

Buffered Zinc Acetate Pre-treatment of Hemolyzed Serum Samples for Total Bilirubin Assay

Mizael M. David, Anna Liza U. Fofue,
Yanna Yvonne C. Macayan, Michael
Joshua F. Tiongson

Medical Laboratory Science Department, Adventist University of the Philippines, Cavite, Philippines

Abstract: The research aimed to formulate a way of eliminating interference in total bilirubin assay due to free hemoglobin in hemolyzed serum samples. This normally precipitates hemoglobin but did not result in a clear serum. Nevertheless, the effects of this metal cation precipitation technique in the results of total bilirubin assay were compared to the results of hemolyzed and non-hemolyzed serum controls to test the hypothesis that hemoglobin can be efficiently precipitated by zinc to check for hemolysis without causing another interference. The study utilized 120 μL of 0.12 M buffered zinc acetate to precipitate 0.9 g/dL hemoglobin in 1000- μL hemolyzed serum sample. Three of fifteen sets of samples were randomly considered for testing to determine possible changes before and after pre-treatment. The result has shown that 0.12 M of zinc acetate can precipitate 0.90 g/dL free haemoglobin. However, other suspected moieties of serum constituents or the excess zinc itself causes turbidity even after centrifugation, suggesting technique modification. Therefore, further trials must be reconsidered.

Keywords: Buffered zinc acetate, hemolyzed serum samples, total bilirubin assay