Summary statistics - quantitative results

(Groups: measurement principle)

Filter: Slovakia, minimal size of groups n = 5

EQA round: AKS1/18 - Basic Clinical Chemistry - Serum

Dead line: 02.02.2018

RoM = robust average
SD = standard deviation
CV = coefficient of variation
Ntot = total number of 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]				31							0								31	28	90%
Samples and groups																						
Sample A		131	3,1	2,3	31							0			CRV	130,3	2,0	5%	123	137	31	29	94%
(2) Indirect ISE		131	2,7	2,1	22	0															22		
(3) Direct ISE		133	3,7	2,8	7	0															7		
Other					2	0															2		
															2x 99								
Sample B		142	2,9	2,1	31							0			CRV	141	2,1	5%	133	149	31	29	94%
(2) Indirect ISE		142	2,6	1,8	22	0															22		
(3) Direct ISE		142	4,7	3,3	7	0															7		
Other					2	0															2		
															2x 99								
(2) Potassium	[mmol/L]				31							0								31	29	94%
Samples and groups																						
Sample A		4,94	0,14	2,8	31							0			CRV	4,887	0,079	7%	4,54	5,23	31	29	94%
(2) Indirect ISE		4,95	0,14	2,8	22	0															22		
(3) Direct ISE		4,97	0,11	2,2	7	0															7		
Other					2	0															2		
															2x 99								
Sample B		6,82	0,21	3,0	31							0			CRV	6,729	0,10	7%	6,25	7,2	31	29	94%
(2) Indirect ISE		6,84	0,21	3,1	22	0															22		
(3) Direct ISE		6,80	0,20	2,9	7	0															7		
Other					2	0															2		
															2x 99								
(3) Chloride	[mmol/L]				31							31	28	90%						0		
Samples and groups																						
Sample A		113	3,3	2,9	31		CVP	113	0,62	7%	105	121	31	29	94%						0		
(3) Indirect ISE		113	3,2	2,9	21	0							21										
(4) Direct ISE		114	2,9	2,5	6	0							6										
Other					4	0							4										
							3x 2, 1x 99																
Sample B		131	3,0	2,3	31		CVP	132	0,65	7%	122	142	31	28	90%						0		
(3) Indirect ISE		132	2,7	2,0	21	0							21										
(4) Direct ISE		131	2,5	1,9	6	0							6										
Other					4	0							4										
							3x 2, 1x 99																
(4) Calcium	[mmol/L]				30							0								30	29	97%
Samples and groups																						
Sample A		3,43	0,12	3,4	30							0			CRV	3,471	0,052	8%	3,19	3,75	30	29	97%
(2) Phot. with o-cresolftalexon		3,53	0,16	4,6	5	0															5		
(3) Photom. with arsenazo III		3,39	0,07	2,1	18	0															18		

Summary statistics - quantitative results

(Groups: measurement principle)

