Supplemental Data Table S1. Overview of the equipment used to compare electrodes of multiple manufacturers

Analyzer	Company	Electrode type	Measurement principle	Recommended lifetime
Vitros 4600	Orthoclinical Diagnostics	Dry slide chemistry AgCl electrode	Direct potentiometry	Single use
Atellica CH930	Siemens	Polymer membrane electrode using quaternary ammonium salts	Indirect potentiometry	14 days or 5,000 tests
AU5800	Beckman Coulter	Polymer membrane electrode using quaternary ammonium salts	Indirect potentiometry	Change in case of defect
Architect c16000	Abbott	Solid-state AgCl electrode	Indirect potentiometry	90 days, 20,000 tests, or slope <0.45
Cobas c501	Roche Diagnostics	Polymer membrane electrode using quaternary ammonium salts	Indirect potentiometry	2 months or 9,000 tests

Supplemental Data Table S2. Bicarbonate content in QC material/calibrators

Chemical analyzer	QC material	HCO_3^- in QC level 1 (mmol/L)	HCO_3^- in QC level 2 (mmol/L)	HCO_3^- in QC level 3 (mmol/L)	HCO_3^- in Cal 1 (mmol/L)	HCO_3^- in Cal 2 (mmol/L)	HCO_3^- in Cal 3 (mmol/L)	HCO_3^- in Cal 4 (mmol/L)
Vitros 4600	BioRad Multiqual unassayed QCs	15.7	/*	26.9	9.8	35.7	< 5.0	23.3
Atellica CH930	BioRad Multiqual unassayed QCs	15.0	21.0	/	4.0	Not detected	/	/
AU5800	BioRad Multiqual unassayed QCs	15.2	19.4	27.2	21.0	20.7	/	/
Architect c16000	BioRad Multiqual unassayed QCs	15.7	19.8	26.8	Not detected	Not detected	/	/
Cobas c501	Roche PCCC Multi	16.7	29.9	/	Old: 30.0 New: 24.0	Old: 30.8 New: 20.5	/	/

*Not detected; only two standards were used for these assays.
Abbreviation: Cal, calibrator.

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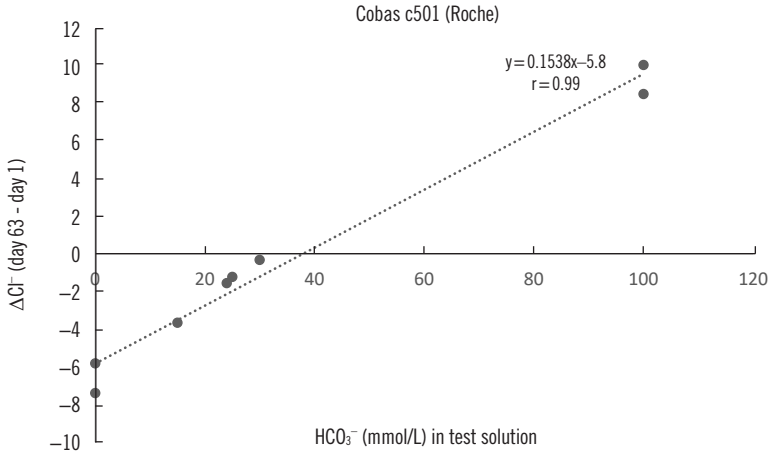

Supplemental Data Fig. S1. Difference in measured chloride (mmol/L) between day 63 and day 1 with the Roche electrodes as a function of the bicarbonate concentration in the tested solutions (Precinorm urine, Precipath urine, PreciControl ClinChem Multi 1 and 2, aqueous solution 1 [100 mmol/L HCO_3^-] and solution 2 [100 mmol/L NaCl+100 mmol/L HCO_3^-]). The equation of ordinary least-squares regression and the Pearson correlation coefficient (r) are given. See Table 1 for the chloride and bicarbonate concentrations of the tested solutions.