
																1x 1								
(14) **Bilirubin direct**	[µmol/L]				33								26	24	92							0		
Sample A		13	2,9	23	33								26	24	92							0		
(0) Not specified; (0) not specified		13,3	1,9	14	5	0	CVPG	14,5	1,8	20%	11,6	17,4	0											
(2) DCA, DPD; (1) Abbott		13,8	0,59	4,3	6	0	CVPG	14	0,22	20%	11,2	16,8	6											
(2) DCA, DPD; (58) Beckman Coulter (AU)		8,45	1,4	17	7	0	CVPG	8,39	0,58	20%	6,71	10,1	7											
(2) DCA, DPD; (60) Roche		14,9	0,44	3	8	0	CVPG	15,4	0,51	20%	12,3	18,5	8											
Other					7	0							5											
							2x 1/1, 3x 1/60, 1x 2/12, 1x 2/177																	
Sample B		5,78	1,2	20	33								26	24	92							0		
(0) Not specified; (0) not specified		5,76	0,68	12	5	0	CVPG	6,43	0,69	20%	5,14	7,72	0											
(2) DCA, DPD; (1) Abbott		6,4	0,3	4,6	6	0	CVPG	6,53	0,13	20%	5,22	7,84	6											
(2) DCA, DPD; (58) Beckman Coulter (AU)		4,1	0,44	11	7	0	CVPG	4,05	0,32	20%	3,24	4,86	7											
(2) DCA, DPD; (60) Roche		6,25	0,37	5,9	8	0	CVPG	6,63	0,24	20%	5,3	7,96	8											
Other					7	0							5											
							2x 1/1, 3x 1/60, 1x 2/12, 1x 2/177																	
(9) **Total protein**	[g/L]				53								0									53	52	98
Sample A													0									53	52	98
(0) Not specified		92,9	2,6	2,8	53	0										CRV	95,4	2,8	9%	86,8	104	53		
Sample B													0									53	53	100
(0) Not specified		69,4	1,7	2,4	53	0										CRV	69,9	1,5	9%	63,6	76,2	53		
(26) **CK**	[µkat/L]				53								0									53	48	91
Sample A													0									53	49	92
(0) Not specified		3,66	0,3	8,1	53	0										CRV	4,007	0,096	20%	3,2	4,81	53		
Sample B													0									53	51	96
(0) Not specified		5,64	0,44	7,9	53	0										CRV	6	0,17	20%	4,8	7,2	53		

Summary statistics - quantitative results

EQA round: AKS1/24 - Basic Clinical Chemistry - Serum

Deadline: 26.1.2024

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} [%]
(2) **Potassium**	[mmol/L]				56								0									56	55	98
Sample A		6,99	0,15	2,2	56								0			CRV	6,94	0,11	7%	6,45	7,43	56	55	98
(2) Indirect ISE		7	0,15	2,1	52	0																52		
Other					4	0																4		
																3x 3, 1x 99								
Sample B		5,66	0,099	1,7	56								0			CRV	5,621	0,084	7%	5,22	6,02	56	55	98
(2) Indirect ISE		5,67	0,094	1,7	52	0																52		
Other					4	0																4		
																3x 3, 1x 99								
(5) **Inorganic phosphate**	[mmol/L]				52								52	51	98							0		
Sample A		2,03	0,058	2,9	52		CVP	2,03	0,01	10%	1,82	2,24	52	51	98							0		
(1) UV-molybdate method		2,03	0,058	2,9	51	0							51											
Other					1	0							1											
							1x 2																	
Sample B		1,22	0,043	3,5	52		CVP	1,22	0,008	10%	1,09	1,35	52	51	98							0		
(1) UV-molybdate method		1,21	0,042	3,5	51	0							51											
Other					1	0							1											
							1x 2																	
(27) **gamma-GT**	[µkat/L]				53								0									53	53	100
Sample A													0									53	53	100
(0) Not specified		3,27	0,092	2,8	53	0										CRV	3,352	0,082	21%	2,64	4,06	53		
Sample B													0									53	53	100
(0) Not specified		0,97	0,029	3	53	0										CRV	1,053	0,027	21%	0,831	1,28	53		
(16) **Glucose**	[mmol/L]				55								0									55	55	100
Sample A		6,51	0,16	2,5	55								0			CRV	6,818	0,068	asym.	6,06	7,37	55	55	100
(1) GOD photometry		6,76	0,21	3,1	6	0																6		
(3) Method with hexokinase		6,5	0,14	2,2	49	0																49		
Sample B		4,53	0,13	3	55								0			CRV	4,656	0,047	asym.	4,14	5,03	55	55	100
(1) GOD photometry		4,71	0,052	1,1	6	0																6		
(3) Method with hexokinase		4,52	0,11	2,5	49	0																49		
(7) **Magnesium**	[mmol/L]				53								0									53	52	98
Sample A		1,03	0,025	2,4	53								0			CRV	1,008	0,02	15%	0,856	1,16	53	52	98
(2) Photometry		1,03	0,02	1,9	39	0																39		
(4) UV enzyme method		1,03	0,035	3,4	14	0																14		
Sample B		1,51	0,04	2,6	53								0			CRV	1,499	0,029	15%	1,27	1,73	53	52	98
(2) Photometry		1,5	0,028	1,9	39	0																39		
(4) UV enzyme method		1,55	0,044	2,8	14	0																14		
(3) **Chloride**	[mmol/L]				56								56	55	98							0		
Sample A		132	3,5	2,7	56		CVP	132	0,54	7%	122	142	56	55	98							0		
(3) Indirect ISE		132	3,2	2,4	52	0							52											
Other					4	0							4											
							1x 2, 3x 4																	
Sample B		115	3,6	3,1	56		CVP	115	0,56	7%	106	124	56	56	100							0		
(3) Indirect ISE		115	3,3	2,8	52	0							52											
Other					4	0							4											
							1x 2, 3x 4																	

