Summary statistics - quantitative results

(Groups: measurement principle)

Filter: Slovakia, minimal size of groups n = 5

EQA round: AKS3/19 - Basic Clinical Chemistry - Serum

Dead line: 26.07.2019

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]				28							28	28	100%						0		
Samples and groups																						
Sample A		133	2,5	1,9	28		CVP 133	0,55	4%	127	139	28	28	100%						0		
(2) Indirect ISE		133	2,3	1,8	23	0						23										
Other					5	0						5										
							4x 3, 1x 99															
Sample B		156	2,5	1,6	28		CVP 156	0,65	4%	149	163	28	28	100%						0		
(2) Indirect ISE		156	2,8	1,8	23	0						23										
Other					5	0						5										
							4x 3, 1x 99															
(2) Potassium	[mmol/L]				28							28	26	93%						0		
Samples and groups																						
Sample A		5,77	0,15	2,6	28		CVP 5,81	0,032	6%	5,46	6,16	28	28	100%						0		
(2) Indirect ISE		5,78	0,13	2,3	23	0						23										
Other					5	0						5										
							4x 3, 1x 99															
Sample B		2,87	0,06	2,2	28		CVP 2,85	0,015	6%	2,67	3,03	28	26	93%						0		
(2) Indirect ISE		2,87	0,05	1,8	23	0						23										
Other					5	0						5										
							4x 3, 1x 99															
(3) Chloride	[mmol/L]				28							28	28	100%						0		
Samples and groups																						
Sample A		114	1,8	1,5	28		CVP 114	0,52	7%	106	122	28	28	100%						0		
(3) Indirect ISE		114	2,1	1,9	22	0						22										
Other					6	0						6										
							2x 2, 4x 4															
Sample B		140	2,3	1,6	28		CVP 140	0,63	7%	130	150	28	28	100%						0		
(3) Indirect ISE		140	1,9	1,4	22	0						22										
Other					6	0						6										
							2x 2, 4x 4															
(4) Calcium	[mmol/L]				27							27	26	96%						0		
Samples and groups																						
Sample A		2,80	0,07	2,5	27		CVP 2,81	0,016	7%	2,61	3,01	27	26	96%						0		
(3) Photom. with arsenazo III		2,81	0,07	2,7	18	0						18										
(4) Photomet. with NM-BAPTA		2,78	0,05	2,1	5	0						5										
Other					4	0						4										
							4x 2															
Sample B		2,00	0,04	2,1	27		CVP 2	0,011	7%	1,86	2,14	27	26	96%						0		
(3) Photom. with arsenazo III		2,00	0,04	2,1	18	0						18										
(4) Photomet. with NM-BAPTA		1,99	0,03	1,5	5	0						5										
Other					4	0						4										
							4x 2															

Summary statistics - quantitative results

(Groups: measurement principle)

