

EQA round: AM1/24 - Basic Clinical Chemistry - Urine

Deadline: 5.4.2024

Setup: groups - M (measurement principle); Slovakia; minimal size of the groups n = 5

RoM = robust average	AV = assigned value	D _{max} = acceptable difference
SD = standard deviation	CVPG = consensus of the participants' groups	LL = lower limit
CV = coefficient of variation	CVP = consensus of all participants	UL = upper limit
N _{tot} = total number of the results	U _{AV} = expanded uncertainty of the assigned value (k = 2)	N _{eva} = number of the results assessed
N _{out} = number of the results removed before calculation		N _{suc} = number of successful results
		S _{rel} = relative success

Test Sample Group	[unit]	RoM	SD	CV [%]	N _{tot}	N _{out}	Comparability					N _{eva}	N _{suc}	S _{rel} [%]	
							AV	U _{AV}	D _{max}	LL	UL				
(71) Total protein	[g/L]				52							46	46	100	
Sample A		0,582	0,074	13	52							46	46	100	
(2) Pyrogallol red; (58) Beckman Coulter (AU)		0,62	0,016	2,6	13	0	CVPG 0,629	0,008	24%	0,478	0,78	13			
(4) Turbidimetry; (1) Abbott		0,616	0,009	1,4	10	0	CVPG 0,621	0,005	24%	0,471	0,771	10			
(4) Turbidimetry; (60) Roche		0,492	0,014	2,7	13	0	CVPG 0,501	0,005	24%	0,38	0,622	13			
Other					16	0						10			
							2x 1/1, 1x 1/12, 2x 1/58, 1x 1/60, 1x 1/162, 1x 1/178, 1x 2/12, 2x 2/60, 2x 2/75, 1x 2/149, 1x 2/179, 1x 4/77								
Sample B		0,188	0,025	13	52							46	46	100	
(2) Pyrogallol red; (58) Beckman Coulter (AU)		0,2	0,011	5,5	13	0	CVPG 0,203	0,003	24%	0,154	0,252	13			
(4) Turbidimetry; (1) Abbott		0,197	0,006	2,8	10	0	CVPG 0,201	0,003	24%	0,152	0,25	10			
(4) Turbidimetry; (60) Roche		0,16	0,008	4,8	13	0	CVPG 0,164	0,002	24%	0,124	0,204	13			
Other					16	0						10			
							2x 1/1, 1x 1/12, 2x 1/58, 1x 1/60, 1x 1/162, 1x 1/178, 1x 2/12, 2x 2/60, 2x 2/75, 1x 2/149, 1x 2/179, 1x 4/77								
(62) Potassium	[mmol/L]				53							53	53	100	
Sample A		71,1	2,4	3,3	53		CVP	71,4	0,36	15%	60,6	82,2	53	53	100
(2) Indirect ISE		70,9	2,3	3,2	50	0						50			
Other					3	0						3			
							3x 3								
Sample B		30,9	0,92	3	53		CVP	30,9	0,12	15%	26,2	35,6	53	53	100
(2) Indirect ISE		30,8	0,91	2,9	50	0						50			
Other					3	0						3			
							3x 3								
(65) Inorganic phosphate	[mmol/L]				53							53	53	100	
Sample A		16	0,63	3,9	53		CVP	16,1	0,11	18%	13,2	19	53	53	100
(1) UV-molybdate method		15,9	0,59	3,7	50	0						50			
Other					3	0						3			
							2x 2, 1x 3								
Sample B		8,13	0,36	4,4	53		CVP	8,21	0,06	18%	6,73	9,69	53	53	100
(1) UV-molybdate method		8,12	0,35	4,3	50	0						50			
Other					3	0						3			
							2x 2, 1x 3								
(70) Glucose	[mmol/L]				52							52	52	100	
Sample A		16,2	0,36	2,2	52		CVP	16,2	0,057	22%	12,6	19,8	52	52	100
(1) GOD photometry		16,4	0,67	4,1	7	0						7			
(3) Method with hexokinase		16,2	0,32	2	43	0						43			
Other					2	0						2			
							2x 2								
Sample B		1,55	0,054	3,5	52		CVP	1,55	0,009	22%	1,2	1,9	52	52	100
(1) GOD photometry		1,56	0,059	3,8	7	0						7			
(3) Method with hexokinase		1,54	0,05	3,3	43	0						43			
Other					2	0						2			
							2x 2								
(73) Magnesium	[mmol/L]				53							53	52	98	
Sample A		3,64	0,13	3,6	53		CVP	3,6	0,02	20%	2,88	4,32	53	53	100
(2) Photometry with coloured dyes		3,61	0,11	3,1	40	0						40			
(4) Enzymatic UV method		3,75	0,12	3,3	13	0						13			
Sample B		1,71	0,093	5,5	53		CVP	1,7	0,012	20%	1,36	2,04	53	52	98
(2) Photometry with coloured dyes		1,69	0,09	5,3	40	0						40			
(4) Enzymatic UV method		1,75	0,089	5,1	13	0						13			
(63) Chloride	[mmol/L]				53							53	52	98	
Sample A		181	3,4	1,9	53		CVP	180	0,58	14%	154	206	53	53	100
(3) Indirect ISE		181	3,5	1,9	49	0						49			
Other					4	0						4			
							1x 2, 3x 4								
Sample B		79	3,6	4,6	53		CVP	79	0,63	14%	67,9	90,1	53	52	98
(3) Indirect ISE		79	3,7	4,7	49	0						49			
Other					4	0						4			
							1x 2, 3x 4								
(68) Creatinine	[mmol/L]				54							54	54	100	
Sample A		12	0,51	4,2	54		CVP	12,1	0,076	16%	10,1	14,1	54	54	100
(1) Jaffe		12	0,5	4,2	25	0						25			
(3) Enzyme		12,1	0,51	4,2	29	0						29			

