Summary statistics - quantitative results

(Groups: measurement principle)

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EQA round: AM2/22 - Basic Clinical Chemistry - Urine

Deadline: 14.10.2022

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_{AV} = expanded uncertainty of the assigned value (k = 2)	

Test	[unit]	RoM	SD	CV [%]	N_{tot}	N_{out}	Comparability	AV	U_{AV}	D_{max}	LL	UL	N_{eva}	N_{suc}	S_{rel}
(61) Sodium	[mmol/L]				258								258	256	99%
Samples and groups															
Sample A		170	3,0	1,8	258		CVP	170	0,46	11%	151	189	258	257	100%
(2) Indirect ISE		170	3,0	1,8	246	0							246		
(3) Direct ISE		170	3,2	1,9	12	0							12		
Sample B		67,6	1,5	2,3	258		CVP	67,6	0,23	11%	60,1	75,1	258	256	99%
(2) Indirect ISE		67,6	1,5	2,2	246	0							246		
(3) Direct ISE		68,3	1,6	2,4	12	0							12		
(62) Potassium	[mmol/L]				258								258	256	99%
Samples and groups															
Sample A		64,5	2,1	3,2	258		CVP	64,5	0,32	15%	54,8	74,2	258	256	99%
(2) Indirect ISE		64,4	2,1	3,2	246	0							246		
(3) Direct ISE		65,3	2,4	3,7	12	0							12		
Sample B		25,1	0,63	2,5	258		CVP	25,1	0,097	15%	21,3	28,9	258	256	99%
(2) Indirect ISE		25,1	0,64	2,5	246	0							246		
(3) Direct ISE		25,3	0,63	2,5	12	0							12		
(63) Chloride	[mmol/L]				258								258	254	98%
Samples and groups															
Sample A		195	4,5	2,3	258		CVP	195	0,69	14%	167	223	258	257	100%
(3) Indirect ISE		195	4,6	2,3	245	0							245		
(4) Direct ISE		195	4,5	2,3	12	0							12		
Other					1	0	1x 2						1		
Sample B		67,2	3,6	5,3	258		CVP	67,2	0,54	14%	57,7	76,7	258	254	98%
(3) Indirect ISE		67,2	3,6	5,3	245	0							245		
(4) Direct ISE		67,5	3,4	5,1	12	0							12		
Other					1	0	1x 2						1		
(64) Calcium	[mmol/L]				260								260	258	99%
Samples and groups															
Sample A		3,00	0,12	4,1	260		CVP	3	0,019	18%	2,46	3,54	260	258	99%
(2) Phot. with o-cresol.		3,08	0,078	2,5	30	0							30		
(3) Phot. with arsenazo		2,95	0,13	4,4	147	0							147		
(4) Photomet. with NM-BAPTA		3,06	0,079	2,6	80	0							80		
Other					3	0	1x 6, 2x 99						3		
Sample B		1,99	0,094	4,7	260		CVP	1,99	0,014	18%	1,63	2,35	260	259	100%
(2) Phot. with o-cresol.		2,00	0,094	4,7	30	0							30		
(3) Phot. with arsenazo		1,95	0,084	4,3	147	0							147		
(4) Photomet. with NM-BAPTA		2,06	0,062	3,0	80	0							80		
Other					3	0	1x 6, 2x 99						3		
(73) Magnesium	[mmol/L]				227								227	223	98%
Samples and groups															
Sample A		5,02	0,21	4,1	227		CVP	5,02	0,033	20%	4,01	6,03	227	224	99%
(2) Photometry with coloured dyes		5,01	0,21	4,1	169	0							169		
(4) Enzymatic UV method		5,07	0,20	3,9	55	0							55		
Other					3	0	1x 0, 2x 1						3		
Sample B		2,69	0,11	4,2	227		CVP	2,69	0,019	20%	2,15	3,23	227	225	99%
(2) Photometry with coloured dyes		2,69	0,12	4,3	169	1							169		
(4) Enzymatic UV method		2,68	0,10	3,8	55	0							55		
Other					3	0	1x 0, 2x 1						3		
(65) Inorganic phosphate	[mmol/L]				252								252	247	98%
Samples and groups															
Sample A		14,1	0,59	4,2	252		CVP	14,1	0,091	18%	11,5	16,7	252	251	100%
(1) UV-molybdate method		14,1	0,59	4,2	242	0							242		
(3) Molybdate-vanadate		14,2	0,22	1,6	6	0							6		
Other					4	0	1x 0, 3x 2						4		
Sample B		7,07	0,36	5,1	252		CVP	7,07	0,056	18%	5,79	8,35	252	247	98%
(1) UV-molybdate method		7,08	0,37	5,2	242	0							242		
(3) Molybdate-vanadate		7,02	0,12	1,7	6	0							6		
Other					4	0	1x 0, 3x 2						4		