Summary statistics - quantitative results

EQA round: AKS1/24 - Basic Clinical Chemistry - Serum

Deadline: 26.1.2024

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} [%]
(15) **Cholesterol**	[mmol/L]				53								0									53	52	98
Sample A													0									53	52	98
(0) Not specified		5,87	0,17	2,8	53	0										CRV	5,933	0,066	9%	5,39	6,47	53		
Sample B													0									53	52	98
(0) Not specified		4,42	0,13	2,8	53	0										CRV	4,483	0,045	9%	4,07	4,89	53		
(30) **Cholinesterase**	[µkat/L]				18								18	18	100							0		
Sample A													18	18	100							0		
(0) Not specified		166	7,5	4,5	18	0	CVP	167	2	12%	146	188	18											
Sample B													18	18	100							0		
(0) Not specified		133	4,6	3,4	18	0	CVP	134	1,4	12%	117	151	18											
(19) **Creatinine**	[µmol/L]				56								0									56	52	93
Sample A		147	6,5	4,4	56								0			CRV	146,7	1,5	13%	127	166	56	54	96
(1) Jaffe		147	13	9,2	21	0																21		
(3) Enzyme		148	4,2	2,9	35	0																35		
Sample B		58,3	3,9	6,6	56								0			CRV	58,14	0,58	13%	50,5	65,7	56	53	95
(1) Jaffe		58,9	6,1	10	21	0																21		
(3) Enzyme		57,9	2,5	4,2	35	0																35		
(17) **Uric acid**	[µmol/L]				53								0									53	52	98
Sample A													0									53	53	100
(0) Not specified		201	4,6	2,3	53	0										CRV	203,1	2	12%	178	228	53		
Sample B													0									53	52	98
(0) Not specified		397	11	2,6	53	0										CRV	391,8	3,9	12%	344	439	53		
(12) **Lactate**	[mmol/L]				24								24	24	100							0		
Sample A		4,7	0,14	3	24		CVP	4,67	0,036	15%	3,96	5,38	24	24	100							0		
(3) Photometric enzyme method		4,72	0,13	2,7	18	0							18											
Other					6	0							6											
							4x 1, 2x 2																	
Sample B		4,01	0,12	3	24		CVP	3,98	0,034	15%	3,38	4,58	24	24	100							0		
(3) Photometric enzyme method		4,03	0,12	2,9	18	0							18											
Other					6	0							6											
							4x 1, 2x 2																	
(28) **LD**	[µkat/L]				43								0									43	43	100
Sample A													0									43	43	100
(0) Not specified		4,61	0,12	2,6	43	0										CRV	4,6	0,12	18%	3,77	5,43	43		
Sample B													0									43	43	100
(0) Not specified		3,35	0,1	3	43	0										CRV	3,368	0,086	18%	2,76	3,98	43		
(29) **Lipase**	[µkat/L]				33								29	29	100							0		
Sample A		2,87	0,13	4,4	33								29	29	100							0		
(0) Not specified; (58) Beckman Coulter (AU)		2,78	0,082	2,9	6	0	CVPG	2,79	0,056	24%	2,12	3,46	6											
(0) Not specified; (60) Roche		2,88	0,12	4,1	18	0	CVPG	2,94	0,05	24%	2,23	3,65	18											
Other					9	0							5											
							1x 0/1, 1x 0/12, 4x 0/116, 1x 0/177, 2x 0/179																	
Sample B		0,975	0,05	5,1	33								29	29	100							0		
(0) Not specified; (58) Beckman Coulter (AU)		1,01	0,045	4,4	6	0	CVPG	1	0,023	24%	0,76	1,24	6											
(0) Not specified; (60) Roche		0,975	0,026	2,6	18	0	CVPG	0,994	0,014	24%	0,755	1,24	18											

