

Summary statistics - quantitative results

(Groups: measurement principle)

Filter: minimal size of groups n = 5

EQA round: AM2/18 - Basic Clinical Chemistry - Urine

Dead line: 12.10.2018

RoM = robust average	AV = assigned value	Dmax = acceptable percent difference
SD = standard deviation	CRV = certified reference value	LL = lower limit
CV = coefficient of variation	RV = reference value	UL = upper limit
Ntot = total number of participants	CVE = consensus value from experts	Neva = number of evaluated participants
Nout = number of results excluded before calculation	CVP = consensus value from all participants	Nsuc = number of successful participants
	CVPG = consensus value from participants groups	Srel = success (relative)
	U _{AV} = expanded uncertainty of the assigned value (k = 2)	

Test	[unit]	Comparability										Traceability										
		RoM	SD	CV [%]	N _{tot}	N _{out}	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}
(61) Sodium					257							257	253	98%								0
Samples and groups	[mmol/L]																					
Sample A		205	3,5	1,7	257		CVP	205	0,54	11%	182	228	257	255	99%							0
(2) Indirect ISE		205	3,4	1,7	243	0							243									
(3) Direct ISE		203	5,8	2,8	14	0							14									
Sample B		63,8	1,8	2,8	257		CVP	63,8	0,27	11%	56,7	70,9	257	254	99%							0
(2) Indirect ISE		63,7	1,8	2,8	243	0							243									
(3) Direct ISE		64,3	1,7	2,7	14	0							14									
(62) Potassium					257								257	250	97%							0
Samples and groups	[mmol/L]																					
Sample A		126	4,9	3,9	257		CVP	126	0,74	15%	107	145	257	253	98%							0
(2) Indirect ISE		126	5,0	3,9	243	0							243									
(3) Direct ISE		126	3,7	2,9	14	0							14									
Sample B		31,4	0,93	3,0	257		CVP	31,4	0,14	15%	26,6	36,2	257	253	98%							0
(2) Indirect ISE		31,4	0,93	3,0	243	0							243									
(3) Direct ISE		31,7	0,77	2,4	14	0							14									
(63) Chloride					257								257	251	98%							0
Samples and groups	[mmol/L]																					
Sample A		265	8,4	3,2	257		CVP	265	1,3	14%	227	303	257	253	98%							0
(3) Indirect ISE		265	8,5	3,2	241	0							241									
(4) Direct ISE		262	8,8	3,3	14	0							14									
Other					2	0							2									
							2x 2															
Sample B		85,2	4,4	5,1	257		CVP	85,2	0,67	14%	73,2	97,2	257	253	98%							0
(3) Indirect ISE		85,2	4,3	5,1	241	0							241									
(4) Direct ISE		85,1	6,2	7,3	14	0							14									
Other					2	0							2									
							2x 2															
(64) Calcium					259								259	252	97%							0
Samples and groups	[mmol/L]																					
Sample A		4,42	0,24	5,4	259		CVP	4,42	0,036	18%	3,62	5,22	259	253	98%							0
(2) Phot. with o-cresol.		4,59	0,23	5,0	37	0							37									
(3) Phot. with arsenazo		4,31	0,19	4,3	145	0							145									
(4) Complex Ca-NM-BAPTA		4,59	0,12	2,6	69	0							69									
(6) ISE		3,38	0,18	5,3	6	0							6									
Other					2	0							2									
							2x 1															
Sample B		1,57	0,06	4,1	259		CVP	1,57	,0099	18%	1,28	1,86	259	257	99%							0
(2) Phot. with o-cresol.		1,57	0,06	4,0	37	0							37									
(3) Phot. with arsenazo		1,56	0,07	4,7	145	0							145									

