Summary statistics - quantitative results

(Groups: measurement principle)

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

EQA round: AKS2/21 - Basic Clinical Chemistry - Serum

Deadline: 09.04.2021

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]				60							0								60	58	97%
Samples and groups																						
Sample A		128	2,1	1,6	60							0			CRV	128,3	1,9	5%	121	135	60	59	98%
(2) Indirect ISE		127	2,0	1,6	49	0															49		
(3) Direct ISE		129	2,6	2,0	11	0															11		
Sample B		140	2,5	1,8	60							0			CRV	140,4	2,1	5%	133	148	60	58	97%
(2) Indirect ISE		140	2,5	1,8	49	0															49		
(3) Direct ISE		141	2,6	1,8	11	0															11		
(2) Potassium	[mmol/L]				60							0								60	57	95%
Samples and groups																						
Sample A		3,37	0,05	1,7	60							0			CRV	3,353	0,050	7%	3,11	3,59	60	58	97%
(2) Indirect ISE		3,38	0,06	1,8	49	0															49		
(3) Direct ISE		3,34	0,07	2,3	11	0															11		
Sample B		6,79	0,14	2,1	60							0			CRV	6,78	0,100	7%	6,3	7,26	60	58	97%
(2) Indirect ISE		6,79	0,13	2,0	49	0															49		
(3) Direct ISE		6,79	0,20	2,9	11	0															11		
(3) Chloride	[mmol/L]				60							60	57	95%						0		
Samples and groups																						
Sample A		111	2,3	2,1	60		CVP	112	0,37	7%	104	120	60	58	97%						0		
(3) Indirect ISE		111	2,3	2,1	49	0							49										
(4) Direct ISE		109	4,1	3,8	11	0							11										
Sample B		130	2,6	2,0	60		CVP	131	0,41	7%	121	141	60	58	97%						0		
(3) Indirect ISE		130	2,4	1,9	49	0							49										
(4) Direct ISE		128	3,4	2,6	11	0							11										
(4) Calcium	[mmol/L]				56							0								56	54	96%
Samples and groups																						
Sample A		2,91	0,07	2,5	56							0			CRV	2,926	0,047	8%	2,69	3,17	56	55	98%
(2) Phot. with o-cresolftalexon		2,90	0,05	1,8	9	0															9		
(3) Photom. with arsenazo III		2,91	0,08	3,0	27	0															27		
(4) Photomet. with NM-BAPTA		2,91	0,06	2,2	20	0															20		
Sample B		3,04	0,08	2,7	56							0			CRV	3,013	0,045	8%	2,77	3,26	56	55	98%
(2) Phot. with o-cresolftalexon		3,06	0,06	2,2	9	0															9		
(3) Photom. with arsenazo III		3,03	0,09	3,1	27	0															27		
(4) Photomet. with NM-BAPTA		3,04	0,08	2,6	20	0															20		
(5) Inorganic phosphate	[mmol/L]				54							54	53	98%						0		
Samples and groups																						
Sample A		1,04	0,03	3,1	54		CVP	1,03	,0045	10%	0,927	1,14	54	53	98%						0		
(1) UV-molybdate method		1,04	0,03	3,0	53	0							53										

Summary statistics - quantitative results

(Groups: measurement principle)