Filter: Slovakia, minimal size of groups n = 5

EQA round: AKS1/18 - Basic Clinical Chemistry - Serum

Dead line: 02.02.2018

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}
(4) Calcium [mmol/L]				30							0								30	29	97%
Samples and groups																					
Sample A	3,43	0,12	3,4	30							0			CRV 3,471	0,052	8%	3,19	3,75	30	29	97%
(4) Complex Ca-NM-BAPTA	3,47	0,13	3,6	7	0														7		
Sample B	2,53	0,08	3,5	30							0			CRV 2,509	0,038	8%	2,3	2,71	30	29	97%
(2) Phot. with o-cresolftalexon	2,58	0,07	2,9	5	0														5		
(3) Photom. with arsenazo III	2,50	0,07	3,1	18	0														18		
(4) Complex Ca-NM-BAPTA	2,53	0,08	3,2	7	0														7		
(5) Inorganic phosphate [mmol/L]				29							29	28	97%						0		
Samples and groups																					
Sample A	1,05	0,04	4,0	29		CVP 1,04	,0074	10%	0,936	1,15	29	28	97%						0		
(1) UV-molybdate method	1,05	0,04	3,9	27	0						27										
Other				2	0						2										
					1x 2, 1x 3																
Sample B	1,74	0,04	2,5	29		CVP 1,73	,0100	10%	1,55	1,91	29	28	97%						0		
(1) UV-molybdate method	1,74	0,04	2,3	27	0						27										
Other				2	0						2										
					1x 2, 1x 3																
(6) Iron [µmol/L]				28							28	26	93%						0		
Samples and groups																					
Sample A	38,4	1,0	2,7	28		CVP 38,5	0,22	15%	32,7	44,3	28	26	93%						0		
(2) Method with ferrozine/ferene	38,8	1,0	2,7	18	0						18										
(4) Method with TPTZ	37,8	0,45	1,2	10	0						10										
Sample B	18,9	1,0	5,4	28		CVP 18,8	0,15	15%	15,9	21,7	28	27	96%						0		
(2) Method with ferrozine/ferene	19,4	0,94	4,8	18	0						18										
(4) Method with TPTZ	18,1	0,29	1,6	10	0						10										
(7) Magnesium [mmol/L]				30							0								30	27	90%
Samples and groups																					
Sample A	0,753	0,02	3,3	30							0			CRV 0,725	0,011	15%	0,616	0,834	30	29	97%
(2) Photometry	0,754	0,02	3,3	29	0														29		
Other				1	0														1		
														1x 4							
Sample B	1,45	0,06	4,3	30							0			CRV 1,457	0,022	15%	1,23	1,68	30	27	90%
(2) Photometry	1,45	0,06	4,4	29	0														29		
Other				1	0														1		
														1x 4							
(8) Lithium [mmol/L]				5							0								5	4	80%
Samples and groups																					
Sample A	1,58	0,06	4,2	5							0			CRV 1,58	0,024	12%	1,39	1,77	5	4	80%
Other				5	1														5		
														1x 0, 1x 3, 3x 4							
Sample B	0,823	0,04	4,9	5							0			CRV 0,808	0,012	12%	0,711	0,905	5	4	80%
Other				5	1														5		
														1x 0, 1x 3, 3x 4							

Summary statistics - quantitative results

(Groups: measurement principle)

Filter: Slovakia, minimal size of groups n = 5

EQA round: AKS1/18 - Basic Clinical Chemistry - Serum

Dead line: 02.02.2018

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}
(9) Total protein [g/L]				32								0									32	29	91%
Samples and groups																							
Sample A	67,4	1,7	2,5	32								0			CRV	67,99	0,80	9%	61,8	74,2	32	30	94%
(1) Biuret	67,4	1,7	2,5	32	0																32		
Sample B	58,8	1,4	2,4	32								0			CRV	59,4	0,70	9%	54	64,8	32	30	94%
(1) Biuret	58,8	1,4	2,4	32	0																32		
(10) Albumin [g/L]				29								29	27	93%							0		
Samples and groups																							
Sample A	43,1	1,7	3,8	29		CVP	43,2	0,32	10%	38,8	47,6	29	28	97%							0		
(1) BCG	43,1	1,7	3,8	29	0							29											
Sample B	37,7	1,7	4,4	29		CVP	37,7	0,29	10%	33,9	41,5	29	28	97%							0		
(1) BCG	37,7	1,7	4,4	29	0							29											
(11) Osmolality [mmol/kg]				9								9	9	100%							0		
Samples and groups																							
Sample A	309	3,0	0,96	9		CVP	309	1,8	5%	293	325	9	9	100%							0		
(1) Osmometer	309	3,0	0,96	9	0							9											
Sample B	328	1,9	0,56	9		CVP	328	2,0	5%	311	345	9	9	100%							0		
(1) Osmometer	328	1,9	0,56	9	0							9											
(12) Lactate [mmol/L]				19								19	18	95%							0		
Samples and groups																							
Sample A	2,05	0,11	5,3	19		CVP	2,01	0,025	15%	1,7	2,32	19	18	95%							0		
(3) Photometric enzyme method	2,05	0,11	5,3	13	0							13											
Other				6	0							6											
						4x 1, 2x 2																	
Sample B	3,41	0,16	4,7	19		CVP	3,36	0,035	15%	2,85	3,87	19	18	95%							0		
(3) Photometric enzyme method	3,43	0,14	4,2	13	0							13											
Other				6	0							6											
						4x 1, 2x 2																	
(13) Bilirubin total [µmol/L]				31								0									31	30	97%
Samples and groups																							
Sample A	29,6	2,9	9,9	31								0			CRV	29,6	0,90	21%	23,3	35,9	31	30	97%
(2) DCA, DPD	29,1	2,7	9,3	26	0																26		
Other				5	0																5		
															1x 0, 4x 1								
Sample B	56,3	4,4	7,9	31								0			CRV	57,5	1,5	21%	45,4	69,6	31	30	97%
(2) DCA, DPD	55,4	4,2	7,6	26	0																26		
Other				5	0																5		
															1x 0, 4x 1								
(15) Cholesterol [mmol/L]				29								0									29	26	90%
Samples and groups																							
Sample A	3,93	0,18	4,5	29								0									29	28	97%
(1) Enzyme CHOD-PAP	3,93	0,18	4,5	29	0										CRV	3,955	0,040	9%	3,59	4,32	29		
Sample B	3,36	0,16	4,6	29								0									29	27	93%
(1) Enzyme CHOD-PAP	3,36	0,16	4,6	29	0										CRV	3,459	0,035	9%	3,14	3,78	29		

