

Summary statistics - quantitative results

(Groups: manufacturer of instrument)

Filter: minimal size of groups n = 5

EQA round: AM1/18 - Basic Clinical Chemistry - Urine

Dead line: 13.04.2018

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					256							256	254	99%									0
Samples and groups	[mmol/L]																						
Sample A		77,4	1,5	1,9	256	CVP	77,4	0,22	11%	68,8	86	256	255	100%									0
(1) Abbott		76,9	1,2	1,6	38							38											
(12) Beckman Coulter		77,5	1,9	2,5	10							10											
(58) Beckman Coulter (Olympus)		76,9	0,86	1,1	70							70											
(60) Roche		78,5	1,7	2,1	86							86											
(149) Siemens (Dade)		77,0	1,6	2,0	6							6											
(177) MINDRAY		76,2	1,4	1,8	5							5											
(179) Siemens (Bayer)		77,3	1,0	1,3	35							35											
Other					6							6											
							1x 53,3x 166,2x 178																
Sample B		173	2,3	1,4	256	CVP	173	0,36	11%	153	193	256	255	100%									0
(1) Abbott		171	1,8	1,0	38							38											
(12) Beckman Coulter		170	3,1	1,8	10							10											
(58) Beckman Coulter (Olympus)		173	1,4	0,81	70							70											
(60) Roche		174	2,2	1,2	86							86											
(149) Siemens (Dade)		164	3,0	1,8	6							6											
(177) MINDRAY		168	8,1	4,8	5							5											
(179) Siemens (Bayer)		173	1,5	0,88	35							35											
Other					6							6											
							1x 53,3x 166,2x 178																
(62) Potassium					256							256	253	99%									0
Samples and groups	[mmol/L]																						
Sample A		30,6	0,83	2,7	256	CVP	30,6	0,13	15%	26	35,2	256	255	100%									0
(1) Abbott		30,2	0,44	1,5	38							38											
(12) Beckman Coulter		30,2	1,1	3,5	10							10											
(58) Beckman Coulter (Olympus)		31,1	0,88	2,8	70							70											
(60) Roche		30,7	0,74	2,4	86							86											
(149) Siemens (Dade)		29,6	1,1	3,6	6							6											
(177) MINDRAY		31,6	0,24	0,75	5							5											
(179) Siemens (Bayer)		30,3	0,58	1,9	35							35											
Other					6							6											
							1x 53,3x 166,2x 178																
Sample B		69,0	2,2	3,2	256	CVP	69	0,34	15%	58,6	79,4	256	254	99%									0
(1) Abbott		67,8	0,83	1,2	38							38											
(12) Beckman Coulter		67,3	1,7	2,5	10							10											
(58) Beckman Coulter (Olympus)		70,3	1,9	2,7	70							70											
(60) Roche		68,3	2,1	3,1	86							86											
(149) Siemens (Dade)		69,1	6,0	8,7	6							6											
(177) MINDRAY		73,9	4,7	6,3	5							5											
(179) Siemens (Bayer)		69,4	1,4	2,0	35							35											

