

## Summary statistics - quantitative results

(Groups: measurement principle)

Filter: minimal size of the groups n = 5

## EQA round: AM1/22 - Basic Clinical Chemistry - Urine

Deadline: 08.04.2022

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 the 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 <sub>AV</sub> = expanded uncertainty of the assigned value (k = 2)	

Test	[unit]						Comparability							
		RoM	SD	CV [%]	N <sub>tot</sub>	N <sub>out</sub>	AV	U <sub>AV</sub>	D <sub>max</sub>	LL	UL	N <sub>eva</sub>	N <sub>suc</sub>	S <sub>rel</sub>
<b>(61) Sodium</b>					256							256	254	99%
— Samples and groups	[mmol/L]													
<b>Sample A</b>		80,3	1,9	2,3	256	CVP	80,3	0,29	11%	71,4	89,2	256	255	100%
(2) Indirect ISE		80,4	1,9	2,3	244	0						244		
(3) Direct ISE		79,3	2,4	3,1	12	0						12		
<b>Sample B</b>		176	2,7	1,5	256	CVP	176	0,41	11%	156	196	256	254	99%
(2) Indirect ISE		176	2,6	1,5	244	0						244		
(3) Direct ISE		173	5,4	3,2	12	0						12		
<b>(62) Potassium</b>					256							256	251	98%
— Samples and groups	[mmol/L]													
<b>Sample A</b>		30,5	0,83	2,7	256	CVP	30,5	0,13	15%	25,9	35,1	256	253	99%
(2) Indirect ISE		30,5	0,83	2,7	244	0						244		
(3) Direct ISE		30,3	1,6	5,4	12	0						12		
<b>Sample B</b>		69,7	2,5	3,5	256	CVP	69,7	0,38	15%	59,2	80,2	256	251	98%
(2) Indirect ISE		69,8	2,5	3,5	244	0						244		
(3) Direct ISE		67,9	3,5	5,1	12	0						12		
<b>(63) Chloride</b>					256							256	255	100%
— Samples and groups	[mmol/L]													
<b>Sample A</b>		102	3,8	3,7	256	CVP	102	0,58	14%	87,7	117	256	255	100%
(3) Indirect ISE		102	3,7	3,6	243	0						243		
(4) Direct ISE		102	6,8	6,7	12	0						12		
Other					1	0						1		
						1x 2								
<b>Sample B</b>		202	5,4	2,7	256	CVP	202	0,83	14%	173	231	256	255	100%
(3) Indirect ISE		202	5,4	2,7	243	0						243		
(4) Direct ISE		199	5,3	2,7	12	0						12		
Other					1	0						1		
						1x 2								
<b>(64) Calcium</b>					257							257	255	99%
— Samples and groups	[mmol/L]													
<b>Sample A</b>		1,61	0,073	4,5	257	CVP	1,61	0,011	18%	1,32	1,9	257	256	100%
(2) Phot. with o-cresol.		1,59	0,085	5,4	30	0						30		
(3) Phot. with arsenazo		1,59	0,079	5,0	146	0						146		
(4) Photomet. with NM-BAPTA		1,64	0,043	2,6	77	0						77		
Other					4	0						4		
						2x 6, 2x 99								
<b>Sample B</b>		2,48	0,10	4,2	257	CVP	2,48	0,016	18%	2,03	2,93	257	256	100%
(2) Phot. with o-cresol.		2,50	0,076	3,0	30	0						30		
(3) Phot. with arsenazo		2,46	0,12	5,0	146	0						146		
(4) Photomet. with NM-BAPTA		2,52	0,068	2,7	77	0						77		
Other					4	0						4		
						2x 6, 2x 99								
<b>(73) Magnesium</b>					225							225	223	99%
— Samples and groups	[mmol/L]													
<b>Sample A</b>		1,67	0,073	4,4	225	CVP	1,67	0,012	20%	1,33	2,01	225	223	99%
(2) Photometry with coloured dyes		1,67	0,081	4,8	167	0						167		
(4) Enzymatic UV method		1,66	0,054	3,3	55	0						55		
Other					3	0						3		
						1x 0, 2x 1								
<b>Sample B</b>		3,62	0,14	3,7	225	CVP	3,62	0,022	20%	2,89	4,35	225	224	100%
(2) Photometry with coloured dyes		3,61	0,15	4,0	167	0						167		
(4) Enzymatic UV method		3,62	0,11	3,1	55	0						55		
Other					3	0						3		
						1x 0, 2x 1								
<b>(65) Inorganic phosphate</b>					250							250	248	99%
— Samples and groups	[mmol/L]													
<b>Sample A</b>		8,51	0,39	4,6	250	CVP	8,51	0,060	18%	6,97	10,1	250	248	99%
(1) UV-molybdate method		8,51	0,39	4,6	241	0						241		
(3) Molybdate-vanadate		8,60	0,30	3,4	6	0						6		
Other					3	0						3		
						3x 2								
<b>Sample B</b>		16,2	0,69	4,3	250	CVP	16,2	0,11	18%	13,2	19,2	250	249	100%
(1) UV-molybdate method		16,2	0,71	4,3	241	0						241		
(3) Molybdate-vanadate		16,2	0,16	1,0	6	0						6		
Other					3	0						3		
						3x 2								

