



Laboratory Bulletin

Method Change Affecting Multiple Laboratory Tests

- Effective date** August 16, 2023
- Change of service** St Paul's Hospital laboratory is upgrading instruments for routine chemistry and immunoassay testing. For routine chemistries (e.g., electrolytes, liver function tests) the current Siemens ADVIA 1800 instruments are being replaced with Roche Cobas c503 instruments. Immunoassay testing performed on the Roche e601 is being moved to a newer version of the same instrument, the Roche Cobas e801 (minor change).
- Background** This instrumentation requires upgrading approximately every 5 years. Instrumentation was selected to maintain testing services, while improving quality and efficiencies.
- Test-specific changes** Tests significantly affected by the upgrade are listed in Table 1. Tests where the methodology has changed but the reference interval or interpretation has not changed are found in Appendix A.

Table 1. Tests with notable changes to methodology and/or significant changes to their interpretation.

Analyte	Previous method	New method	Summary of key updates with new method
Acetaminophen	Siemens ADVIA 1800	Roche c503	No interference from N-acetyl cysteine
Total bilirubin	Siemens ADVIA 1800, vanadate oxidase	Roche c503, diazo	New methodology consistent with the recent methodology change at CWH
Direct bilirubin	Siemens ADVIA 1800, vanadate oxidase	Roche c503, diazo	Neonatal samples will now be tested at SPH; Consistent with recent methodology change at CWH
Lipoprotein (a)	Siemens ADVIA 1800, Randox kit	Roche c503	Reporting in nmol/L and adopting the 100 nmol/L decision limit from the CCS guidelines
Urine drug screen	Siemens ADVIA 1800, various methods	Roche c503, various methods	Minor change
Unsaturated iron binding capacity	Not measured	Roche c503	Measures available iron binding capacity: ↑UIBC in iron deficiency; ↓UIBC in iron overload
Transferrin	Siemens ADVIA 1800	Discontinued	Discontinued
Fraction saturated IBC	Transferrin saturation	Fraction saturated	Fraction saturated = serum iron ÷ (serum iron + serum UIBC)
Vitamin D	Mass spectrometry	Roche e801	Faster turnaround time; Mass spectrometry remains available for investigation of unusual findings

Question? Please do not hesitate to contact the on call Chemist if you have any questions.

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Appendix A.

Table A-1. Summary of routine chemistry tests whose methodology changes but whose results and interpretation do not change significantly with the change from the Siemens ADVIA 1800 to the Roche c503.

Analytes (Roche c503)
Na*, K, Cl*, TCO2*
Albumin*
Prealbumin*, high sensitivity CRP
ALT*, AST, ALP, LDH*, GGT*
Ca*, PO4*, Mg
Creatinine, urea, eGFR (CKD-EPI 2009)
Glucose, lactate, beta hydroxybutyrate
Cholesterol (total, HDL, non-HDL, LDL), triglycerides
Total protein in serum, urine, CSF*
Uric acid
Iron, ferritin* ⁺
Lipase [#]
Creatine kinase
Ethanol, salicylate
Phenytoin, lithium*, valproic acid, vancomycin, tobramycin

* Minor change in reference interval to reflect efforts to harmonize reference intervals across laboratories

+ Method change from the Roche e601 (immunoassay) to the Roche c503 (immunoturbidimetry)

As a reminder, amylase was previously discontinued at SPH

Table A-2. Summary of immunoassays whose methodology and reporting intervals do not change with the move from the Roche e601 to the Roche e801.

Analytes (Roche e801)	
High sensitivity troponin T, NT-proBNP	TSH, FT4, FT3, ATPO, TSHRA
hCG	Thyroglobulin, thyroglobulin antibody
ACTH, cortisol	PTH
FSH, LH, estradiol, progesterone, DHEAS	Prolactin
GH, IGF-1	PSA
Insulin, C-peptide	Holo-transcobalamin
Calcitonin	IgE
Procalcitonin	Amyloid-beta, phospho-tau, total-tau