Summary statistics - quantitative results

(Groups: measurement principle)

Filter: Slovakia, minimal size of groups n = 5

EQA round: AKS1/18 - Basic Clinical Chemistry - Serum

Dead line: 02.02.2018

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}
(16) Glucose	[mmol/L]				32							0									32	30	94%
Samples and groups -																							
Sample A		4,23	0,11	2,6	32							0			CRV	4,189	0,042	8%	3,85	4,53	32	31	97%
(1) GOD photometry		4,30	0,10	2,4	11	0															11		
(3) Method with hexokinase		4,19	0,09	2,2	20	0															20		
Other					1	0															1		
															1x 2								
Sample B		8,97	0,22	2,5	32							0			CRV	8,819	0,088	8%	8,11	9,53	32	30	94%
(1) GOD photometry		9,10	0,23	2,6	11	0															11		
(3) Method with hexokinase		8,93	0,22	2,5	20	0															20		
Other					1	0															1		
															1x 2								
(17) Uric acid	[µmol/L]				30							0									30	28	93%
Samples and groups -																							
Sample A		604	22	3,6	30							0			CRV	614,3	6,1	12%	540	689	30	29	97%
(2) Enzyme-photomet. m.		604	22	3,6	30	0															30		
Sample B		246	12	4,8	30							0			CRV	248,1	2,5	12%	218	278	30	28	93%
(2) Enzyme-photomet. m.		246	12	4,8	30	0															30		
(18) Urea	[mmol/L]				31							0									31	30	97%
Samples and groups -																							
Sample A		31,2	1,1	3,4	31							0			CRV	32,33	0,32	15%	27,4	37,2	31	30	97%
(1) UV enzymatic m.(GMD)		31,2	1,1	3,5	30	0															30		
Other					1	0															1		
															1x 2								
Sample B		25,0	0,87	3,5	31							0			CRV	25,46	0,25	15%	21,6	29,3	31	30	97%
(1) UV enzymatic m.(GMD)		25,0	0,91	3,6	30	0															30		
Other					1	0															1		
															1x 2								
(19) Creatinine	[µmol/L]				31							0									31	30	97%
Samples and groups -																							
Sample A		385	14	3,6	31							0			CRV	391	3,9	13%	340	442	31	30	97%
(2) Jaffé without depro. (with corr.)		383	16	4,2	19	0															19		
(3) Enzyme		388	9,2	2,4	10	0															10		
Other					2	0															2		
															2x 1								
Sample B		488	17	3,4	31							0			CRV	501,5	5,0	13%	436	567	31	30	97%
(2) Jaffé without depro. (with corr.)		482	17	3,5	19	0															19		
(3) Enzyme		498	15	3,0	10	0															10		
Other					2	0															2		
															2x 1								
(20) Triglycerides	[mmol/L]				29							0									29	28	97%
Samples and groups -																							
Sample A		0,909	0,03	3,7	29							0			CRV	0,928	,0093	15%	0,788	1,07	29	28	97%
(1) GPO-PAP		0,909	0,03	3,7	29	0															29		
Sample B		1,25	0,04	3,6	29							0			CRV	1,254	0,015	15%	1,06	1,45	29	28	97%
(1) GPO-PAP		1,25	0,04	3,6	29	0															29		