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Test	[unit]					Comparability							N <sub>eva</sub>	N <sub>suc</sub>	S <sub>rel</sub>
		RoM	SD	CV [%]	N <sub>tot</sub>	N <sub>out</sub>	AV	U <sub>AV</sub>	D <sub>max</sub>	LL	UL				
<b>(66) Osmolality</b>	[mmol/kg]				126								126	124	98%
Samples and groups															
<b>Sample A</b>		439	3,60,82	126	CVP	439	0,79	4%	421	457	126	124	98%		
(1) Osmometer		439	3,60,82	125	0						125				
Other				1	0						1				
<b>Sample B</b>		812	7,20,89	126	CVP	812	1,6	4%	779	845	126	124	98%		
(1) Osmometer		812	7,10,88	125	0						125				
Other				1	0						1				
					1x 99										
<b>(67) Urea</b>	[mmol/L]				250							250	246	98%	
Samples and groups															
<b>Sample A</b>		146	6,8 4,7	250	CVP	146	1,1	17%	121	171	250	247	99%		
(1) UV enzymatic m.(GMD)		146	6,8 4,7	245	1						245				
Other				5	0						5				
<b>Sample B</b>		254	12 4,7	250	CVP	254	1,8	17%	210	298	250	247	99%		
(1) UV enzymatic m.(GMD)		254	12 4,7	245	1						245				
Other				5	0						5				
					3x 2, 2x 5										
<b>(68) Creatinine</b>	[mmol/L]				268							268	267	100%	
Samples and groups															
<b>Sample A</b>		5,47	0,26 4,7	268	CVP	5,47	0,039	16%	4,59	6,35	268	267	100%		
(1) Jaffe		5,43	0,27 5,0	125	0						125				
(3) Enzyme		5,50	0,24 4,4	142	0						142				
Other				1	0						1				
<b>Sample B</b>		12,9	0,58 4,5	268	CVP	12,9	0,087	16%	10,8	15	268	267	100%		
(1) Jaffe		12,7	0,61 4,8	125	0						125				
(3) Enzyme		13,0	0,53 4,0	142	0						142				
Other				1	0						1				
					1x 0										
<b>(69) Uric acid</b>	[mmol/L]				245							245	241	98%	
Samples and groups															
<b>Sample A</b>		0,855	0,043 5,0	245	CVP	0,855	,0066	23%	0,658	1,06	245	241	98%		
(2) Enzyme-photomet. m.		0,855	0,043 5,0	245	0						245				
<b>Sample B</b>		1,28	0,052 4,1	245	CVP	1,28	,0082	23%	0,985	1,58	245	244	100%		
(2) Enzyme-photomet. m.		1,28	0,052 4,1	245	0						245				
<b>(70) Glucose</b>	[mmol/L]				242							242	239	99%	
Samples and groups															
<b>Sample A</b>		1,61	0,049 3,0	242	CVP	1,61	,0077	22%	1,25	1,97	242	239	99%		
(1) GOD photometry		1,60	0,076 4,8	29	0						29				
(2) GOD electrochemical		1,65	0,074 4,5	9	0						9				
(3) Method with hexokinase		1,60	0,042 2,6	204	0						204				
<b>Sample B</b>		16,4	0,42 2,5	242	CVP	16,4	0,066	22%	12,7	20,1	242	241	100%		
(1) GOD photometry		16,5	0,40 2,4	29	0						29				
(2) GOD electrochemical		16,6	0,150,89	9	0						9				
(3) Method with hexokinase		16,4	0,42 2,5	204	0						204				
<b>(71) Total protein</b>	[g/L]				235							217	214	99%	
Samples and groups															
<b>Sample A</b>		0,209	0,032 15	235							217	214	99%		
(1) Biuret; (1) Abbott		0,218	0,012 5,5	5	0	CVPG	0,219	,0038	30%	0,153 0,285	5				
(1) Biuret; (58) Beckman Coulter (AU)		0,225	0,007 3,3	5	0	CVPG	0,218	,0029	30%	0,152 0,284	5				
(1) Biuret; (60) Roche		0,174	0,008 5,1	9	0	CVPG	0,178	,0030	30%	0,124 0,232	9				
(2) Pyrogallol red; (58) Beckman Coulter (AU)		0,217	0,007 3,2	31	0	CVPG	0,218	,0029	30%	0,152 0,284	31				
(2) Pyrogallol red; (60) Roche		0,180	0,015 8,2	8	0	CVPG	0,178	,0030	30%	0,124 0,232	8				
(2) Pyrogallol red; (162) Siemens (Atellica)		0,261	0,014 5,3	14	0	CVPG	0,259	0,010	30%	0,181 0,337	14				
(2) Pyrogallol red; (179) Siemens		0,261	0,023 8,9	11	0	CVPG	0,262	0,015	30%	0,183 0,341	11				
(4) Turbidimetry; (1) Abbott		0,220	0,012 5,6	51	0	CVPG	0,219	,0038	30%	0,153 0,285	51				
(4) Turbidimetry; (60) Roche		0,178	0,011 6,2	70	0	CVPG	0,178	,0030	30%	0,124 0,232	70				
(4) Turbidimetry; (77) Skalab		0,245	0,022 9,1	6	0	CVPG	0,243	0,025	30%	0,17 0,316	6				
Other				25	0						7				
					1x 1/12, 1x 1/178, 2x 2/1, 3x 2/12, 1x 2/46, 3x 2/49, 3x 2/75, 3x 2/149, 3x 2/158, 1x 3/60, 1x 3/77, 1x 3/179, 1x 4/58, 1x 4/162										
<b>Sample B</b>		0,627	0,091 14	235							217	217	100%		
(1) Biuret; (1) Abbott		0,655	0,007 1,1	5	0	CVPG	0,663	,0070	30%	0,464 0,862	5				
(1) Biuret; (58) Beckman Coulter (AU)		0,675	0,022 3,3	5	0	CVPG	0,673	,0062	30%	0,471 0,875	5				
(1) Biuret; (60) Roche		0,530	0,015 2,8	9	0	CVPG	0,531	,0059	30%	0,371 0,691	9				
(2) Pyrogallol red; (58) Beckman Coulter (AU)		0,672	0,014 2,0	31	0	CVPG	0,673	,0062	30%	0,471 0,875	31				

