Summary statistics - quantitative results

(Groups: measurement principle)

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

EQA round: AKS1/21 - Basic Clinical Chemistry - Serum

Deadline: 29.01.2021

RoM = robust average
SD = standard deviation
CV = coefficient of variation
Ntot = total number of the participants
Nout = number of results excluded before calculation

AV = assigned value
CRV = certified reference value
RV = reference value
CVE = consensus value from experts
CVP = consensus value from all participants
CVPG = consensus value from participants groups
U_{AV} = expanded uncertainty of the assigned value (k = 2)

Dmax = acceptable percent difference
LL = lower limit
UL = upper limit
Neva = number of evaluated participants
Nsuc = number of successful participants
Srel = success (relative)

Test	[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}
(1) Sodium	[mmol/L]				51							0								51	50	98%
Samples and groups																						
Sample A		155	2,1	1,4	51							0			CRV	155,8	2,4	5%	148	164	51	50	98%
(2) Indirect ISE		155	2,0	1,3	44	0															44		
(3) Direct ISE		154	2,4	1,6	5	0															5		
Other					2	0															2		
															2x 99								
Sample B		132	1,7	1,3	51							0			CRV	132,5	2,0	5%	125	140	51	50	98%
(2) Indirect ISE		132	1,5	1,2	44	0															44		
(3) Direct ISE		132	2,4	1,8	5	0															5		
Other					2	0															2		
															2x 99								
(2) Potassium	[mmol/L]				51							0								51	44	86%
Samples and groups																						
Sample A		2,86	0,08	3,0	51							0			CRV	2,753	0,044	7%	2,56	2,95	51	44	86%
(2) Indirect ISE		2,85	0,07	2,8	44	0															44		
(3) Direct ISE		2,89	0,01	0,51	5	0															5		
Other					2	0															2		
															2x 99								
Sample B		5,77	0,13	2,2	51							0			CRV	5,764	0,086	7%	5,36	6,17	51	50	98%
(2) Indirect ISE		5,78	0,12	2,1	44	0															44		
(3) Direct ISE		5,70	0,09	1,7	5	0															5		
Other					2	0															2		
															2x 99								
(3) Chloride	[mmol/L]				51							51	45	88%						0		
Samples and groups																						
Sample A		140	2,5	1,8	51		CVP 140	0,46	7%	130	150	51	46	90%						0		
(3) Indirect ISE		140	2,3	1,6	43	0						43										
Other					8	0						8										
							3x 2, 4x 4, 1x 99															
Sample B		113	2,3	2,0	51		CVP 114	0,47	7%	106	122	51	49	96%						0		
(3) Indirect ISE		113	2,2	1,9	43	0						43										
Other					8	0						8										
							3x 2, 4x 4, 1x 99															
(4) Calcium	[mmol/L]				48							0								48	44	92%
Samples and groups																						
Sample A		1,98	0,05	3,0	48							0			CRV	1,941	0,029	8%	1,78	2,1	48	45	94%
(2) Phot. with o-cresolftalexon		1,98	0,11	5,6	7	0															7		
(3) Photom. with arsenazo III		2,00	0,05	2,5	24	0															24		
(4) Photomet. with NM-BAPTA		1,97	0,05	2,7	17	0															17		
Sample B		2,79	0,06	2,2	48							0			CRV	2,737	0,042	8%	2,51	2,96	48	47	98%

Summary statistics - quantitative results

(Groups: measurement principle)