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Dead line: 13.04.2018

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}
(62) Potassium					256						256	253	99%									0
--- Samples and groups ---	[mmol/L]																					
Sample B		69,0	2,2	3,2	256	CVP	69	0,34	15%	58,6	79,4	256	254	99%								0
Other					6	0						6										
							1x 53, 3x 166, 2x 178															
(63) Chloride					254						254	252	99%									0
--- Samples and groups ---	[mmol/L]																					
Sample A		96,8	3,8	3,9	254	CVP	96,8	0,59	14%	83,2	111	254	253	100%								0
(1) Abbott		98,1	1,4	1,4	38	0						38										
(12) Beckman Coulter		97,7	2,3	2,4	10	0						10										
(58) Beckman Coulter (Olympus)		99,1	1,1	1,1	70	0						70										
(60) Roche		92,0	5,3	5,7	85	0						85										
(149) Siemens (Dade)		100	8,3	8,3	6	0						6										
(177) MINDRAY		96,3	3,8	3,9	5	0						5										
(179) Siemens (Bayer)		98,9	1,9	2,0	35	0						35										
Other					5	0						5										
							1x 53, 2x 166, 2x 178															
Sample B		183	4,0	2,2	254	CVP	183	0,62	14%	157	209	254	253	100%								0
(1) Abbott		182	2,5	1,4	38	0						38										
(12) Beckman Coulter		182	4,3	2,4	10	0						10										
(58) Beckman Coulter (Olympus)		186	1,7	0,94	70	0						70										
(60) Roche		181	5,3	2,9	85	0						85										
(149) Siemens (Dade)		187	4,6	2,5	6	0						6										
(177) MINDRAY		182	1,2	0,65	5	0						5										
(179) Siemens (Bayer)		183	3,3	1,8	35	0						35										
Other					5	0						5										
							1x 53, 2x 166, 2x 178															
(64) Calcium					258						258	256	99%									0
--- Samples and groups ---	[mmol/L]																					
Sample A		1,62	0,06	3,7	258	CVP	1,62	0,092	18%	1,32	1,92	258	256	99%								0
(1) Abbott		1,58	0,06	4,0	39	0						39										
(12) Beckman Coulter		1,62	0,07	4,8	10	0						10										
(58) Beckman Coulter (Olympus)		1,62	0,04	2,5	68	0						68										
(60) Roche		1,64	0,04	2,7	85	0						85										
(149) Siemens (Dade)		1,66	0,08	4,9	6	0						6										
(177) MINDRAY		1,63	0,11	6,8	5	0						5										
(179) Siemens (Bayer)		1,59	0,06	4,1	35	0						35										
Other					10	0						10										
							1x 4, 1x 5, 1x 53, 2x 82, 3x 166, 2x 178															
Sample B		2,39	0,08	3,7	258	CVP	2,39	0,013	18%	1,95	2,83	258	257	100%								0
(1) Abbott		2,31	0,08	3,5	39	0						39										
(12) Beckman Coulter		2,37	0,06	2,9	10	0						10										
(58) Beckman Coulter (Olympus)		2,42	0,06	2,5	68	0						68										
(60) Roche		2,41	0,06	2,6	85	0						85										
(149) Siemens (Dade)		2,45	0,07	3,0	6	0						6										
(177) MINDRAY		2,29	0,03	1,3	5	0						5										
(179) Siemens (Bayer)		2,35	0,08	3,4	35	0						35										
Other					10	0						10										
							1x 4, 1x 5, 1x 53, 2x 82, 3x 166, 2x 178															

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Dead line: 13.04.2018

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}	
(73) Magnesium					218							218	211	97%									0
Samples and groups	[mmol/L]																						
Sample A		1,66	0,08	5,2	218	CVP	1,66	0,014	20%	1,32	2	218	212	97%									0
(1) Abbott		1,66	0,06	3,8	31							31											
(12) Beckman Coulter		1,66	0,11	6,5	10							10											
(58) Beckman Coulter (Olympus)		1,64	0,05	3,5	61							61											
(60) Roche		1,67	0,10	6,2	70							70											
(149) Siemens (Dade)		1,71	0,05	3,5	6							6											
(179) Siemens (Bayer)		1,67	0,08	5,0	30							30											
Other					10							10											
							2x 82, 1x 166, 4x 177, 2x 178, 1x 999																
Sample B		3,75	0,16	4,3	218	CVP	3,75	0,027	20%	3	4,5	218	215	99%									0
(1) Abbott		3,78	0,12	3,1	31							31											
(12) Beckman Coulter		3,70	0,08	2,2	10							10											
(58) Beckman Coulter (Olympus)		3,71	0,14	3,7	61							61											
(60) Roche		3,79	0,16	4,3	70							70											
(149) Siemens (Dade)		3,87	0,09	2,5	6							6											
(179) Siemens (Bayer)		3,73	0,17	4,4	30							30											
Other					10							10											
							2x 82, 1x 166, 4x 177, 2x 178, 1x 999																
(65) Inorganic phosphate					252							252	250	99%									0
Samples and groups	[mmol/L]																						
Sample A		8,42	0,38	4,5	252	CVP	8,42	0,059	18%	6,9	9,94	252	251	100%									0
(1) Abbott		8,23	0,39	4,8	38							38											
(12) Beckman Coulter		8,32	0,56	6,7	10							10											
(58) Beckman Coulter (Olympus)		8,39	0,33	4,0	65							65											
(60) Roche		8,53	0,34	4,0	85							85											
(149) Siemens (Dade)		8,52	0,77	9,0	7							7											
(177) MINDRAY		8,40	0,30	3,5	5							5											
(179) Siemens (Bayer)		8,45	0,43	5,0	35							35											
Other					7							7											
							1x 4, 1x 5, 3x 166, 2x 178																
Sample B		16,8	0,66	3,9	252	CVP	16,8	0,10	18%	13,7	19,9	252	251	100%									0
(1) Abbott		16,4	0,49	3,0	38							38											
(12) Beckman Coulter		16,6	1,2	7,1	10							10											
(58) Beckman Coulter (Olympus)		16,8	0,53	3,1	65							65											
(60) Roche		17,1	0,62	3,6	85							85											
(149) Siemens (Dade)		17,3	1,2	6,9	7							7											
(177) MINDRAY		16,6	0,86	5,2	5							5											
(179) Siemens (Bayer)		17,0	0,64	3,8	35							35											
Other					7							7											
							1x 4, 1x 5, 3x 166, 2x 178																
(66) Osmolality					123							123	118	96%									0
Samples and groups	[mmol/kg]																						
Sample A		433	4,2	0,98	123	CVP	433	0,93	4%	415	451	123	118	96%									0
(119) Advanced Instruments		433	5,4	1,3	35							35											
(150) Arkray		434	3,4	0,79	28							28											
(151) Fiske Associates		432	3,2	0,74	39							39											