Filter: Slovakia, minimal size of groups n = 5

EQA round: AKS3/19 - Basic Clinical Chemistry - Serum

Dead line: 26.07.2019

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]				26								26	25	96%							0		
Samples and groups																								
Sample A		1,31	0,03	2,5	26		CVP	1,33	0,010	10%	1,19	1,47	26	26	100%							0		
(1) UV-molybdate method		1,32	0,03	2,5	22	0							22											
Other					4	0							4											
							4x 2																	
Sample B		0,921	0,03	3,2	26		CVP	0,93	,0076	10%	0,837	1,03	26	25	96%							0		
(1) UV-molybdate method		0,920	0,03	3,4	22	0							22											
Other					4	0							4											
							4x 2																	
(6) Iron	[µmol/L]				22								22	22	100%							0		
Samples and groups																								
Sample A		42,2	1,3	3,0	22		CVP	42,2	0,26	15%	35,8	48,6	22	22	100%							0		
(2) Method with ferrozine/ferene		42,4	1,9	4,5	11	0							11											
(4) Method with TPTZ		42,0	0,81	1,9	11	0							11											
Sample B		32,1	1,3	4,1	22		CVP	32,3	0,23	15%	27,4	37,2	22	22	100%							0		
(2) Method with ferrozine/ferene		32,4	2,2	6,8	11	0							11											
(4) Method with TPTZ		31,9	0,49	1,5	11	0							11											
(7) Magnesium	[mmol/L]				27								27	27	100%							0		
Samples and groups																								
Sample A		1,61	0,06	3,9	27		CVP	1,61	0,013	11%	1,43	1,79	27	27	100%							0		
(2) Photometry		1,61	0,06	4,0	26	0							26											
Other					1	0							1											
							1x 4																	
Sample B		0,991	0,03	3,9	27		CVP	0,986	,0083	11%	0,877	1,1	27	27	100%							0		
(2) Photometry		0,993	0,04	4,0	26	0							26											
Other					1	0							1											
							1x 4																	
(8) Lithium	[mmol/L]				6								6	6	100%							0		
Samples and groups																								
Sample A		1,26	0,05	4,1	6		CVP	1,23	0,028	12%	1,08	1,38	6	6	100%							0		
(4) Photometry		1,25	0,04	3,6	5	0							5											
Other					1	0							1											
							1x 3																	
Sample B		1,30	0,05	4,0	6		CVP	1,29	0,025	12%	1,13	1,45	6	6	100%							0		
(4) Photometry		1,27	0,00	0,58	5	0							5											
Other					1	0							1											
							1x 3																	
(9) Total protein	[g/L]				28								0									28	28	100%
Samples and groups																								
Sample A		85,5	1,7	2,0	28								0			CRV	86,11	1,0	9%	78,3	93,9	28	28	100%
(1) Biuret		85,5	1,7	2,0	28	0																28		
Sample B		59,7	1,1	1,9	28								0			CRV	59,44	0,70	9%	54	64,8	28	28	100%
(1) Biuret		59,7	1,1	1,9	28	0																28		

Summary statistics - quantitative results

(Groups: measurement principle)

Filter: Slovakia, minimal size of groups n = 5

EQA round: AKS3/19 - Basic Clinical Chemistry - Serum

Dead line: 26.07.2019

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}
(10) Albumin [g/L]				25								25	25	100%							0		
Samples and groups -																							
Sample A	54,0	1,4	2,5	25		CVP	54,6	0,40	10%	49,1	60,1	25	25	100%							0		
(1) BCG	54,0	1,4	2,5	25	0							25											
Sample B	38,5	1,2	3,1	25		CVP	39	0,30	10%	35,1	42,9	25	25	100%							0		
(1) BCG	38,5	1,2	3,1	25	0							25											
(11) Osmolality [mmol/kg]				12								12	12	100%							0		
Samples and groups -																							
Sample A	300	2,8	0,94	12		CVP	299	1,9	5%	284	314	12	12	100%							0		
(1) Osmometer	300	2,8	0,94	12	0							12											
Sample B	338	3,1	0,93	12		CVP	337	1,5	5%	320	354	12	12	100%							0		
(1) Osmometer	338	3,1	0,93	12	0							12											
(12) Lactate [mmol/L]				16								16	14	88%							0		
Samples and groups -																							
Sample A	2,95	0,17	5,7	16		CVP	2,97	0,043	15%	2,52	3,42	16	14	88%							0		
(3) Photometric enzyme method	2,94	0,10	3,4	10	0							10											
Other				6	0							6											
						3x 1, 3x 2																	
Sample B	3,90	0,19	4,8	16		CVP	3,94	0,049	15%	3,34	4,54	16	15	94%							0		
(3) Photometric enzyme method	3,90	0,12	3,2	10	0							10											
Other				6	0							6											
						3x 1, 3x 2																	
(13) Bilirubin total [µmol/L]				28								0									28	28	100%
Samples and groups -																							
Sample A	33,7	2,1	6,3	28								0			CRV	32	0,80	21%	25,2	38,8	28	28	100%
(2) DCA, DPD	33,8	2,0	6,0	27	0																27		
Other				1	0																1		
															1x 0								
Sample B	33,0	2,0	6,2	28								0			CRV	30,8	1,0	21%	24,3	37,3	28	28	100%
(2) DCA, DPD	33,1	1,9	5,8	27	0																27		
Other				1	0																1		
															1x 0								
(15) Cholesterol [mmol/L]				26								0									26	26	100%
Samples and groups -																							
Sample A	5,17	0,20	3,8	26								0									26	26	100%
(1) Enzyme method CHOD-PAP	5,17	0,20	3,8	26	0										CRV	5,129	0,051	9%	4,66	5,6	26		
Sample B	3,43	0,12	3,6	26								0									26	26	100%
(1) Enzyme method CHOD-PAP	3,43	0,12	3,6	26	0										CRV	3,447	0,034	9%	3,13	3,76	26		
(16) Glucose [mmol/L]				29								0									29	27	93%
Samples and groups -																							
Sample A	5,45	0,14	2,5	29								0			CRV	5,467	0,055	8%	5,02	5,91	29	27	93%
(1) GOD photometry	5,56	0,06	1,2	8	0																8		
(3) Method with hexokinase	5,42	0,12	2,2	20	0																20		
Other				1	0																1		
															1x 2								
Sample B	6,60	0,18	2,8	29								0			CRV	6,53	0,065	8%	6	7,06	29	29	100%