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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}
(66) Osmolality	[mmol/kg]				129								129	124	96%
Samples and groups															
Sample A		798	6,3	0,79	129		CVP	798	1,4	4%	766	830	129	127	98%
(1) Osmometer		799	6,1	0,77	127	0							127		
Other					2	0	1x 0, 1x 99						2		
Sample B		339	3,2	0,94	129		CVP	339	0,69	4%	325	353	129	124	96%
(1) Osmometer		339	3,0	0,90	127	0							127		
Other					2	0	1x 0, 1x 99						2		
(67) Urea	[mmol/L]				251								251	247	98%
Samples and groups															
Sample A		308	13	4,4	251		CVP	308	2,1	17%	255	361	251	247	98%
(1) UV enzymatic m.(GMD)		308	14	4,4	247	0							247		
Other					4	0	3x 2, 1x 5						4		
Sample B		147	6,9	4,7	251		CVP	147	1,1	17%	122	172	251	249	99%
(1) UV enzymatic m.(GMD)		147	7,0	4,7	247	0							247		
Other					4	0	3x 2, 1x 5						4		
(68) Creatinine	[mmol/L]				271								271	270	100%
Samples and groups															
Sample A		12,5	0,52	4,1	271		CVP	12,5	0,077	16%	10,5	14,5	271	270	100%
(1) Jaffe		12,4	0,57	4,6	124	0							124		
(3) Enzyme		12,5	0,47	3,8	146	0							146		
Other					1	0	1x 0						1		
Sample B		5,82	0,25	4,3	271		CVP	5,82	0,037	16%	4,88	6,76	271	270	100%
(1) Jaffe		5,76	0,29	5,0	124	0							124		
(3) Enzyme		5,86	0,23	3,9	146	0							146		
Other					1	0	1x 0						1		
(69) Uric acid	[mmol/L]				250								250	238	95%
Samples and groups															
Sample A		0,696	0,035	5,0	250		CVP	0,696	,0055	23%	0,535	0,857	250	245	98%
(2) Enzyme-photomet. m.		0,696	0,035	5,0	250	1							250		
Sample B		0,314	0,025	7,9	250		CVP	0,314	,0039	23%	0,241	0,387	250	239	96%
(2) Enzyme-photomet. m.		0,314	0,025	7,9	250	2							250		
(70) Glucose	[mmol/L]				243								243	238	98%
Samples and groups															
Sample A		16,4	0,42	2,6	243		CVP	16,4	0,066	22%	12,7	20,1	243	242	100%
(1) GOD photometry		16,2	0,50	3,1	27	0							27		
(2) GOD electrochemical		16,5	0,82	5,0	8	0							8		
(3) Method with hexokinase		16,4	0,40	2,4	208	0							208		
Sample B		1,50	0,055	3,6	243		CVP	1,5	,0086	22%	1,17	1,83	243	238	98%
(1) GOD photometry		1,49	0,099	6,6	27	0							27		
(2) GOD electrochemical		1,53	0,12	7,8	8	0							8		
(3) Method with hexokinase		1,50	0,048	3,2	208	1							208		
(71) Total protein	[g/L]				237								220	213	97%
Samples and groups															
Sample A		0,743	0,16	21	237								220	216	98%
(1) Biuret; (1) Abbott		0,900	0,015	1,6	5	0	CVPG	0,904	0,011	30%	0,632	1,18	5		
(1) Biuret; (58) Beckman Coulter (AU)		0,835	0,037	4,4	5	0	CVPG	0,852	0,012	30%	0,596	1,11	5		
(1) Biuret; (60) Roche		0,619	0,046	7,4	9	0	CVPG	0,6	0,011	30%	0,42	0,78	9		
(2) Pyrogallol red; (58) Beckman Coulter (AU)		0,854	0,029	3,4	32	0	CVPG	0,852	0,012	30%	0,596	1,11	32		
(2) Pyrogallol red; (60) Roche		0,637	0,055	8,6	9	0	CVPG	0,6	0,011	30%	0,42	0,78	9		
(2) Pyrogallol red; (162) Siemens (Atellica)		0,776	0,026	3,3	13	0	CVPG	0,776	0,015	30%	0,543	1,01	13		
(2) Pyrogallol red; (179) Siemens		0,773	0,019	2,5	11	0	CVPG	0,768	0,019	30%	0,537	0,999	11		
(4) Turbidimetry; (1) Abbott		0,905	0,036	4,0	51	0	CVPG	0,904	0,011	30%	0,632	1,18	51		
(4) Turbidimetry; (60) Roche		0,593	0,037	6,3	73	0	CVPG	0,6	0,011	30%	0,42	0,78	73		
(4) Turbidimetry; (77) Skalab		0,685	0,067	9,7	6	0	CVPG	0,685	0,093	30%	0,479	0,891	6		
Other					23	0	1x 1/12, 1x 1/162, 1x 1/178, 2x 2/1, 2x 2/12, 1x 2/46, 2x 2/49, 3x 2/75, 2x 2/149, 3x 2/158, 1x 2/178, 1x 3/12, 1x 3/60, 1x 3/179, 1x 4/162						6		
Sample B		0,206	0,085	41	237								220	215	98%
(1) Biuret; (1) Abbott		0,278	0,005	1,9	5	0	CVPG	0,278	,0047	30%	0,194	0,362	5		
(1) Biuret; (58) Beckman Coulter (AU)		0,281	0,014	5,0	5	0	CVPG	0,285	,0047	30%	0,199	0,371	5		
(1) Biuret; (60) Roche		0,124	0,005	4,2	9	0	CVPG	0,123	,0035	30%	0,086	0,16	9		
(2) Pyrogallol red; (58) Beckman Coulter (AU)		0,285	0,011	3,9	32	0	CVPG	0,285	,0047	30%	0,199	0,371	32		