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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}	
(66) Osmolality					123						123	118	96%							0			
Samples and groups	[mmol/kg]																						
Sample A		433	4,2	0,98	123	CVP	433	0,93	4%	415	451	123	118	96%						0			
(212) GONOTEC GmbH		432	6,1	1,4	14							14											
Other					7							7											
							1x 0, 1x 29, 1x 93, 3x 114, 1x 999																
Sample B		792	7,8	0,98	123	CVP	792	1,7	4%	760	824	123	121	98%						0			
(119) Advanced Instruments		793	7,5	0,94	35							35											
(150) Arkray		790	4,4	0,55	28							28											
(151) Fiske Associates		795	6,5	0,81	39							39											
(212) GONOTEC GmbH		784	13	1,6	14							14											
Other					7							7											
							1x 0, 1x 29, 1x 93, 3x 114, 1x 999																
(67) Urea					251							251	248	99%						0			
Samples and groups	[mmol/L]																						
Sample A		147	7,1	4,8	251	CVP	147	1,1	17%	122	172	251	249	99%						0			
(1) Abbott		146	6,7	4,6	37							37											
(12) Beckman Coulter		145	9,5	6,5	10							10											
(58) Beckman Coulter (Olympus)		145	5,8	4,0	67							67											
(60) Roche		147	6,7	4,6	85							85											
(149) Siemens (Dade)		152	12	7,8	7							7											
(177) MINDRAY		150	10	6,9	5							5											
(179) Siemens (Bayer)		152	7,6	5,0	35							35											
Other					5							5											
							1x 0, 2x 166, 2x 178																
Sample B		249	11	4,4	251	CVP	249	1,7	17%	206	292	251	248	99%						0			
(1) Abbott		245	11	4,5	37							37											
(12) Beckman Coulter		252	9,2	3,7	10							10											
(58) Beckman Coulter (Olympus)		245	8,9	3,6	67							67											
(60) Roche		250	11	4,2	85							85											
(149) Siemens (Dade)		259	15	5,6	7							7											
(177) MINDRAY		244	1,5	0,61	5							5											
(179) Siemens (Bayer)		256	11	4,4	35							35											
Other					5							5											
							1x 0, 2x 166, 2x 178																
(68) Creatinine					264							0								264	259	98%	
Samples and groups	[mmol/L]																						
Sample A		5,34	0,24	4,5	264							0		RV	5,32	0,100	21%	4,2	6,44	264	261	99%	
(1) Abbott		5,25	0,21	4,0	38																	38	
(12) Beckman Coulter		5,49	0,16	3,0	11																	11	
(58) Beckman Coulter (Olympus)		5,32	0,27	5,1	70																	70	
(60) Roche		5,36	0,21	4,0	90																	90	
(149) Siemens (Dade)		5,05	0,37	7,3	7																	7	
(177) MINDRAY		5,32	0,11	2,1	5																	5	
(179) Siemens (Bayer)		5,38	0,21	3,8	35																	35	
Other					8																	8	
Sample B		12,3	0,56	4,6	264							0		RV	12,16	0,41	21%	9,6	14,8	264	260	98%	
							1x 4, 1x 27, 4x 166, 2x 178																