Summary statistics - quantitative results

(Groups: measurement principle)

Filter: Slovakia, minimal size of groups n = 5

EQA round: AKS3/19 - Basic Clinical Chemistry - Serum

Dead line: 26.07.2019

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]				29							0									29	27	93%
Samples and groups																						
Sample B	6,60	0,18	2,8	29							0			CRV	6,53	0,065	8%	6	7,06	29	29	100%
(1) GOD photometry	6,71	0,22	3,2	8	0															8		
(3) Method with hexokinase	6,58	0,17	2,6	20	0															20		
Other				1	0															1		
														1x 2								
(17) Uric acid [µmol/L]				27							0									27	27	100%
Samples and groups																						
Sample A	611	13	2,2	27							0			CRV	612	6,1	12%	538	686	27	27	100%
(2) Enzyme-photomet. m.	611	13	2,2	27	0															27		
Sample B	421	14	3,3	27							0			CRV	415,2	4,2	12%	365	466	27	27	100%
(2) Enzyme-photomet. m.	421	14	3,3	27	0															27		
(18) Urea [mmol/L]				28							0									28	28	100%
Samples and groups																						
Sample A	15,2	0,35	2,3	28							0			CRV	15,3	0,15	15%	13	17,6	28	28	100%
(1) UV enzymatic m.(GMD)	15,2	0,35	2,3	28	0															28		
Sample B	19,3	0,50	2,6	28							0			CRV	19,4	0,19	15%	16,4	22,4	28	28	100%
(1) UV enzymatic m.(GMD)	19,3	0,50	2,6	28	0															28		
(19) Creatinine [µmol/L]				28							0									28	27	96%
Samples and groups																						
Sample A	150	6,2	4,1	28							0			CRV	146,6	1,7	13%	127	166	28	27	96%
(1) Jaffe	154	9,0	5,9	10	0															10		
(3) Enzyme	148	4,6	3,1	18	0															18		
Sample B	165	6,0	3,7	28							0			CRV	164,8	1,6	13%	143	187	28	28	100%
(1) Jaffe	161	5,2	3,3	10	0															10		
(3) Enzyme	167	5,2	3,1	18	0															18		
(20) Triglycerides [mmol/L]				26							0									26	26	100%
Samples and groups																						
Sample A	1,31	0,06	4,6	26							0			CRV	1,318	0,013	15%	1,12	1,52	26	26	100%
(1) Photometric enzyme (GPO-PAP)	1,31	0,06	4,6	26	0															26		
Sample B	1,38	0,06	4,8	26							0			CRV	1,369	0,016	15%	1,16	1,58	26	26	100%
(1) Photometric enzyme (GPO-PAP)	1,38	0,06	4,8	26	0															26		
(21) ALP [µkat/L]				27							0									27	27	100%
Samples and groups																						
Sample A	2,73	0,31	11	27							0			CRV	2,731	0,063	24%	2,07	3,39	27	27	100%
(3) IFCC method	2,73	0,31	11	27	0															27		
Sample B	4,64	0,62	13	27							0			CRV	4,568	0,10	24%	3,47	5,67	27	27	100%
(3) IFCC method	4,64	0,62	13	27	0															27		
(22) alpha-amylase [µkat/L]				28							0									28	28	100%
Samples and groups																						
Sample A	8,24	0,45	5,5	28							0									28	28	100%
(1) IFCC method	8,24	0,45	5,5	28	0									CRV	8,325	0,23	15%	7,07	9,58	28		
Sample B	8,09	0,39	4,9	28							0									28	28	100%