Summary statistics - quantitative results

EQA round: AKS1/24 - Basic Clinical Chemistry - Serum

Deadline: 26.1.2024

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} [%]
Other					9	0	1x 0/1, 1x 0/12, 4x 0/116, 1x 0/177, 2x 0/179					5										
(8) **Lithium**	[mmol/L]				9							0								9	8	89
Sample A		0,91	0,03	3,3	9							0			CRV	0,947	0,014	12%	0,833	1,07	9	8	89
(4) Photometry		0,907	0,055	6,1	8	0															8		
Other					1	0									1x 3						1		
Sample B		0,84	0,03	3,5	9							0			CRV	0,857	0,013	12%	0,754	0,96	9	8	89
(4) Photometry		0,83	0,045	5,4	8	0															8		
Other					1	0									1x 3						1		
(18) **Urea**	[mmol/L]				55							0								55	54	98
Sample A												0								55	54	98
(1) UV enzymatic m.(GMD)		19,7	0,64	3,3	55	0									CRV	20,01	0,2	15%	17	23,1	55		
Sample B												0								55	55	100
(1) UV enzymatic m.(GMD)		12,6	0,45	3,5	55	0									CRV	12,97	0,13	15%	11	15	55		
(11) **Osmolality**	[mmol/kg]				14							14	14	100						0		
Sample A												14	14	100						0		
(0) Not specified		346	5,2	1,5	14	0	CVP	344	2,3	5%	326	362	14									
Sample B												14	14	100						0		
(0) Not specified		305	4	1,3	14	0	CVP	304	1,6	5%	288	320	14									
(1) **Sodium**	[mmol/L]				56							0								56	56	100
Sample A		151	2,4	1,6	56							0			CRV	152,8	2,3	5%	145	161	56	56	100
(2) Indirect ISE		151	2,4	1,6	52	0															52		
Other					4	0									3x 3, 1x 99						4		
Sample B		137	1,7	1,2	56							0			CRV	138,3	2,1	5%	131	146	56	56	100
(2) Indirect ISE		137	1,6	1,2	52	0															52		
Other					4	0									3x 3, 1x 99						4		
(20) **Triacylglycerols**	[mmol/L]				53							0								53	52	98
Sample A												0								53	53	100
(1) Photometric enzyme (GPO-PAP)		1,5	0,076	5	53	0									CRV	1,546	0,015	18%	1,26	1,83	53		
Sample B												0								53	52	98
(1) Photometric enzyme (GPO-PAP)		2,09	0,065	3,1	53	0									CRV	2,104	0,021	18%	1,72	2,49	53		
(4) **Calcium**	[mmol/L]				53							0								53	52	98
Sample A		2,97	0,08	2,7	53							0			CRV	2,993	0,045	8%	2,75	3,24	53	53	100
(2) Phot. with o-cresolftalexon		2,9	0,074	2,6	5	0															5		
(3) Photom. with arsenazo III		2,97	0,094	3,2	26	0															26		
(4) Photomet. with NM-BAPTA		2,98	0,063	2,1	21	0															21		
Other					1	0									1x 99						1		
Sample B		2,09	0,066	3,2	53							0			CRV	2,076	0,031	8%	1,9	2,25	53	52	98
(2) Phot. with o-cresolftalexon		2,06	0,037	1,8	5	0															5		
(3) Photom. with arsenazo III		2,09	0,074	3,5	26	0															26		
(4) Photomet. with NM-BAPTA		2,1	0,065	3,1	21	0															21		

Summary statistics - quantitative results

EQA round: AKS1/24 - Basic Clinical Chemistry - Serum

Deadline: 26.1.2024

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} [%]
Other					1	0										1x 99						1		
(36) **Calcium ionised**	[mmol/L]				7								7	7	100							0		
Sample A													7	7	100							0		
(2) Direct ISE		1,71	0,059	3,5	7	0	CVP	1,7	0,023	10%	1,53	1,87	7											
Sample B													7	7	100							0		
(2) Direct ISE		1,36	0,067	4,9	7	0	CVP	1,34	0,017	10%	1,2	1,48	7											
(6) **Iron**	[µmol/L]				49								49	47	96							0		
Sample A		40,5	1,6	3,9	49		CVP	40,4	0,26	15%	34,3	46,5	49	48	98							0		
(2) Method with ferrozine/ferene		40,9	1,5	3,7	39	0							39											
(4) Method with TPTZ		39,2	1	2,6	10	0							10											
Sample B		24,1	0,87	3,6	49		CVP	24	0,15	15%	20,4	27,6	49	48	98							0		
(2) Method with ferrozine/ferene		24,3	0,77	3,2	39	1							39											
(4) Method with TPTZ		23,2	0,57	2,4	10	0							10											