Summary statistics - quantitative results

(Groups: measurement principle)

Filter: Slovakia, minimal size of groups n = 5

EQA round: AKS1/18 - Basic Clinical Chemistry - Serum

Dead line: 02.02.2018

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}
(21) ALP	[µkat/L]				29								10	9	90%							19	19	100%
Samples and groups -																								
Sample A		2,75	0,43	16	29								10	9	90%							19	19	100%
(3) IFCC method		2,87	0,41	14	19	0										CRV	2,894	0,070	24%	2,19	3,59	19		
(3) IFCC method; (60) Roche		2,44	0,11	4,5	10	0	CVPG	2,41	0,034	18%	1,97	2,85	10											
Sample B		7,25	1,4	20	29								10	9	90%							19	19	100%
(3) IFCC method		7,84	1,3	17	19	0										CRV	7,738	0,18	24%	5,88	9,6	19		
(3) IFCC method; (60) Roche		6,19	0,30	4,8	10	0	CVPG	6,22	0,094	18%	5,1	7,34	10											
(22) alpha-amylase	[µkat/L]				31								0									31	30	97%
Samples and groups -																								
Sample A		7,14	0,34	4,7	31								0									31	30	97%
(1) IFCC method		7,14	0,34	4,7	31	0										CRV	7,243	0,20	15%	6,15	8,33	31		
Sample B		5,48	0,27	4,9	31								0									31	30	97%
(1) IFCC method		5,48	0,27	4,9	31	0										CRV	5,518	0,15	15%	4,69	6,35	31		
(23) AST	[µkat/L]				31								0									31	28	90%
Samples and groups -																								
Sample A		1,67	0,14	8,3	31								0			CRV	1,675	0,037	15%	1,42	1,93	31	28	90%
(1) IFCC method		1,67	0,14	8,3	31	0																31		
Sample B		4,02	0,30	7,5	31								0			CRV	4,026	0,090	15%	3,42	4,63	31	29	94%
(1) IFCC method		4,02	0,30	7,5	31	0																31		
(24) ALT	[µkat/L]				32								0									32	31	97%
Samples and groups -																								
Sample A		4,24	0,21	5,0	32								0			CRV	4,303	0,11	15%	3,65	4,95	32	31	97%
(1) IFCC method		4,24	0,21	5,0	32	0																32		
Sample B		3,78	0,17	4,6	32								0			CRV	3,826	0,085	15%	3,25	4,4	32	31	97%
(1) IFCC method		3,78	0,17	4,6	32	0																32		
(26) CK	[µkat/L]				30								0									30	29	97%
Samples and groups -																								
Sample A		8,92	0,57	6,4	30								0			CRV	8,778	0,24	20%	7,02	10,6	30	29	97%
(1) IFCC method		8,92	0,57	6,4	30	0																30		
Sample B		6,01	0,41	6,7	30								0			CRV	6,078	0,19	20%	4,86	7,3	30	29	97%
(1) IFCC method		6,01	0,41	6,7	30	0																30		
(27) gamma-GT	[µkat/L]				30								0									30	26	87%
Samples and groups -																								
Sample A		1,33	0,06	4,8	30								0			CRV	1,395	0,035	15%	1,18	1,61	30	26	87%
(1) IFCC method		1,33	0,05	4,4	29	0																29		
Other					1	0																1		
																1x 99								
Sample B		3,17	0,20	6,4	30								0			CRV	3,242	0,080	15%	2,75	3,73	30	28	93%
(1) IFCC method		3,19	0,18	5,6	29	0																29		
Other					1	0																1		
																1x 99								

Summary statistics - quantitative results

(Groups: measurement principle)