Summary statistics - quantitative results

(Groups: measurement principle)

Filter: Slovakia, minimal size of groups n = 5

EQA round: AKS3/19 - Basic Clinical Chemistry - Serum

Dead line: 26.07.2019

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}
(22) alpha-amylase	[µkat/L]				28							0								28	28	100%
Samples and groups																						
Sample B		8,09	0,39	4,9	28							0								28	28	100%
(1) IFCC method		8,09	0,39	4,9	28	0									CRV	8,213	0,22	15%	6,98	9,45	28	
(23) AST	[µkat/L]				28							0								28	25	89%
Samples and groups																						
Sample A		3,09	0,28	9,0	28							0			CRV	3,287	0,075	15%	2,79	3,79	28	25	89%
(1) IFCC method		3,09	0,28	9,0	28	0															28	
Sample B		5,42	0,37	6,8	28							0			CRV	5,711	0,13	15%	4,85	6,57	28	26	93%
(1) IFCC method		5,42	0,37	6,8	28	0															28	
(24) ALT	[µkat/L]				28							0								28	27	96%
Samples and groups																						
Sample A		1,22	0,06	5,3	28							0			CRV	1,222	0,035	15%	1,03	1,41	28	27	96%
(1) IFCC method		1,22	0,06	5,3	28	0															28	
Sample B		3,04	0,11	3,5	28							0			CRV	3,084	0,078	15%	2,62	3,55	28	28	100%
(1) IFCC method		3,04	0,11	3,5	28	0															28	
(26) CK	[µkat/L]				28							0								28	28	100%
Samples and groups																						
Sample A		3,26	0,20	6,3	28							0			CRV	3,469	0,12	20%	2,77	4,17	28	28	100%
(1) IFCC method		3,26	0,20	6,3	28	0															28	
Sample B		5,11	0,37	7,2	28							0			CRV	5,598	0,17	20%	4,47	6,72	28	28	100%
(1) IFCC method		5,11	0,37	7,2	28	0															28	
(27) gamma-GT	[µkat/L]				27							0								27	27	100%
Samples and groups																						
Sample A		2,09	0,07	3,4	27							0			CRV	2,175	0,055	15%	1,84	2,51	27	27	100%
(1) IFCC method		2,09	0,06	3,1	26	0															26	
Other					1	0															1	
															1x 99							
Sample B		2,47	0,09	3,8	27							0			CRV	2,561	0,065	15%	2,17	2,95	27	27	100%
(1) IFCC method		2,48	0,08	3,6	26	0															26	
Other					1	0															1	
															1x 99							
(28) LD	[µkat/L]				26							0								26	25	96%
Samples and groups																						
Sample A		7,36	0,19	2,6	26							0			CRV	7,378	0,18	18%	6,05	8,71	26	25	96%
(3) IFCC method		7,36	0,19	2,6	26	0															26	
Sample B		2,77	0,13	4,7	26							0			CRV	2,902	0,067	18%	2,37	3,43	26	25	96%
(3) IFCC method		2,77	0,13	4,7	26	0															26	
(29) Lipase	[µkat/L]				17							13	13	100%						0		
Samples and groups																						
Sample A		1,64	0,26	16	17							13	13	100%						0		
(0) Not specified; (58) Beckman Coulter (AU)		1,79	0,07	4,1	7	0	CVPG	1,83	0,036	24%	1,39	2,27	7									
(0) Not specified; (60) Roche		1,45	0,09	6,7	5	0	CVPG	1,62	0,090	24%	1,23	2,01	5									
Other					5	0						1										
							1x 0/12, 1x 0/177, 2x 0/178, 1x 0/179																

