

Laboratory Medicine Bulletin

METHOD CHANGE FOR ALBUMIN

Jan 14, 2015

As of Jan 5, 2015, the St. Paul's Hospital laboratory switched from the Siemens® Advia 1800 bromocresol green (BCG) method to the **Siemens Advia 1800 bromocresol purple (BCP)** method. This bulletin is prepared to explain the expected changes in reported albumin levels that will be observed in serially monitored patients since the changeover.

Impetus for change: The Advia BCG method had cross-reactivity with other plasma proteins including those, such as alpha-2-macroglobulin, which form a larger proportion of the total plasma protein level in the setting of the nephrotic syndrome. When compared to albumin measurement by BCP, serum protein electrophoresis, or immunonephelometry the Advia BCG albumin levels had a large positive bias in nephrotic patients. In 2014, Siemens released the new Advia BCP method which has good agreement with those other methods even in patients with severe hypoalbuminemia.

Advia BCP vs Advia BCG: The new Advia BCP method has a negative bias as compared to the previous Advia BCG method. The negative bias is most marked in the hypoalbuminemia range (e.g. a BCG of 25 g/L is equivalent to a BCP 18.6 g/L) and decreases proportionally with higher albumin concentrations (e.g. a BCG of 45 g/L is equivalent to a BCP of 41.8 g/L). On average, the comparison between the two methods is given by the regression equation (1):

$$(1) \text{ Advia BCP} = \text{Advia BCG} * 1.16 + 10.4 \text{ g/L}$$

The Siemens Advia BCP method agrees very well with the Siemens Vista BCP method that is available at Vancouver General Hospital as described in equation (2):

$$(2) \text{ Advia BCP} = \text{Vista BCP} * 1.03 - 0.82 \text{ g/L}$$

Clinical impact:

- a) Serial monitoring of albumin level in an individual patient will show method specific changes as described when comparing with results reported before January 05, 2015.
- b) The reference interval remains unchanged as it is a generic reference interval not specific to the Advia BCG method.
- c) The method for urine albumin measurement and for albumin results reported with serum protein electrophoresis have not changed.

Please do not hesitate to contact me at 604 806 8190 if you have any questions:



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