

EQA round: ABR2/23 - Acid-base Status and Electrolytes

Deadline: 28.7.2023

Setup: groups - measuring system; minimal size of the groups n = 5

RoM = robust average	AV = assigned value	D _{max} = acceptable difference
SD = standard deviation	CVP = consensus of all participants	LL = lower limit
CV = coefficient of variation	U _{AV} = expanded uncertainty of the assigned value (k = 2)	UL = upper limit
N _{tot} = total number of the results		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				
(135) Potassium cation (ISE)	[mmol/L]				70							70	70	100	
Sample A		4,06	0,058	1,4	70		CVP	4,06	0,017	8%	3,73	4,39	70	70	100
(433) Radiometer ABL (series 700 and 800)		4,1	0,003	0,07	31	0							31		
(449) Roche OMNI S1-6 / cobas b221		3,95	0,03	0,75	5	0							5		
(452) Radiometer ABL 90		4,07	0,051	1,3	19	0							19		
(454) Siemens RapidPoint (series 400, 500)		4,06	0,022	0,55	9	0							9		
Other					6	0							6		
							1x 410, 1x 411, 1x 448, 2x 455, 1x 999								
Sample B		3,27	0,053	1,6	70		CVP	3,27	0,015	8%	3	3,54	70	70	100
(433) Radiometer ABL (series 700 and 800)		3,3	0	0	31	0							31		
(449) Roche OMNI S1-6 / cobas b221		3,09	0,03	0,96	5	0							5		
(452) Radiometer ABL 90		3,27	0,051	1,6	19	0							19		
(454) Siemens RapidPoint (series 400, 500)		3,26	0,015	0,45	9	0							9		
Other					6	0							6		
							1x 410, 1x 411, 1x 448, 2x 455, 1x 999								
(139) Glucose	[mmol/L]				60								60	60	100
Sample A		8,84	0,33	3,7	60		CVP	8,84	0,1	15%	7,51	10,2	60	60	100
(433) Radiometer ABL (series 700 and 800)		8,82	0,46	5,2	28	0							28		
(452) Radiometer ABL 90		8,7	0,1	1,2	18	0							18		
(454) Siemens RapidPoint (series 400, 500)		9,15	0,074	0,81	8	0							8		
Other					6	0							6		
							1x 411, 1x 448, 2x 449, 2x 455								
Sample B		12,2	0,42	3,4	60		CVP	12,2	0,13	15%	10,3	14,1	60	60	100
(433) Radiometer ABL (series 700 and 800)		12,2	0,65	5,3	28	0							28		
(452) Radiometer ABL 90		12	0,18	1,5	18	0							18		
(454) Siemens RapidPoint (series 400, 500)		12,4	0,15	1,2	8	0							8		
Other					6	0							6		
							1x 411, 1x 448, 2x 449, 2x 455								
(136) Chloride anion (ISE)	[mmol/L]				68								68	68	100
Sample A		103	2	1,9	68		CVP	103	0,59	7%	95,7	111	68	68	100
(433) Radiometer ABL (series 700 and 800)		104	1,1	1	30	0							30		
(449) Roche OMNI S1-6 / cobas b221		101	0,074	0,07	5	0							5		
(452) Radiometer ABL 90		101	0	0	19	0							19		
(454) Siemens RapidPoint (series 400, 500)		103	0,74	0,72	9	0							9		
Other					5	0							5		
							1x 410, 1x 411, 1x 448, 2x 999								
Sample B		93,7	1,9	2	68		CVP	93,7	0,56	7%	87,1	101	68	68	100
(433) Radiometer ABL (series 700 and 800)		95	1	1,1	30	0							30		
(449) Roche OMNI S1-6 / cobas b221		92,9	0,15	0,16	5	0							5		
(452) Radiometer ABL 90		91,7	0,59	0,64	19	0							19		
(454) Siemens RapidPoint (series 400, 500)		94	0	0	9	0							9		
Other					5	0							5		
							1x 410, 1x 411, 1x 448, 2x 999								
(169) Lactate	[mmol/L]				61								61	60	98
Sample A		2,81	0,14	5,1	61		CVP	2,81	0,045	18%	2,3	3,32	61	60	98
(433) Radiometer ABL (series 700 and 800)		2,79	0,17	6	30	0							30		
(452) Radiometer ABL 90		2,8	0	0	18	0							18		
(454) Siemens RapidPoint (series 400, 500)		2,85	0,27	9,6	8	0							8		
Other					5	0							5		
							1x 410, 1x 411, 1x 448, 2x 449								
Sample B		4,08	0,17	4,2	61		CVP	4,08	0,054	18%	3,34	4,82	61	60	98
(433) Radiometer ABL (series 700 and 800)		4,03	0,19	4,7	30	0							30		
(452) Radiometer ABL 90		4,15	0,087	2,1	18	0							18		
(454) Siemens RapidPoint (series 400, 500)		4,03	0,13	3,3	8	0							8		
Other					5	0							5		
							1x 410, 1x 411, 1x 448, 2x 449								
(132) pCO₂	[kPa]				92								92	92	100
Sample A		5,32	0,19	3,5	92		CVP	5,32	0,047	12%	4,68	5,96	92	92	100
(433) Radiometer ABL (series 700 and 800)		5,22	0,13	2,5	43	0							43		
(449) Roche OMNI S1-6 / cobas b221		5,57	0,27	4,8	9	0							9		
(452) Radiometer ABL 90		5,38	0,084	1,6	20	0							20		
(454) Siemens RapidPoint (series 400, 500)		5,48	0,18	3,2	9	0							9		
Other					11	0							11		
							1x 405, 1x 410, 2x 411, 1x 414, 2x 448, 1x 451, 3x 455								