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

EQA round: AKS2/21 - Basic Clinical Chemistry - Serum

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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}
(5) Inorganic phosphate [mmol/L]				54							54	53	98%						0		
Samples and groups																					
Sample A	1,04	0,03	3,1	54		CVP	1,03	,0045	10%	0,927	1,14	54	53	98%					0		
Other				1	0	1x 2					1										
Sample B	1,72	0,03	2,2	54		CVP	1,72	,0065	10%	1,54	1,9	54	54	100%					0		
(1) UV-molybdate method	1,72	0,03	2,2	53	0						53										
Other				1	0	1x 2					1										
(6) Iron [µmol/L]				51							51	48	94%						0		
Samples and groups																					
Sample A	40,9	1,4	3,5	51		CVP	40,8	0,20	15%	34,6	47	51	48	94%					0		
(2) Method with ferrozine/ferene	41,1	1,3	3,1	35	0						35										
(4) Method with TPTZ	40,4	1,6	4,0	16	0						16										
Sample B	34,0	0,89	2,6	51		CVP	34,1	0,13	15%	28,9	39,3	51	50	98%					0		
(2) Method with ferrozine/ferene	34,0	0,91	2,7	35	0						35										
(4) Method with TPTZ	33,8	0,80	2,4	16	0						16										
(7) Magnesium [mmol/L]				55							0								55	52	95%
Samples and groups																					
Sample A	0,818	0,02	2,8	55							0			CRV	0,783	0,012	15%	0,665	0,901	55	54	98%
(2) Photometry	0,818	0,02	2,8	52	0														52		
Other				3	0														3		
Sample B	2,11	0,07	3,8	55							0			CRV	2,121	0,032	15%	1,8	2,44	55	53	96%
(2) Photometry	2,11	0,07	3,6	52	0														52		
Other				3	0														3		
(8) Lithium [mmol/L]				8							0								8	5	63%
Samples and groups																					
Sample A	1,48	0,13	8,8	8							0			CRV	1,489	0,022	12%	1,31	1,67	8	7	88%
Other				8	0														8		
Sample B	0,865	0,13	15	8							0			CRV	0,829	0,012	12%	0,729	0,929	8	5	63%
Other				8	0														8		
(9) Total protein [g/L]				59							0								59	57	97%
Samples and groups																					
Sample A	70,8	1,7	2,3	59							0			CRV	72,1	1,7	9%	65,6	78,6	59	59	100%
(1) Biuret	70,8	1,7	2,3	59	0														59		
Sample B	83,8	1,9	2,3	59							0			CRV	84,3	2,0	9%	76,7	91,9	59	57	97%
(1) Biuret	83,8	1,9	2,3	59	0														59		
(10) Albumin [g/L]				57							57	57	100%						0		
Samples and groups																					
Sample A	43,9	1,7	3,8	57		CVP	44,7	0,21	10%	40,2	49,2	57	57	100%					0		
(1) BCG	44,1	1,5	3,4	52	0						52										
(2) BCP	41,6	0,74	1,8	5	0						5										
Sample B	51,5	1,9	3,6	57		CVP	52,4	0,25	10%	47,1	57,7	57	57	100%					0		

Summary statistics - quantitative results

(Groups: measurement principle)

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

EQA round: AKS2/21 - Basic Clinical Chemistry - Serum

Deadline: 09.04.2021

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}
(10) Albumin	[g/L]				57								57	57	100%							0		
Sample B		51,5	1,9	3,6	57		CVP	52,4	0,25	10%	47,1	57,7	57	57	100%							0		
(1) BCG		51,7	1,7	3,3	52	0							52											
(2) BCP		49,5	1,0	2,1	5	0							5											
(11) Osmolality	[mmol/kg]				19								19	18	95%							0		
Sample A		300	6,2	2,1	19		CVP	300	1,3	5%	285	315	19	19	100%							0		
(1) Osmometer		301	5,6	1,9	17	0							17											
Other					2	0							2											
Sample B		329	6,6	2,0	19		2x 99 CVP	329	1,6	5%	312	346	19	18	95%							0		
(1) Osmometer		330	5,1	1,5	17	0							17											
Other					2	0							2											
(12) Lactate	[mmol/L]				26		2x 99						26	26	100%							0		
Sample A		1,99	0,09	4,6	26		CVP	2,01	0,019	15%	1,7	2,32	26	26	100%							0		
(1) UV enzyme method		1,93	0,09	4,9	11	0							11											
(3) Photometric enzyme method		2,01	0,09	4,6	14	0							14											
Other					1	0							1											
Sample B		2,46	0,13	5,4	26		1x 2 CVP	2,49	0,026	15%	2,11	2,87	26	26	100%							0		
(1) UV enzyme method		2,40	0,16	6,7	11	0							11											
(3) Photometric enzyme method		2,48	0,12	4,7	14	0							14											
Other					1	0							1											
(13) Bilirubin total	[µmol/L]				62		1x 2						0									62	59	95%
Sample A		28,8	2,8	9,8	62								0			CRV	27,7	0,70	21%	21,8	33,6	62	60	97%
(1) Jendrassik-Gróf		31,2	2,5	8,1	6	0																6		
(2) DCA, DPD		28,7	2,8	9,7	54	0																54		
Other					2	0																2		
Sample B		75,9	5,1	6,7	62								0			2x 4 CRV	74,9	1,6	21%	59,1	90,7	62	61	98%
(1) Jendrassik-Gróf		82,8	6,2	7,5	6	0																6		
(2) DCA, DPD		75,5	5,0	6,6	54	0																54		
Other					2	0																2		
(15) Cholesterol	[mmol/L]				57								2	1	50%	2x 4						55	52	95%
Sample A		3,87	0,15	3,9	57								2	1	50%							55	54	98%
(1) Enzyme method CHOD-PAP		3,88	0,15	3,8	55	0										CRV	3,906	0,039	9%	3,55	4,26	55		
Other					2	0							2											
Sample B		5,13	0,21	4,0	57		2x 1/149						2	2	100%							55	53	96%
(1) Enzyme method CHOD-PAP		5,14	0,21	4,0	55	0										CRV	5,31	0,053	9%	4,83	5,79	55		

