

## EQA round: AM2/23 - Basic Clinical Chemistry - Urine

Deadline: 13.10.2023

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

RoM = robust average	AV = assigned value	D <sub>max</sub> = 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 <sub>tot</sub> = total number of the results	U <sub>AV</sub> = expanded uncertainty of the assigned value (k = 2)	N <sub>eva</sub> = number of the results assessed
N <sub>out</sub> = number of the results removed before calculation		N <sub>suc</sub> = number of successful results
		S <sub>rel</sub> = relative success

Test Sample Group	[unit]	RoM	SD	CV [%]	N <sub>tot</sub>	N <sub>out</sub>	Comparability					N <sub>eva</sub>	N <sub>suc</sub>	S <sub>rel</sub> [%]	
							AV	U <sub>AV</sub>	D <sub>max</sub>	LL	UL				
<b>(71) Total protein</b>	[g/L]				52							45	45	100	
<b>Sample A</b>		0,214	0,079	37	52							45	45	100	
(2) Pyrogallol red; (58) Beckman Coulter (AU)		0,278	0,007	2,6	13	0	CVPG 0,281	0,004	24%	0,213	0,349	13			
(4) Turbidimetry; (1) Abbott		0,244	0,009	3,6	9	0	CVPG 0,245	0,005	24%	0,186	0,304	9			
(4) Turbidimetry; (60) Roche		0,118	0,008	6,5	13	0	CVPG 0,123	0,004	24%	0,093	0,153	13			
Other					17	0						10			
							2x 1/1, 1x 1/12, 2x 1/58, 1x 1/60, 1x 1/162, 1x 1/178, 2x 2/12, 2x 2/60, 2x 2/75, 1x 2/149, 1x 2/179, 1x 4/77								
<b>Sample B</b>		0,743	0,14	19	52							45	45	100	
(2) Pyrogallol red; (58) Beckman Coulter (AU)		0,822	0,019	2,3	13	0	CVPG 0,83	0,01	24%	0,63	1,03	13			
(4) Turbidimetry; (1) Abbott		0,864	0,02	2,3	9	0	CVPG 0,86	0,009	24%	0,653	1,07	9			
(4) Turbidimetry; (60) Roche		0,573	0,03	5,2	13	0	CVPG 0,578	0,007	24%	0,439	0,717	13			
Other					17	0						10			
							2x 1/1, 1x 1/12, 2x 1/58, 1x 1/60, 1x 1/162, 1x 1/178, 2x 2/12, 2x 2/60, 2x 2/75, 1x 2/149, 1x 2/179, 1x 4/77								
<b>(62) Potassium</b>	[mmol/L]				52							52	52	100	
<b>Sample A</b>		25,3	0,72	2,8	52		CVP	25,4	0,089	15%	21,5	29,3	52	52	100
(2) Indirect ISE		25,3	0,73	2,9	49	0						49			
Other					3	0						3			
							3x 3								
<b>Sample B</b>		64,5	2,2	3,4	52		CVP	64,4	0,31	15%	54,7	74,1	52	52	100
(2) Indirect ISE		64,4	2,2	3,4	49	0						49			
Other					3	0						3			
							3x 3								
<b>(65) Inorganic phosphate</b>	[mmol/L]				52							52	50	96	
<b>Sample A</b>		6,96	0,32	4,6	52		CVP	6,96	0,053	18%	5,7	8,22	52	50	96
(1) UV-molybdate method		6,94	0,32	4,7	49	0						49			
Other					3	0						3			
							2x 2, 1x 3								
<b>Sample B</b>		13,9	0,61	4,3	52		CVP	14	0,092	18%	11,4	16,6	52	52	100
(1) UV-molybdate method		13,9	0,61	4,4	49	0						49			
Other					3	0						3			
							2x 2, 1x 3								
<b>(70) Glucose</b>	[mmol/L]				50							50	50	100	
<b>Sample A</b>		1,53	0,045	2,9	50		CVP	1,52	0,009	22%	1,18	1,86	50	50	100
(1) GOD photometry		1,54	0,03	1,9	7	0						7			
(3) Method with hexokinase		1,52	0,038	2,5	41	0						41			
Other					2	0						2			
							2x 2								
<b>Sample B</b>		16,4	0,36	2,2	50		CVP	16,4	0,061	22%	12,7	20,1	50	50	100
(1) GOD photometry		16,8	0,71	4,2	7	0						7			
(3) Method with hexokinase		16,3	0,32	2	41	0						41			
Other					2	0						2			
							2x 2								
<b>(73) Magnesium</b>	[mmol/L]				52							52	51	98	
<b>Sample A</b>		2,61	0,099	3,8	52		CVP	2,6	0,015	20%	2,08	3,12	52	51	98
(2) Photometry with coloured dyes		2,62	0,12	4,7	40	0						40			
(4) Enzymatic UV method		2,61	0,065	2,5	12	0						12			
<b>Sample B</b>		5,09	0,15	2,9	52		CVP	5,04	0,024	20%	4,03	6,05	52	52	100
(2) Photometry with coloured dyes		5,08	0,14	2,8	40	0						40			
(4) Enzymatic UV method		5,14	0,15	2,9	12	0						12			
<b>(63) Chloride</b>	[mmol/L]				52							52	51	98	
<b>Sample A</b>		67,2	2,5	3,8	52		CVP	66,6	0,57	14%	57,2	76	52	51	98
(3) Indirect ISE		67,2	2,5	3,7	48	0						48			
Other					4	0						4			
							1x 2, 3x 4								
<b>Sample B</b>		193	4,1	2,1	52		CVP	192	0,63	14%	165	219	52	52	100
(3) Indirect ISE		193	3,9	2	48	0						48			
Other					4	0						4			
							1x 2, 3x 4								
<b>(68) Creatinine</b>	[mmol/L]				53							53	53	100	
<b>Sample A</b>		5,8	0,28	4,9	53		CVP	5,88	0,042	16%	4,93	6,83	53	53	100
(1) Jaffe		5,72	0,35	6,1	25	0						25			
(3) Enzyme		5,86	0,22	3,8	28	0						28			