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Test	[unit]	RoM	SD	CV [%]	N <sub>tot</sub>	N <sub>out</sub>	Comparability							
							AV	U <sub>AV</sub>	D <sub>max</sub>	LL	UL	N <sub>eva</sub>	N <sub>suc</sub>	S <sub>rel</sub>
<b>(71) Total protein</b>					235							217	214	99%
Samples and groups	[g/L]													
<b>Sample B</b>		0,627	0,091	14	235							217	217	100%
(2) Pyrogallol red; (60) Roche		0,534	0,038	7,1	8	0	CVPG	0,531	,0059	30%	0,371	0,691		8
(2) Pyrogallol red; (162) Siemens (Atellica)		0,739	0,02	2,7	14	0	CVPG	0,736	0,015	30%	0,515	0,957		14
(2) Pyrogallol red; (179) Siemens		0,727	0,026	3,6	11	0	CVPG	0,727	0,018	30%	0,508	0,946		11
(4) Turbidimetry; (1) Abbott		0,664	0,024	3,5	51	0	CVPG	0,663	,0070	30%	0,464	0,862		51
(4) Turbidimetry; (60) Roche		0,531	0,023	4,2	70	0	CVPG	0,531	,0059	30%	0,371	0,691		70
(4) Turbidimetry; (77) Skalab		0,701	0,059	8,4	6	0	CVPG	0,699	0,059	30%	0,489	0,909		6
Other					25	0								7
														1x 1/12, 1x 1/178, 2x 2/1, 3x 2/12, 1x 2/46, 3x 2/49, 3x 2/75, 3x 2/149, 3x 2/158, 1x 3/60, 1x 3/77, 1x 3/179, 1x 4/58, 1x 4/162
<b>(72) pH</b>					24							24	23	96%
Samples and groups	[-]													
<b>Sample A</b>		6,07	0,071	1,2	24		CVP	6,07	0,035	5%	5,76	6,38		24
(1) Glass electrode		6,07	0,071	1,2	24	0								24
<b>Sample B</b>		6,17	0,11	1,7	24		CVP	6,17	0,054	5%	5,86	6,48		24
(1) Glass electrode		6,17	0,11	1,7	24	0								24

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End of report

Printed: 13.04.2022