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		RoM	SD	CV [%]	N _{tot}	N _{out}	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}	
(64) Calcium					259							259	252	97%									0
— Samples and groups —	[mmol/L]																						
Sample B		1,57	0,06	4,1	259	CVP	1,57	0,099	18%	1,28	1,86	259	257	99%									0
(4) Complex Ca-NM-BAPTA		1,59	0,04	2,9	69							69											
(6) ISE		1,63	0,08	5,0	6							6											
Other					2							2											
						2x 1																	
(73) Magnesium					218							218	203	93%									0
— Samples and groups —	[mmol/L]																						
Sample A		13,4	0,94	7,0	218	CVP	13,4	0,16	20%	10,7	16,1	218	207	95%									0
(2) Photometry with coloured dyes		13,4	1,0	7,6	181							181											
(4) Enzymatic UV method		13,5	0,53	3,9	34							34											
Other					3							3											
						3x 1																	
Sample B		3,19	0,14	4,3	218	CVP	3,19	0,023	20%	2,55	3,83	218	213	98%									0
(2) Photometry with coloured dyes		3,18	0,14	4,4	181							181											
(4) Enzymatic UV method		3,19	0,13	4,0	34							34											
Other					3							3											
						3x 1																	
(65) Inorganic phosphate					253							253	250	99%									0
— Samples and groups —	[mmol/L]																						
Sample A		27,0	0,98	3,6	253	CVP	27	0,15	18%	22,1	31,9	253	252	100%									0
(1) UV-molybdate method		27,0	0,96	3,6	244							244											
(3) Molybdate-vanadate		27,1	0,77	2,8	5							5											
Other					4							4											
						4x 2																	
Sample B		9,19	0,37	4,1	253	CVP	9,19	0,058	18%	7,53	10,9	253	250	99%									0
(1) UV-molybdate method		9,19	0,37	4,1	244							244											
(3) Molybdate-vanadate		9,18	0,34	3,7	5							5											
Other					4							4											
						4x 2																	
(66) Osmolality					127							127	117	92%									0
— Samples and groups —	[mmol/kg]																						
Sample A		1140	16	1,4	127	CVP	1140	3,4	4%	1090	1190	127	120	94%									0
(1) Osmometer		1140	15	1,3	126							126											
Other					1							1											
						1x 99																	
Sample B		403	5,7	1,4	127	CVP	403	1,2	4%	386	420	127	120	94%									0
(1) Osmometer		404	5,7	1,4	126							126											
Other					1							1											
						1x 99																	
(67) Urea					248							248	243	98%									0
— Samples and groups —	[mmol/L]																						
Sample A		483	22	4,6	248	CVP	483	3,5	17%	400	566	248	244	98%									0
(1) UV enzymatic m.(GMD)		483	22	4,6	242							242											
Other					6							6											
						4x 2, 2x 5																	
Sample B		156	7,5	4,8	248	CVP	156	1,2	17%	129	183	248	245	99%									0

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Test	[unit]	Comparability						Traceability																	
		RoM	SD	CV [%]	N _{tot}	N _{out}	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}			
(67) Urea					248							248	243	98%							0				
— Samples and groups —	[mmol/L]																								
Sample B		156	7,5	4,8	248		CVP	156	1,2	17%	129	183		248	245	99%								0	
(1) UV enzymatic m. (GMD)		156	7,4	4,8	242	0								242											
Other					6	0								6											
							4x 2, 2x 5																		
(68) Creatinine					264									0							264	255	97%		
— Samples and groups —	[mmol/L]																								
Sample A		16,6	0,77	4,6	264									0		RV	16,15	0,67	21%	12,7	19,6		264	257	97%
(2) Jaffé without depro.		16,4	0,69	4,2	130	0																		130	
(3) Enzyme		16,8	0,74	4,4	132	0																		132	
Other					2	0																		2	
																2x 1									
Sample B		7,20	0,35	4,8	264									0		RV	7,04	0,17	21%	5,56	8,52		264	256	97%
(2) Jaffé without depro.		7,14	0,30	4,2	130	0																		130	
(3) Enzyme		7,27	0,37	5,1	132	0																		132	
Other					2	0																		2	
																2x 1									
(69) Uric acid					247									247	244	99%									0
— Samples and groups —	[mmol/L]																								
Sample A		1,30	0,07	5,4	247		CVP	1,3	0,011	23%	1	1,6		247	245	99%									0
(2) Enzyme-photomet. m.		1,30	0,07	5,4	246	1								246											
Other					1	0								1											
							1x 1																		
Sample B		0,730	0,04	6,7	247		CVP	0,73	0,077	23%	0,562	0,898		247	244	99%									0
(2) Enzyme-photomet. m.		0,730	0,04	6,7	246	1								246											
Other					1	0								1											
							1x 1																		
(70) Glucose					242									242	237	98%									0
— Samples and groups —	[mmol/L]																								
Sample A		14,3	0,62	4,3	242		CVP	14,3	0,097	22%	11,1	17,5		242	240	99%									0
(1) GOD photometry		14,3	0,64	4,4	49	0								49											
(2) GOD electrochemical		14,3	0,89	6,2	11	0								11											
(3) Method with hexokinase		14,3	0,61	4,2	182	0								182											
Sample B		2,72	0,11	4,0	242		CVP	2,72	0,017	22%	2,12	3,32		242	237	98%									0
(1) GOD photometry		2,72	0,13	4,6	49	0								49											
(2) GOD electrochemical		2,76	0,24	8,5	11	0								11											
(3) Method with hexokinase		2,72	0,10	3,8	182	0								182											
(71) Total protein					231									218	209	96%									0
— Samples and groups —	[g/L]																								
Sample A		0,251	0,03	12	231									218	215	99%									0
(1) Biuret; (58) Beckman Coulter (Olympus)		0,270	0,01	5,5	7	0	CVPG	0,284	0,043	30%	0,198	0,37		7											
(1) Biuret; (60) Roche		0,225	0,00	3,3	6	0	CVPG	0,23	0,031	30%	0,161	0,299		6											
(2) Pyrogallol red; (12) Beckman Coulter		0,243	0,04	19	7	0	CVPG	0,243	0,034	30%	0,17	0,316		7											
(2) Pyrogallol red; (49) BioVendor		0,245	0,02	9,1	7	0	CVPG	0,245	0,022	30%	0,171	0,319		7											
(2) Pyrogallol red; (58) Beckman Coulter (Olympus)		0,285	0,01	4,6	51	1	CVPG	0,284	0,043	30%	0,198	0,37		51											