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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		6,33	0,22	3,4	92		CVP	6,33	0,055	12%	5,57	7,09	92	92	100
(433) Radiometer ABL (series 700 and 800)		6,26	0,14	2,2	43	0							43		
(449) Roche OMNI S1-6 / cobas b221		6,76	0,22	3,3	9	0							9		
(452) Radiometer ABL 90		6,3	0,13	2,1	20	0							20		
(454) Siemens RapidPoint (series 400, 500)		6,39	0,13	2	9	0							9		
Other					11	0							11		
								1x 405, 1x 410, 2x 411, 1x 414, 2x 448, 1x 451, 3x 455							
(131) pH	[-]				92								92	92	100
Sample A		7,41	0,009	0,12	92		CVP	7,41	0,002	0,8%	7,35	7,47	92	92	100
(433) Radiometer ABL (series 700 and 800)		7,4	0,006	0,08	43	0							43		
(449) Roche OMNI S1-6 / cobas b221		7,41	0,014	0,19	9	0							9		
(452) Radiometer ABL 90		7,41	0,005	0,07	20	0							20		
(454) Siemens RapidPoint (series 400, 500)		7,4	0,004	0,05	9	0							9		
Other					11	0							11		
								1x 405, 1x 410, 2x 411, 1x 414, 2x 448, 1x 451, 3x 455							
Sample B		7,34	0,008	0,11	92		CVP	7,34	0,002	0,8%	7,28	7,4	92	92	100
(433) Radiometer ABL (series 700 and 800)		7,34	0,005	0,07	43	0							43		
(449) Roche OMNI S1-6 / cobas b221		7,34	0,013	0,18	9	0							9		
(452) Radiometer ABL 90		7,34	0,008	0,11	20	0							20		
(454) Siemens RapidPoint (series 400, 500)		7,33	0,002	0,03	9	0							9		
Other					11	0							11		
								1x 405, 1x 410, 2x 411, 1x 414, 2x 448, 1x 451, 3x 455							
(133) pO₂	[kPa]				92								92	89	97
Sample A		17,3	0,98	5,7	92		CVP	17,3	0,25	12%	15,2	19,4	92	91	99
(433) Radiometer ABL (series 700 and 800)		17,3	0,87	5	43	0							43		
(449) Roche OMNI S1-6 / cobas b221		18	1,2	6,5	9	0							9		
(452) Radiometer ABL 90		16,7	0,75	4,5	20	0							20		
(454) Siemens RapidPoint (series 400, 500)		18,4	0,87	4,7	9	0							9		
Other					11	0							11		
								1x 405, 1x 410, 2x 411, 1x 414, 2x 448, 1x 451, 3x 455							
Sample B		15,4	1,1	7	92		CVP	15,4	0,28	17%	12,7	18,1	92	90	98
(433) Radiometer ABL (series 700 and 800)		15,5	0,71	4,6	43	0							43		
(449) Roche OMNI S1-6 / cobas b221		16,9	0,2	1,2	9	0							9		
(452) Radiometer ABL 90		14,5	0,81	5,6	20	0							20		
(454) Siemens RapidPoint (series 400, 500)		15,9	1,1	6,9	9	0							9		
Other					11	0							11		
								1x 405, 1x 410, 2x 411, 1x 414, 2x 448, 1x 451, 3x 455							
(134) Sodium cation (ISE)	[mmol/L]				69								69	68	99
Sample A		143	2,4	1,7	69		CVP	143	0,7	5%	135	151	69	68	99
(433) Radiometer ABL (series 700 and 800)		143	1,3	0,91	30	0							30		
(449) Roche OMNI S1-6 / cobas b221		142	0,82	0,58	5	0							5		
(452) Radiometer ABL 90		146	0	0	19	0							19		
(454) Siemens RapidPoint (series 400, 500)		141	0,52	0,37	9	0							9		
Other					6	0							6		
								1x 410, 1x 411, 1x 448, 2x 455, 1x 999							
Sample B		134	1,9	1,4	69		CVP	134	0,57	5%	127	141	69	68	99
(433) Radiometer ABL (series 700 and 800)		134	1,2	0,91	30	0							30		
(449) Roche OMNI S1-6 / cobas b221		133	0,37	0,28	5	0							5		
(452) Radiometer ABL 90		136	0,54	0,4	19	0							19		
(454) Siemens RapidPoint (series 400, 500)		132	0,59	0,45	9	0							9		
Other					6	0							6		
								1x 410, 1x 411, 1x 448, 2x 455, 1x 999							
(137) Calcium cation (ISE)	[mmol/L]				80								80	80	100
Sample A		0,957	0,029	3,1	80		CVP	0,957	0,008	±0,1	0,857	1,06	80	80	100
(433) Radiometer ABL (series 700 and 800)		0,971	0,015	1,5	37	0							37		
(449) Roche OMNI S1-6 / cobas b221		0,907	0,02	2,2	7	0							7		
(452) Radiometer ABL 90		0,97	0,009	0,96	19	0							19		
(454) Siemens RapidPoint (series 400, 500)		0,92	0,015	1,6	9	0							9		
Other					8	0							8		
								1x 410, 2x 411, 2x 448, 2x 455, 1x 999							
Sample B		1,18	0,028	2,3	80		CVP	1,18	0,008	10%	1,06	1,3	80	80	100
(433) Radiometer ABL (series 700 and 800)		1,19	0,017	1,4	37	0							37		
(449) Roche OMNI S1-6 / cobas b221		1,12	0,023	2	7	0							7		
(452) Radiometer ABL 90		1,18	0,011	0,95	19	0							19		
(454) Siemens RapidPoint (series 400, 500)		1,14	0,015	1,3	9	0							9		
Other					8	0							8		
								1x 410, 2x 411, 2x 448, 2x 455, 1x 999							