Summary statistics - quantitative results

(Groups: measurement principle)

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

EQA round: AKS2/21 - 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]				57							2	1	50%						55	52	95%
Sample B		5,13	0,21	4,0	57							2	2	100%						55	53	96%
Other					2	0						2										
						2x 1/149																
(16) Glucose	[mmol/L]				63							0								63	62	98%
Sample A		3,90	0,11	2,7	63							0			CRV	3,89	0,039	8%	3,57	4,21	63	62	98%
(1) GOD photometry		3,92	0,10	2,6	21	0														21		
(3) Method with hexokinase		3,89	0,11	2,8	41	0														41		
Other					1	0														1		
															1x 2							
Sample B		11,8	0,30	2,5	63							0			CRV	11,84	0,12	8%	10,8	12,8	63	63	100%
(1) GOD photometry		11,9	0,31	2,6	21	0														21		
(3) Method with hexokinase		11,8	0,30	2,5	41	0														41		
Other					1	0														1		
															1x 2							
(17) Uric acid	[µmol/L]				58							0								58	57	98%
Sample A		461	10	2,2	58							0			CRV	456,3	4,6	12%	401	512	58	58	100%
(2) Enzyme-photomet. m.		461	10	2,2	58	0														58		
Sample B		360	6,7	1,9	58							0			CRV	361,4	3,6	12%	318	405	58	57	98%
(2) Enzyme-photomet. m.		360	6,7	1,9	58	0														58		
(18) Urea	[mmol/L]				62							0								62	61	98%
Sample A		30,8	1,2	3,9	62							0			CRV	31,96	0,32	15%	27,1	36,8	62	61	98%
(1) UV enzymatic m.(GMD)		30,8	1,2	3,9	61	0														61		
Other					1	0														1		
															1x 2							
Sample B		20,0	0,69	3,4	62							0			CRV	20,74	0,21	15%	17,6	23,9	62	62	100%
(1) UV enzymatic m.(GMD)		20,0	0,69	3,4	61	0														61		
Other					1	0														1		
															1x 2							
(19) Creatinine	[µmol/L]				62							0								62	59	95%
Sample A		121	4,1	3,4	62							0			CRV	119,6	1,7	13%	104	136	62	60	97%
(1) Jaffe		122	4,5	3,7	40	0														40		
(3) Enzyme		120	3,6	3,0	22	0														22		
Sample B		347	13	3,6	62							0			CRV	351,5	5,3	13%	305	398	62	61	98%
(1) Jaffe		344	14	4,1	40	0														40		
(3) Enzyme		351	8,2	2,3	22	0														22		
(20) Triacylglycerols	[mmol/L]				56							0								56	55	98%
Sample A		1,80	0,07	3,9	56							0			CRV	1,771	0,018	15%	1,5	2,04	56	56	100%
(1) Photometric enzyme (GPO-PAP)		1,80	0,06	3,8	52	0														52		
Other					4	0														4		
															4x 2							