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

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Test / [unit]	RoM	SD	CV [%]	N_{tot}	N_{out}	Comparability AV	Comparability U_{AV}	Comparability D_{max}	Comparability LL	Comparability UL	Comparability N_{eva}	Comparability N_{suc}	Comparability S_{rel}	Traceability AV	Traceability U_{AV}	Traceability D_{max}	Traceability LL	Traceability UL	Traceability N_{eva}	Traceability N_{suc}	Traceability S_{rel}
(4) Calcium [mmol/L]				48							0								48	44	92%
Samples and groups																					
Sample B	2,79	0,06	2,2	48							0			CRV	2,737	0,042	8%	2,51 2,96	48	47	98%
(2) Phot. with o-cresolftalexon	2,79	0,07	2,7	7	0														7		
(3) Photom. with arsenazo III	2,81	0,06	2,2	24	0														24		
(4) Photomet. with NM-BAPTA	2,78	0,06	2,3	17	0														17		
(5) Inorganic phosphate [mmol/L]				48							48	45	94%						0		
Samples and groups																					
Sample A	0,932	0,03	3,8	48		CVP	0,933	,0059	10%	0,839 1,03	48	47	98%						0		
(1) UV-molybdate method	0,930	0,03	3,8	45	0						45										
Other				3	0						3										
						3x 2															
Sample B	1,34	0,04	3,2	48		CVP	1,34	,0069	10%	1,2 1,48	48	45	94%						0		
(1) UV-molybdate method	1,34	0,04	3,2	45	0						45										
Other				3	0						3										
						3x 2															
(6) Iron [µmol/L]				45							45	43	96%						0		
Samples and groups																					
Sample A	32,3	0,99	3,1	45		CVP	32,6	0,18	15%	27,7 37,5	45	43	96%						0		
(2) Method with ferrozine/ferene	32,3	1,1	3,4	33	0						33										
(4) Method with TPTZ	32,2	0,73	2,3	12	0						12										
Sample B	42,2	1,3	3,0	45		CVP	42,5	0,19	15%	36,1 48,9	45	44	98%						0		
(2) Method with ferrozine/ferene	42,2	1,3	3,1	33	0						33										
(4) Method with TPTZ	42,3	1,3	3,1	12	0						12										
(7) Magnesium [mmol/L]				48							0								48	46	96%
Samples and groups																					
Sample A	0,984	0,02	2,7	48							0			CRV	0,959	0,015	15%	0,815 1,11	48	47	98%
(2) Photometry	0,983	0,02	2,9	44	0														44		
Other				4	0														4		
														4x 4							
Sample B	1,61	0,04	2,7	48							0			CRV	1,574	0,025	15%	1,33 1,82	48	47	98%
(2) Photometry	1,60	0,04	2,5	44	0														44		
Other				4	0														4		
														4x 4							
(8) Lithium [mmol/L]				4							0								4	4	100%
Samples and groups																					
Sample A	1,26	0,06	4,9	4							0			CRV	1,309	0,020	12%	1,15 1,47	4	4	100%
Other				4	0														4		
														1x 3, 3x 4							
Sample B	1,22	0,03	3,1	4							0			CRV	1,244	0,019	12%	1,09 1,4	4	4	100%
Other				4	0														4		
														1x 3, 3x 4							
(9) Total protein [g/L]				49							0								49	48	98%
Samples and groups																					
Sample A	59,5	1,7	2,8	49							0			CRV	59,44	0,70	9%	54 64,8	49	48	98%
(1) Biuret	59,5	1,7	2,8	49	0														49		
Sample B	84,9	2,3	2,8	49							0			CRV	86,11	1,0	9%	78,3 93,9	49	49	100%

Summary statistics - quantitative results

(Groups: measurement principle)