Filter: Slovakia, minimal size of groups n = 5

EQA round: AKS1/18 - Basic Clinical Chemistry - Serum

Dead line: 02.02.2018

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}
(28) LD [µkat/L]				26							0								26	25	96%
Samples and groups																					
Sample A	4,57	0,22	4,8	26							0			CRV	4,498	0,098	18%	3,68	5,31	26	25	96%
(3) IFCC method	4,57	0,22	4,8	26	0														26		
Sample B	3,37	0,19	5,6	26							0			CRV	3,302	0,073	18%	2,7	3,9	26	25	96%
(3) IFCC method	3,37	0,19	5,6	26	0														26		
(29) Lipase [µkat/L]				19							17	16	94%						0		
Samples and groups																					
Sample A	1,28	0,14	11	19							17	16	94%						0		
(0) Not specified; (58) Beckman Coulter (Olympus)	1,39	0,05	3,7	7	0	CVPG	1,39	0,035	24%	1,05	1,73	7									
(0) Not specified; (60) Roche	1,24	0,13	10	9	0	CVPG	1,24	0,048	24%	0,942	1,54	9									
Other				3	0	1x 0/12, 2x 0/178						1									
Sample B	4,58	1,1	23	19							17	16	94%						0		
(0) Not specified; (58) Beckman Coulter (Olympus)	5,58	0,24	4,4	7	0	CVPG	5,61	0,12	24%	4,26	6,96	7									
(0) Not specified; (60) Roche	4,08	0,67	16	9	0	CVPG	4,22	0,32	24%	3,2	5,24	9									
Other				3	0	1x 0/12, 2x 0/178						1									
(30) Cholinesterase [µkat/L]				18							18	18	100%						0		
Samples and groups																					
Sample A	138	5,8	4,2	18							18	18	100%						0		
(1) ECCLS method 37°C	137	5,6	4,1	16	0	CVP	139	1,6	12%	122	156	16									
Other				2	0	2x 99						2									
Sample B	120	5,3	4,4	18							18	18	100%						0		
(1) ECCLS method 37°C	120	5,4	4,5	16	0	CVP	122	1,3	12%	107	137	16									
Other				2	0	2x 99						2									
(31) Albumin (elpho) [-]				9							9	8	89%						0		
Samples and groups																					
Sample A	0,613	0,04	6,5	9		CVP	0,622	0,015	15%	0,528	0,716	9	8	89%					0		
(0) Not specified	0,613	0,04	6,5	9	0							9									
Sample B	0,606	0,04	7,8	9		CVP	0,627	0,014	15%	0,532	0,722	9	8	89%					0		
(0) Not specified	0,606	0,04	7,8	9	0							9									
(32) gamma-globuline (elpho) [-]				9							9	8	89%						0		
Samples and groups																					
Sample A	0,129	0,01	14	9		CVP	0,132	,0055	30%	0,092	0,172	9	9	100%					0		
(0) Not specified	0,129	0,01	14	9	0							9									
Sample B	0,129	0,01	15	9		CVP	0,13	,0047	30%	0,091	0,169	9	8	89%					0		
(0) Not specified	0,129	0,01	15	9	0							9									
(35) alpha-amylase pancreatic [µkat/L]				14							14	14	100%						0		
Samples and groups																					
Sample A	6,39	0,09	1,5	14		CVP	6,37	0,065	10%	5,73	7,01	14	14	100%					0		
(1) With IFCC calibration	6,39	0,09	1,5	14	0							14									
Sample B	4,83	0,08	1,8	14		CVP	4,8	0,054	10%	4,32	5,28	14	14	100%					0		

Summary statistics - quantitative results

(Groups: measurement principle)

Filter: Slovakia, minimal size of groups n = 5

EQA round: AKS1/18 - Basic Clinical Chemistry - Serum

Dead line: 02.02.2018

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]				14								14	14	100%						0		
Samples and groups																							
Sample B		4,83	0,08	1,8	14		CVP	4,8	0,054	10%	4,32	5,28	14	14	100%						0		
(1) With IFCC calibration		4,83	0,08	1,8	14	0							14										
(36) Calcium ionised	[mmol/L]				4								4	4	100%						0		
Samples and groups																							
Sample A		2,36	0,09	4,2	4		CVP	2,35	0,054	10%	2,11	2,59	4	4	100%						0		
Other					4	0	4x 2						4										
Sample B		1,73	0,09	5,6	4		CVP	1,74	0,028	10%	1,56	1,92	4	4	100%						0		
Other					4	0	4x 2						4										

End of report