Summary statistics - quantitative results

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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}
Sample B	1,05	0,06	6,6	56							0			CRV 1,032	,0100	15%	0,877	1,19	56	55	98%
(1) Photometric enzyme (GPO-PAP)	1,04	0,06	6,3	52	0														52		
Other				4	0														4		
														4x 2							
(21) ALP [µkat/L]				59							0								59	56	95%
Samples and groups																					
Sample A	3,63	0,42	11	59							0			CRV 3,62	0,100	28%	2,6	4,64	59	56	95%
(3) IFCC method	3,63	0,42	11	58	0														58		
Other				1	0														1		
														1x 1							
Sample B	6,42	0,79	12	59							0			CRV 6,34	0,18	28%	4,56	8,12	59	59	100%
(3) IFCC method	6,41	0,79	12	58	0														58		
Other				1	0														1		
														1x 1							
(22) alpha-amylase [µkat/L]				61							2	2	100%						59	58	98%
Samples and groups																					
Sample A	5,39	0,28	5,3	61							2	2	100%						59	58	98%
(1) IFCC method	5,36	0,26	4,8	58	0									CRV 5,35	0,16	15%	4,54	6,16	58		
Other				3	0						2								1		
						2x 1/149								2x 1/149, 1x 99							
Sample B	7,33	0,38	5,1	61							2	2	100%						59	59	100%
(1) IFCC method	7,30	0,36	4,9	58	0									CRV 7,32	0,21	15%	6,22	8,42	58		
Other				3	0						2								1		
						2x 1/149								2x 1/149, 1x 99							
(23) AST [µkat/L]				62							0								62	61	98%
Samples and groups																					
Sample A	1,75	0,08	4,6	62							0			CRV 1,771	0,045	15%	1,5	2,04	62	61	98%
(1) IFCC method	1,75	0,08	4,6	62	0														62		
Sample B	2,61	0,13	5,1	62							0			CRV 2,668	0,059	15%	2,26	3,07	62	62	100%
(1) IFCC method	2,61	0,13	5,1	62	0														62		
(24) ALT [µkat/L]				62							0								62	61	98%
Samples and groups																					
Sample A	2,22	0,12	5,4	62							0			CRV 2,213	0,051	15%	1,88	2,55	62	61	98%
(1) IFCC method	2,22	0,12	5,4	62	0														62		
Sample B	3,93	0,19	4,7	62							0			CRV 3,982	0,088	15%	3,38	4,58	62	61	98%
(1) IFCC method	3,93	0,19	4,7	62	0														62		
(26) CK [µkat/L]				58							0								58	56	97%
Samples and groups																					
Sample A	6,78	0,43	6,4	58							0			CRV 7,12	0,18	20%	5,69	8,55	58	57	98%
(1) IFCC method	6,78	0,43	6,4	58	0														58		
Sample B	8,69	0,61	7,1	58							0			CRV 9,1	0,30	20%	7,28	11	58	56	97%
(1) IFCC method	8,69	0,61	7,1	58	0														58		
(27) gamma-GT [µkat/L]				60							0								60	59	98%
Samples and groups																					
Sample A	1,29	0,04	3,3	60							0			CRV 1,32	0,038	15%	1,12	1,52	60	59	98%