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

EQA round: AKS1/21 - Basic Clinical Chemistry - Serum

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Test [unit]	RoM	SD	CV [%]	N_{tot}	N_{out}	Comparability AV	Comparability U_{AV}	Comparability D_{max}	Comparability LL	Comparability UL	Comparability N_{eva}	Comparability N_{suc}	Comparability S_{rel}	Traceability AV	Traceability U_{AV}	Traceability D_{max}	Traceability LL	Traceability UL	Traceability N_{eva}	Traceability N_{suc}	Traceability S_{rel}
(9) Total protein [g/L]				49							0								49	48	98%
Samples and groups																					
Sample B	84,9	2,3	2,8	49							0			CRV	86,11	1,0	9%	78,3	93,9	49	49	100%
(1) Biuret	84,9	2,3	2,8	49	0														49		
(10) Albumin [g/L]				48							48	47	98%						0		
Samples and groups																					
Sample A	38,9	1,4	3,6	48		CVP	39	0,24	10%	35,1	42,9	48	47	98%					0		
(1) BCG	38,9	1,3	3,3	45	0							45									
Other				3	0							3									
						1x 0, 2x 2															
Sample B	54,2	1,5	2,8	48		CVP	54,4	0,28	10%	48,9	59,9	48	47	98%					0		
(1) BCG	54,3	1,5	2,7	45	0							45									
Other				3	1							3									
						1x 0, 2x 2															
(11) Osmolality [mmol/kg]				12							12	12	100%						0		
Samples and groups																					
Sample A	338	6,5	1,9	12		CVP	337	1,6	5%	320	354	12	12	100%					0		
(1) Osmometer	338	6,5	1,9	12	0							12									
Sample B	300	4,6	1,5	12		CVP	299	2,1	5%	284	314	12	12	100%					0		
(1) Osmometer	300	4,6	1,5	12	0							12									
(12) Lactate [mmol/L]				19							19	19	100%						0		
Samples and groups																					
Sample A	3,88	0,17	4,3	19		CVP	3,94	0,039	15%	3,34	4,54	19	19	100%					0		
(3) Photometric enzyme method	3,89	0,15	3,8	12	0							12									
Other				7	0							7									
						4x 1, 3x 2															
Sample B	2,93	0,11	3,6	19		CVP	2,96	0,028	15%	2,51	3,41	19	19	100%					0		
(3) Photometric enzyme method	2,93	0,07	2,6	12	0							12									
Other				7	0							7									
						4x 1, 3x 2															
(13) Bilirubin total [µmol/L]				51							0								51	51	100%
Samples and groups																					
Sample A	31,7	2,7	8,6	51							0			CRV	30,8	1,0	21%	24,3	37,3	51	51	100%
(2) DCA, DPD	31,7	2,8	8,7	48	0														48		
Other				3	0														3		
														3x 1							
Sample B	32,1	2,8	8,7	51							0			CRV	32	0,80	21%	25,2	38,8	51	51	100%
(2) DCA, DPD	32,1	2,8	8,8	48	0														48		
Other				3	0														3		
														3x 1							
(15) Cholesterol [mmol/L]				48							0								48	46	96%
Samples and groups																					
Sample A	3,38	0,14	4,3	48							0								48	46	96%
(1) Enzyme method CHOD-PAP	3,38	0,15	4,3	47	0									CRV	3,447	0,034	9%	3,13	3,76	47		
Other				1	0														1		
														1x 99							
Sample B	5,10	0,23	4,5	48							0								48	48	100%

Summary statistics - quantitative results

(Groups: measurement principle)

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

EQA round: AKS1/21 - Basic Clinical Chemistry - Serum

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Test / Samples and groups	[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]				48							0								48	46	96%
Sample B		5,10	0,23	4,5	48							0								48	48	100%
(1) Enzyme method CHOD-PAP		5,10	0,23	4,5	47	0									CRV	5,129	0,051	9%	4,66	5,6	47	
Other					1	0															1	
															1x 99							
(16) Glucose	[mmol/L]				51							0								51	51	100%
Sample A		6,56	0,18	2,7	51							0			CRV	6,53	0,065	8%	6	7,06	51	51 100%
(1) GOD photometry		6,65	0,12	1,8	15	0															15	
(3) Method with hexokinase		6,52	0,19	2,8	36	0															36	
Sample B		5,35	0,16	3,0	51							0			CRV	5,467	0,055	8%	5,02	5,91	51	51 100%
(1) GOD photometry		5,48	0,14	2,6	15	0															15	
(3) Method with hexokinase		5,31	0,14	2,7	36	0															36	
(17) Uric acid	[µmol/L]				49							0								49	49	100%
Sample A		417	14	3,4	49							0			CRV	415,2	4,2	12%	365	466	49	49 100%
(2) Enzyme-photomet. m.		417	14	3,4	49	0															49	
Sample B		610	17	2,8	49							0			CRV	612	6,1	12%	538	686	49	49 100%
(2) Enzyme-photomet. m.		610	17	2,8	49	0															49	
(18) Urea	[mmol/L]				51							0								51	50	98%
Sample A		18,7	0,66	3,5	51							0			CRV	19,4	0,19	15%	16,4	22,4	51	51 100%
(1) UV enzymatic m.(GMD)		18,7	0,67	3,6	50	0															50	
Other					1	0															1	
															1x 99							
Sample B		14,9	0,54	3,6	51							0			CRV	15,3	0,15	15%	13	17,6	51	50 98%
(1) UV enzymatic m.(GMD)		14,9	0,54	3,6	50	0															50	
Other					1	0															1	
															1x 99							
(19) Creatinine	[µmol/L]				51							0								51	50	98%
Sample A		165	6,5	4,0	51							0			CRV	164,8	1,6	13%	143	187	51	51 100%
(1) Jaffe		165	7,0	4,2	28	0															28	
(3) Enzyme		165	6,1	3,7	23	0															23	
Sample B		151	8,9	5,9	51							0			CRV	146,6	1,7	13%	127	166	51	50 98%
(1) Jaffe		155	7,9	5,1	28	0															28	
(3) Enzyme		146	5,1	3,5	23	0															23	
(20) Triacylglycerols	[mmol/L]				48							0								48	48	100%
Sample A		1,39	0,05	3,7	48							0			CRV	1,369	0,016	15%	1,16	1,58	48	48 100%
(1) Photometric enzyme (GPO-PAP)		1,39	0,05	3,7	46	0															46	
Other					2	0															2	
															2x 2							
Sample B		1,31	0,05	4,1	48							0			CRV	1,318	0,013	15%	1,12	1,52	48	48 100%