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Test Sample Group	[unit]	RoM	SD	CV [%]	N <sub>tot</sub>	N <sub>out</sub>	Comparability					N <sub>eva</sub>	N <sub>suc</sub>	S <sub>rel</sub> [%]	
							AV	U <sub>AV</sub>	D <sub>max</sub>	LL	UL				
<b>Sample B</b>		12,5	0,49	3,9	53		CVP	12,6	0,076	16%	10,5	14,7	53	53	100
(1) Jaffe		12,5	0,58	4,6	25	0							25		
(3) Enzyme		12,5	0,45	3,6	28	0							28		
(69) <b>Uric acid</b>	[mmol/L]				51								51	48	94
<b>Sample A</b>													51	48	94
(0) Not specified		0,331	0,029	8,6	51	0	CVP	0,323	0,004	23%	0,248	0,398	51		
<b>Sample B</b>													51	50	98
(0) Not specified		0,724	0,042	5,8	51	0	CVP	0,717	0,006	23%	0,552	0,882	51		
(67) <b>Urea</b>	[mmol/L]				52								52	52	100
<b>Sample A</b>		135	5,7	4,3	52		CVP	134	1,1	17%	111	157	52	52	100
(1) UV enzymatic m.(GMD)		135	5,8	4,3	51	0							51		
Other					1	0							1		
							1x 2								
<b>Sample B</b>		285	9,6	3,4	52		CVP	283	2	17%	234	332	52	52	100
(1) UV enzymatic m.(GMD)		284	9,5	3,3	51	0							51		
Other					1	0							1		
							1x 2								
(66) <b>Osmolality</b>	[mmol/kg]				22								22	21	95
<b>Sample A</b>													22	21	95
(0) Not specified		327	3,7	1,1	22	0	CVP	327	0,62	4%	313	341	22		
<b>Sample B</b>													22	21	95
(0) Not specified		771	5,1	0,66	22	0	CVP	772	1,3	4%	741	803	22		
(72) <b>pH</b>	[-]				9								9	9	100
<b>Sample A</b>													9	9	100
(0) Not specified		6,56	0,082	1,2	9	0	CVP	6,61	0,061	5%	6,27	6,95	9		
<b>Sample B</b>													9	9	100
(0) Not specified		6,84	0,24	3,5	9	0	CVP	6,75	0,067	5%	6,41	7,09	9		
(61) <b>Sodium</b>	[mmol/L]				52								52	52	100
<b>Sample A</b>		67,1	1,3	1,9	52		CVP	67,4	0,23	11%	59,9	74,9	52	52	100
(2) Indirect ISE		67	1,3	1,9	49	0							49		
Other					3	0							3		
							3x 3								
<b>Sample B</b>		169	2,2	1,3	52		CVP	169	0,39	11%	150	188	52	52	100
(2) Indirect ISE		169	2,2	1,3	49	0							49		
Other					3	0							3		
							3x 3								
(64) <b>Calcium</b>	[mmol/L]				52								52	52	100
<b>Sample A</b>		2,07	0,088	4,3	52		CVP	2,07	0,014	18%	1,69	2,45	52	52	100
(2) Phot. with o-cresol.		2,08	0,084	4	10	0							10		
(3) Phot. with arsenazo		2,04	0,088	4,3	31	0							31		
(4) Photomet. with NM-BAPTA		2,13	0,064	3	11	0							11		
<b>Sample B</b>		3,12	0,12	3,9	52		CVP	3,1	0,02	18%	2,54	3,66	52	52	100
(2) Phot. with o-cresol.		3,19	0,083	2,6	10	0							10		
(3) Phot. with arsenazo		3,09	0,14	4,5	31	0							31		
(4) Photomet. with NM-BAPTA		3,15	0,077	2,4	11	0							11		