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Test Sample Group	[unit]	RoM	SD	CV [%]	N _{tot}	N _{out}	Comparability					N _{eva}	N _{suc}	S _{rel} [%]	
							AV	U _{AV}	D _{max}	LL	UL				
Sample B		5,35	0,24	4,5	54		CVP	5,39	0,034	16%	4,52	6,26	54	54	100
(1) Jaffe		5,34	0,23	4,4	25	0							25		
(3) Enzyme		5,37	0,25	4,6	29	0							29		
(69) Uric acid	[mmol/L]				52								52	51	98
Sample A													52	52	100
(0) Not specified		1,09	0,054	4,9	52	0	CVP	1,09	0,008	23%	0,839	1,35	52		
Sample B													52	51	98
(0) Not specified		0,664	0,04	6,1	52	0	CVP	0,655	0,006	23%	0,504	0,806	52		
(67) Urea	[mmol/L]				53								53	53	100
Sample A		252	10	4,2	53		CVP	252	1,7	17%	209	295	53	53	100
(1) UV enzymatic m.(GMD)		252	10	4	52	0							52		
Other					1	0							1		
							1x 2								
Sample B		154	5,8	3,7	53		CVP	154	1,1	17%	127	181	53	53	100
(1) UV enzymatic m.(GMD)		154	5,6	3,6	52	0							52		
Other					1	0							1		
							1x 2								
(66) Osmolality	[mmol/kg]				22								22	21	95
Sample A													22	21	95
(0) Not specified		802	8,3	1	22	0	CVP	802	1,6	4%	769	835	22		
Sample B													22	21	95
(0) Not specified		420	4,1	0,97	22	0	CVP	421	0,76	4%	404	438	22		
(72) pH	[-]				10								10	10	100
Sample A													10	10	100
(0) Not specified		6,41	0,14	2,2	10	0	CVP	6,35	0,077	5%	6,03	6,67	10		
Sample B													10	10	100
(0) Not specified		6,32	0,17	2,6	10	0	CVP	6,27	0,085	5%	5,95	6,59	10		
(61) Sodium	[mmol/L]				53								53	53	100
Sample A		172	2,4	1,4	53		CVP	172	0,34	11%	153	191	53	53	100
(2) Indirect ISE		171	2,4	1,4	50	0							50		
Other					3	0							3		
							3x 3								
Sample B		80,4	1,6	2	53		CVP	80,8	0,25	11%	71,9	89,7	53	53	100
(2) Indirect ISE		80,3	1,6	2	50	0							50		
Other					3	0							3		
							3x 3								
(64) Calcium	[mmol/L]				53								53	52	98
Sample A		2,62	0,11	4	53		CVP	2,62	0,015	18%	2,14	3,1	53	52	98
(2) Phot. with o-cresol.		2,59	0,071	2,7	10	0							10		
(3) Phot. with arsenazo		2,62	0,13	5,1	32	0							32		
(4) Photomet. with NM-BAPTA		2,62	0,048	1,8	11	0							11		
Sample B		1,81	0,077	4,2	53		CVP	1,82	0,01	18%	1,49	2,15	53	52	98
(2) Phot. with o-cresol.		1,76	0,086	4,9	10	0							10		
(3) Phot. with arsenazo		1,81	0,088	4,8	32	0							32		
(4) Photomet. with NM-BAPTA		1,85	0,038	2,1	11	0							11		