Summary statistics - quantitative results

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Test / Samples and groups	[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}
(20) Triacylglycerols	[mmol/L]				48							0								48	48	100%
Sample B		1,31	0,05	4,1	48							0			CRV 1,318	0,013	15%	1,12	1,52	48	48	100%
(1) Photometric enzyme (GPO-PAP)		1,31	0,05	4,2	46	0														46		
Other					2	0														2		
															2x 2							
(21) ALP	[µkat/L]				49							0								49	49	100%
Sample A		4,33	0,51	12	49							0			CRV 4,568	0,10	28%	3,28	5,85	49	49	100%
(3) IFCC method		4,33	0,51	12	49	0														49		
Sample B		2,59	0,24	9,2	49							0			CRV 2,731	,0080	28%	1,96	3,5	49	49	100%
(3) IFCC method		2,59	0,24	9,2	49	0														49		
(22) alpha-amylase	[µkat/L]				51							0								51	47	92%
Sample A		8,00	0,43	5,4	51							0								51	47	92%
(1) IFCC method		8,00	0,43	5,4	51	0									CRV 8,213	0,22	15%	6,98	9,45	51		
Sample B		8,16	0,49	6,0	51							0								51	47	92%
(1) IFCC method		8,16	0,49	6,0	51	0									CRV 8,325	0,023	15%	7,07	9,58	51		
(23) AST	[µkat/L]				51							0								51	41	80%
Sample A		5,39	0,40	7,4	51							0			CRV 5,711	0,13	15%	4,85	6,57	51	46	90%
(1) IFCC method		5,40	0,39	7,3	50	0														50		
Other					1	0														1		
															1x 99							
Sample B		3,12	0,27	8,6	51							0			CRV 3,287	0,013	15%	2,79	3,79	51	43	84%
(1) IFCC method		3,13	0,26	8,3	50	0														50		
Other					1	0														1		
															1x 99							
(24) ALT	[µkat/L]				52							0								52	51	98%
Sample A		2,98	0,12	4,0	52							0			CRV 3,084	0,078	15%	2,62	3,55	52	52	100%
(1) IFCC method		2,98	0,12	4,0	51	0														51		
Other					1	0														1		
															1x 99							
Sample B		1,20	0,08	7,2	52							0			CRV 1,222	0,013	15%	1,03	1,41	52	51	98%
(1) IFCC method		1,20	0,08	7,2	51	0														51		
Other					1	0														1		
															1x 99							
(26) CK	[µkat/L]				50							0								50	50	100%
Sample A		5,32	0,41	7,8	50							0			CRV 5,598	0,17	20%	4,47	6,72	50	50	100%
(1) IFCC method		5,32	0,41	7,8	50	0														50		
Sample B		3,38	0,22	6,6	50							0			CRV 3,469	0,037	20%	2,77	4,17	50	50	100%
(1) IFCC method		3,38	0,22	6,6	50	0														50		