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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}		
(70) Glucose					243							243	236	97%									0	
Samples and groups	[mmol/L]																							
Sample B		16,3	0,53	3,3	243	CVP	16,3	0,084	22%	12,7	19,9	243	242	100%									0	
(1) Abbott		16,5	0,60	3,7	38							38												
(12) Beckman Coulter		15,9	0,30	1,9	9							9												
(58) Beckman Coulter (Olympus)		16,2	0,56	3,5	67							67												
(60) Roche		16,4	0,43	2,6	65							65												
(149) Siemens (Dade)		16,1	0,24	1,5	6							6												
(177) MINDRAY		16,4	0,41	2,5	5							5												
(179) Siemens (Bayer)		16,3	0,47	2,9	35							35												
(187) EKF-diagnostic		16,0	0,74	4,6	5							5												
Other					13							13												
							1x 4, 1x 6, 1x 18, 2x 49, 1x 124, 3x 166, 2x 178, 1x 188, 1x 199																	
(71) Total protein					232							218	215	99%									0	
Samples and groups	[g/L]																							
Sample A		0,167	0,02	14	232							218	215	99%									0	
(1) Abbott; (1) Abbott		0,178	0,00	4,3	28	0	CVPG	0,178	,0035	30%	0,124	0,232	28											
(12) Beckman Coulter; (12) Beckman Coulter		0,194	0,01	6,7	10	0	CVPG	0,193	,0080	30%	0,135	0,251	10											
(49) BioVendor; (179) Siemens (Bayer)		0,175	0,02	16	5	0	CVPG	0,167	0,039	30%	0,116	0,218	5											
(58) Beckman Coulter (Olympus); (58) Beckman Coulter (Olympus)		0,184	0,00	4,4	59	0	CVPG	0,184	,0025	30%	0,128	0,24	59											
(60) Roche; (60) Roche		0,151	0,00	5,8	79	0	CVPG	0,151	,0025	30%	0,105	0,197	79											
(179) Siemens (Bayer); (179) Siemens (Bayer)		0,135	0,01	10	20	0	CVPG	0,135	,0074	30%	0,094	0,176	20											
Other					31	0						17												
							2x 12/58, 1x 46/1, 2x 46/179, 1x 49/1, 1x 49/166, 1x 60/58, 2x 75/179, 1x 77/58, 3x 77/177, 1x 77/178, 2x 77/179, 1x 125/1, 4x 149/149, 4x 158/1, 1x 158/58, 1x 166/166, 1x																	
Sample B		0,563	0,07	13	232							218	218	100%									0	
(1) Abbott; (1) Abbott		0,589	0,01	2,4	28	0	CVPG	0,589	,0066	30%	0,412	0,766	28											
(12) Beckman Coulter; (12) Beckman Coulter		0,665	0,03	5,0	10	0	CVPG	0,658	0,026	30%	0,46	0,856	10											
(49) BioVendor; (179) Siemens (Bayer)		0,588	0,04	8,2	5	0	CVPG	0,587	0,048	30%	0,41	0,764	5											
(58) Beckman Coulter (Olympus); (58) Beckman Coulter (Olympus)		0,608	0,02	3,5	59	0	CVPG	0,608	,0068	30%	0,425	0,791	59											
(60) Roche; (60) Roche		0,487	0,01	3,3	79	0	CVPG	0,487	,0046	30%	0,34	0,634	79											
(179) Siemens (Bayer); (179) Siemens (Bayer)		0,564	0,01	2,7	20	0	CVPG	0,564	,0083	30%	0,394	0,734	20											
Other					31	0						17												
							2x 12/58, 1x 46/1, 2x 46/179, 1x 49/1, 1x 49/166, 1x 60/58, 2x 75/179, 1x 77/58, 3x 77/177, 1x 77/178, 2x 77/179, 1x 125/1, 4x 149/149, 4x 158/1, 1x 158/58, 1x 166/166, 1x																	
(72) pH					26							26	25	96%									0	
Samples and groups	[-]																							
Sample A		6,26	0,09	1,6	26	CVP	6,26	0,047	5%	5,94	6,58	26	25	96%									0	
(61) Radiometer		6,23	0,09	1,6	6							6												
(999) another manufacturer		6,22	0,05	0,95	9							9												
Other					11							11												
							2x 50, 1x 57, 4x 60, 1x 62, 1x 150, 1x 166, 1x 179																	
Sample B		6,25	0,11	1,8	26	CVP	6,25	0,053	5%	5,93	6,57	26	25	96%									0	
(61) Radiometer		6,26	0,14	2,2	6							6												

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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}						
(72) pH					26						26	25	96%							0								
Samples and groups	[-]																											
Sample B		6,25	0,11	1,8	26	CVP	6,25	0,053	5%	5,93	6,57	26	25	96%						0								
(999) another manufacturer		6,22	0,05	0,95	9							9																
Other					11							11																
							2x 50, 1x 57, 4x 60, 1x 62, 1x 150, 1x 166, 1x 179																					
st_kn_np							End of report																					Printed: 17.04.2018