

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

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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 uL of 0.12 M buffered zinc acetate to precipitate 0.9 g/dL hemoglobin in 1000-uL 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