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Test / [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}
(27) gamma-GT [µkat/L]				49							0								49	48	98%
Samples and groups																					
Sample A	2,47	0,08	3,5	49							0			CRV	2,561	0,065	15%	2,17	2,95	49	48	98%
(1) IFCC method	2,47	0,08	3,5	49	0														49		
Sample B	2,10	0,06	3,2	49							0			CRV	2,175	,0080	15%	1,84	2,51	49	48	98%
(1) IFCC method	2,10	0,06	3,2	49	0														49		
(28) LD [µkat/L]				40							0								40	40	100%
Samples and groups																					
Sample A	2,78	0,12	4,4	40							0			CRV	2,902	0,067	18%	2,37	3,43	40	40	100%
(3) IFCC method	2,78	0,12	4,4	40	0														40		
Sample B	7,30	0,20	2,7	40							0			CRV	7,378	0,033	18%	6,05	8,71	40	40	100%
(3) IFCC method	7,30	0,20	2,7	40	0														40		
(29) Lipase [µkat/L]				27							23	20	87%						0		
Samples and groups																					
Sample A	0,929	0,14	15	27							23	21	91%						0		
(0) Not specified; (58) Beckman Coulter (AU)	1,05	0,08	7,8	7	0	CVPG	1,04	0,028	24%	0,79	1,29	7									
(0) Not specified; (60) Roche	0,846	0,07	9,0	13	0	CVPG	0,895	0,011	24%	0,68	1,11	13									
Other				7	0	1x 0/12, 1x 0/177, 2x 0/178, 3x 0/179						3									
Sample B	1,72	0,22	12	27							23	21	91%						0		
(0) Not specified; (58) Beckman Coulter (AU)	1,84	0,11	6,1	7	0	CVPG	1,86	0,037	24%	1,41	2,31	7									
(0) Not specified; (60) Roche	1,60	0,18	12	13	0	CVPG	1,72	0,027	24%	1,3	2,14	13									
Other				7	0	1x 0/12, 1x 0/177, 2x 0/178, 3x 0/179						3									
(30) Cholinesterase [µkat/L]				20							20	19	95%						0		
Samples and groups																					
Sample A	119	5,9	5,0	20							20	19	95%						0		
(1) Standard method	119	5,9	5,0	20	0	CVP	121	1,4	12%	106	136	20									
Sample B	168	8,5	5,1	20							20	19	95%						0		
(1) Standard method	168	8,5	5,1	20	0	CVP	170	2,1	12%	149	191	20									
(31) Albumin (elpho) [-]				9							9	9	100%						0		
Samples and groups																					
Sample A	0,643	0,03	6,0	9		CVP	0,645	0,012	15%	0,548	0,742	9	9	100%					0		
(0) Not specified	0,643	0,03	6,0	9	0							9									
Sample B	0,615	0,06	11	9		CVP	0,634	0,016	15%	0,538	0,73	9	9	100%					0		
(0) Not specified	0,615	0,06	11	9	0							9									
(32) gamma-globuline (elpho) [-]				9							9	8	89%						0		
Samples and groups																					
Sample A	0,126	0,01	11	9		CVP	0,123	,0045	30%	0,086	0,16	9	9	100%					0		
(0) Not specified	0,126	0,01	11	9	0							9									
Sample B	0,125	0,01	15	9		CVP	0,124	,0049	30%	0,086	0,162	9	8	89%					0		
(0) Not specified	0,125	0,01	15	9	0							9									

Summary statistics - quantitative results

(Groups: measurement principle)

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

EQA round: AKS1/21 - Basic Clinical Chemistry - Serum

Deadline: 29.01.2021

Test	[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}
(35) alpha-amylase pancreatic	[µkat/L]				20								20	20	100%						0		
Samples and groups																							
Sample A		7,19	0,22	3,1	20		CVP	7,24	0,080	18%	5,93	8,55	20	20	100%						0		
(1) With IFCC calibration		7,19	0,22	3,1	20	0							20										
Sample B		7,15	0,21	2,9	20		CVP	7,21	0,078	18%	5,91	8,51	20	20	100%						0		
(1) With IFCC calibration		7,15	0,21	2,9	20	0							20										
(36) Calcium ionised	[mmol/L]				6								6	5	83%						0		
Samples and groups																							
Sample A		1,32	0,07	5,6	6		CVP	1,32	0,019	10%	1,18	1,46	6	5	83%						0		
(2) Direct ISE		1,32	0,07	5,6	6	0							6										
Sample B		1,67	0,03	2,2	6		CVP	1,68	0,016	10%	1,51	1,85	6	5	83%						0		
(2) Direct ISE		1,67	0,03	2,2	6	0							6										

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End of report

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