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		RoM	SD	CV [%]	N _{tot}	N _{out}	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}			
(71) Total protein	[g/L]				231							218	209	96%									0		
Samples and groups	[g/L]				231																				
Sample A		0,251	0,03	12	231							218	215	99%									0		
(2) Pyrogallol red; (149) Siemens (Dade)		0,141	0,01	11	6	0	CVPG	0,141	0,022	30%	0,098	0,184		6											
(2) Pyrogallol red; (179) Siemens (Bayer)		0,235	0,01	5,4	17	0	CVPG	0,235	,0063	30%	0,164	0,306		17											
(4) Turbidimetry; (1) Abbott		0,260	0,01	5,2	28	0	CVPG	0,258	,0061	30%	0,18	0,336		28											
(4) Turbidimetry; (60) Roche		0,230	0,01	5,0	68	0	CVPG	0,23	,0031	30%	0,161	0,299		68											
(4) Turbidimetry; (77) Skalab		0,265	0,00	2,8	6	0	CVPG	0,267	0,010	30%	0,186	0,348		6											
Other					28	0								15											
														2x 1/1, 1x 1/12, 1x 1/178, 1x 2/1, 3x 2/46, 4x 2/60, 2x 2/75, 4x 2/158, 1x 2/166, 1x 2/178, 1x 3/60, 1x 3/77, 1x 3/179, 3x 4/58, 1x 4/125, 1x 4/179											
Sample B		0,122	0,02	17	231							218	210	96%									0		
(1) Biuret; (58) Beckman Coulter (Olympus)		0,134	0,02	15	7	0	CVPG	0,142	,0035	30%	0,099	0,185		7											
(1) Biuret; (60) Roche		0,109	0,00	1,4	6	0	CVPG	0,109	,0020	30%	0,076	0,142		6											
(2) Pyrogallol red; (12) Beckman Coulter		0,149	0,01	8,9	7	0	CVPG	0,149	0,010	30%	0,104	0,194		7											
(2) Pyrogallol red; (49) BioVendor		0,115	0,00	6,4	7	0	CVPG	0,115	,0072	30%	0,08	0,15		7											
(2) Pyrogallol red; (58) Beckman Coulter (Olympus)		0,143	0,01	7,1	51	1	CVPG	0,142	,0035	30%	0,099	0,185		51											
(2) Pyrogallol red; (149) Siemens (Dade)		0,177	0,02	11	6	0	CVPG	0,177	0,028	30%	0,123	0,231		6											
(2) Pyrogallol red; (179) Siemens (Bayer)		0,105	0,01	12	17	0	CVPG	0,104	,0073	30%	0,072	0,136		17											
(4) Turbidimetry; (1) Abbott		0,118	0,01	13	28	0	CVPG	0,117	,0065	30%	0,081	0,153		28											
(4) Turbidimetry; (60) Roche		0,109	0,00	7,1	68	0	CVPG	0,109	,0020	30%	0,076	0,142		68											
(4) Turbidimetry; (77) Skalab		0,117	0,00	8,2	6	0	CVPG	0,117	,0094	30%	0,081	0,153		6											
Other					28	0								15											
														2x 1/1, 1x 1/12, 1x 1/178, 1x 2/1, 3x 2/46, 4x 2/60, 2x 2/75, 4x 2/158, 1x 2/166, 1x 2/178, 1x 3/60, 1x 3/77, 1x 3/179, 3x 4/58, 1x 4/125, 1x 4/179											
(72) pH	[-]				27							27	22	81%									0		
Samples and groups	[-]				27																				
Sample A		6,16	0,09	1,6	27		CVP	6,16	0,045	5%	5,85	6,47		27	22	81%							0		
(1) Glass electrode		6,16	0,07	1,3	25	0								25											
Other					2	0								2											
														2x 99											
Sample B		6,21	0,11	1,8	27		CVP	6,21	0,054	5%	5,89	6,53		27	25	93%							0		
(1) Glass electrode		6,21	0,09	1,6	25	0								25											
Other					2	0								2											
														2x 99											

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End of report

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