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}
(27) gamma-GT	[µkat/L]				60								0									60	59	98%
Sample A		1,29	0,04	3,3	60								0			CRV	1,32	0,038	15%	1,12	1,52	60	59	98%
(1) IFCC method		1,29	0,04	3,2	59	0																59		
Other					1	0																1		
																1x 0								
Sample B		2,10	0,05	2,8	60								0			CRV	2,102	0,054	15%	1,78	2,42	60	59	98%
(1) IFCC method		2,10	0,05	2,7	59	0																59		
Other					1	0																1		
																1x 0								
(28) LD	[µkat/L]				45								0									45	42	93%
Sample A		6,06	0,21	3,5	45								0			CRV	6,04	0,13	18%	4,95	7,13	45	43	96%
(3) IFCC method		6,06	0,21	3,5	45	0																45		
Sample B		4,93	0,20	4,1	45								0			CRV	4,93	0,12	18%	4,04	5,82	45	43	96%
(3) IFCC method		4,93	0,20	4,1	45	0																45		
(29) Lipase	[µkat/L]				26								21	20	95%							0		
Sample A		1,22	0,12	10	26								21	20	95%							0		
(0) Not specified; (58) Beckman Coulter (AU)		1,21	0,04	3,7	10	0	CVPG	1,21	0,018	24%	0,919	1,51	10											
(0) Not specified; (60) Roche		1,14	0,03	2,6	9	0	CVPG	1,15	0,016	24%	0,874	1,43	9											
Other					7	0							2											
						1x 0/12, 1x 0/149, 3x 0/178, 2x 0/179																				
Sample B		2,06	0,12	6,0	26								21	21	100%							0		
(0) Not specified; (58) Beckman Coulter (AU)		2,03	0,06	3,0	10	0	CVPG	2,02	0,032	24%	1,53	2,51	10											
(0) Not specified; (60) Roche		2,02	0,03	1,5	9	0	CVPG	2	0,027	24%	1,52	2,48	9											
Other					7	0							2											
						1x 0/12, 1x 0/149, 3x 0/178, 2x 0/179																				
(30) Cholinesterase	[µkat/L]				28								28	25	89%							0		
Sample A		120	6,1	5,1	28								28	25	89%							0		
(1) Standard method		120	6,1	5,1	28	0	CVP	119	1,1	12%	104	134	28											
Sample B		149	8,4	5,6	28								28	25	89%							0		
(1) Standard method		149	8,4	5,6	28	0	CVP	149	1,4	12%	131	167	28											
(31) Albumin (elpho)	[-]				12								12	11	92%							0		
Sample A		0,617	0,04	6,4	12		CVP	0,629	0,011	15%	0,534	0,724	12	12	100%							0		
(0) Not specified		0,617	0,04	6,4	12	0							12											
Sample B		0,605	0,04	7,6	12		CVP	0,619	0,013	15%	0,526	0,712	12	11	92%							0		
(0) Not specified		0,605	0,04	7,6	12	0							12											
(32) gamma-globuline (elpho)	[-]				12								12	12	100%							0		
Sample A		0,136	0,01	9,3	12		CVP	0,137	,0044	30%	0,095	0,179	12	12	100%							0		
(0) Not specified		0,136	0,01	9,3	12	0							12											
Sample B		0,136	0,01	8,5	12		CVP	0,135	,0047	30%	0,094	0,176	12	12	100%							0		

Summary statistics - quantitative results

(Groups: measurement principle)

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

EQA round: AKS2/21 - Basic Clinical Chemistry - Serum

Deadline: 09.04.2021

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}
(32) gamma-globuline (elpho)	[-]				12								12	12	100%						0		
Samples and groups																							
Sample B		0,136	0,01	8,5	12		CVP	0,135	,0047	30%	0,094	0,176	12	12	100%						0		
(0) Not specified		0,136	0,01	8,5	12	0							12										
(35) alpha-amylase pancreatic	[µkat/L]				10								10	10	100%						0		
Samples and groups																							
Sample A		4,78	0,30	6,3	10		CVP	4,72	0,055	18%	3,87	5,57	10	10	100%						0		
(1) With IFCC calibration		4,78	0,30	6,3	10	0							10										
Sample B		6,53	0,40	6,1	10		CVP	6,42	0,075	18%	5,26	7,58	10	10	100%						0		
(1) With IFCC calibration		6,53	0,40	6,1	10	0							10										
(36) Calcium ionised	[mmol/L]				5								5	5	100%						0		
Samples and groups																							
Sample A		1,91	0,02	1,4	5		CVP	1,91	0,018	10%	1,71	2,11	5	5	100%						0		
(2) Direct ISE		1,91	0,02	1,4	5	0							5										
Sample B		1,95	0,02	1,1	5		CVP	1,95	0,018	10%	1,75	2,15	5	5	100%						0		
(2) Direct ISE		1,95	0,02	1,1	5	0							5										

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End of report

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