

## Simple Reliable Alternative Methods to Detect Plasma Haemoglobin in Red Cell Concentrates for Calculating Percentage Haemolysis at Peripheral Blood Banks

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Haemolysis is the major limiting factor in the lifespan of Red Cell Concentrate (RCC). It must be visually checked prior to transfusion. As a quality monitoring requirement, 1% of the monthly production of RCC must be tested for percentage haemolysis. According to international quality standards, the percentage haemolysis of RCC must be less than 0.8%. The plasma haemoglobin (Hb) required for calculating percentage haemolysis is presently measured using a Plasma / Low Hb photometer (LHBP), which is available only at the National Blood Centre (NBC). To address this issue, we introduced two alternative methods compared with the gold standard (LHBP) to help peripheral blood banks (PBB) determine plasma Hb concentration. These methods are the Visual Haemoglobin Colour Scale (CS) and the Standard-hemolysate Capillary Tube Comparison (SCTC) method. To prepare these alternative methods, a standard-hemolysate was prepared using an unexpired RCC of mean Hb concentration. A concentration series having plasma Hb values from 0.1g/dl to 1.0g/dl was prepared from the hemolysate. These methods were tested on RCCs which were received by NBC for haemolysis determination. A strong correlation was observed between LHBP method and the alternative methods. According to the statistics, both alternative methods give statistically comparable results to the LHBP method.

**Keywords:** *capillary tube comparison, hemoglobin colour scale, percentage haemolysis*