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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}
(71) Total protein	[g/L]				237								220	213	97%
Samples and groups															
Sample B		0,206	0,085	41	237								220	215	98%
(2) Pyrogallol red; (60) Roche		0,132	0,017	13	9	0	CVPG	0,123	,0035	30%	0,086	0,16	9		
(2) Pyrogallol red; (162) Siemens (Atellica)		0,224	0,026	11	13	0	CVPG	0,22	0,018	30%	0,154	0,286	13		
(2) Pyrogallol red; (179) Siemens		0,237	0,017	7,3	11	0	CVPG	0,236	0,012	30%	0,165	0,307	11		
(4) Turbidimetry; (1) Abbott		0,278	0,016	5,6	51	0	CVPG	0,278	,0047	30%	0,194	0,362	51		
(4) Turbidimetry; (60) Roche		0,122	0,013	11	73	0	CVPG	0,123	,0035	30%	0,086	0,16	73		
(4) Turbidimetry; (77) Skalab		0,145	0,007	5,1	6	0	CVPG	0,145	0,010	30%	0,101	0,189	6		
Other					23	0	1x 1/12, 1x 1/162, 1x 1/178, 2x 2/1, 2x 2/12, 1x 2/46, 2x 2/49, 3x 2/75, 2x 2/149, 3x 2/158, 1x 2/178, 1x 3/12, 1x 3/60, 1x 3/179, 1x 4/162						6		
(72) pH	[-]				23								23	22	96%
Samples and groups															
Sample A		6,71	0,10	1,5	23		CVP	6,71	0,053	5%	6,37	7,05	23	22	96%
(1) Glass electrode		6,71	0,10	1,5	23	0							23		
Sample B		6,70	0,13	2,0	23		CVP	6,7	0,068	5%	6,36	7,04	23	23	100%
(1) Glass electrode		6,70	0,13	2,0	23	0							23		