Summary statistics - quantitative results

(Groups: measurement principle)

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EQA round: AKS3/19 - Basic Clinical Chemistry - Serum

Dead line: 26.07.2019

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	0,905	0,15	17	17								13	13	100%							0		
(0) Not specified; (58) Beckman Coulter (AU)	1,02	0,03	2,9	7	0	CVPG	1,05	0,026	24%	0,798	1,31	7											
(0) Not specified; (60) Roche	0,785	0,06	8,5	5	0	CVPG	0,858	0,028	24%	0,652	1,07	5											
Other				5	0	1x 0/12, 1x 0/177, 2x 0/178, 1x 0/179						1											
(30) Cholinesterase [µkat/L]				16								16	15	94%							0		
Samples and groups -																							
Sample A	168	6,6	3,9	16								16	15	94%							0		
(1) Standard method	168	6,6	3,9	16	0	CVP	170	2,5	12%	149	191	16											
Sample B	118	3,7	3,1	16								16	15	94%							0		
(1) Standard method	118	3,7	3,1	16	0	CVP	120	1,8	12%	105	135	16											
(31) Albumin (elpho) [-]				9								9	9	100%							0		
Samples and groups -																							
Sample A	0,629	0,08	14	9		CVP	0,637	0,021	15%	0,541	0,733	9	9	100%							0		
(0) Not specified	0,629	0,08	14	9	0							9											
Sample B	0,640	0,06	9,6	9		CVP	0,644	0,016	15%	0,547	0,741	9	9	100%							0		
(0) Not specified	0,640	0,06	9,6	9	0							9											
(32) gamma-globuline (elpho) [-]				9								9	9	100%							0		
Samples and groups -																							
Sample A	0,126	0,02	18	9		CVP	0,126	,0066	30%	0,088	0,164	9	9	100%							0		
(0) Not specified	0,126	0,02	18	9	0							9											
Sample B	0,127	0,01	13	9		CVP	0,124	,0053	30%	0,086	0,162	9	9	100%							0		
(0) Not specified	0,127	0,01	13	9	0							9											
(35) alpha-amylase pancreatic [µkat/L]				16								16	16	100%							0		
Samples and groups -																							
Sample A	7,26	0,26	3,6	16		CVP	7,23	0,094	10%	6,5	7,96	16	16	100%							0		
(1) With IFCC calibration	7,26	0,26	3,6	16	0							16											
Sample B	7,25	0,26	3,6	16		CVP	7,26	0,11	10%	6,53	7,99	16	16	100%							0		
(1) With IFCC calibration	7,25	0,26	3,6	16	0							16											
(36) Calcium ionised [mmol/L]				5								5	5	100%							0		
Samples and groups -																							
Sample A	1,63	0,03	2,1	5		CVP	1,66	0,019	10%	1,49	1,83	5	5	100%							0		
(2) Direct ISE	1,63	0,03	2,1	5	0							5											
Sample B	1,27	0,03	2,3	5		CVP	1,3	0,023	10%	1,17	1,43	5	5	100%							0		
(2) Direct ISE	1,27	0,03	2,3	5	0							5											