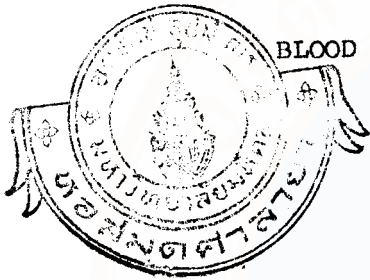


AGGLUTININS AND HEMOLYSINS A AND B  
IN BLOOD DONORS  
AND  
EVALUATION OF TECHNIQUES  
IN



BLOOD GROUP ANTIBODY DETECTION

BY

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#### Abstract

##### I. AGGLUTININS AND HEMOLYSINS A AND B IN BLOOD DONORS.

The titration study of agglutinins and hemolysins A and B levels was performed in 50 blood group A, 50 blood group B and 200 blood group O donors at Blood Bank, Ramathibodi Hospital, by using the standard techniques of the American Association of Blood Banks. It was found that agglutinin levels were significantly higher than their corresponding hemolysin levels in all ABO groups. Agglutinin and hemolysin levels were higher in group O donors than in group A and B donors. In addition, a moderate correlation between hemolysin and agglutinin levels was found in all ABO groups. The incidences of low agglutinin titers ( $\leq 1:32$ ) for both A and B, A only, and B only were 61%, 68%, and 72.5% in group O blood, respectively.

Hemolysins, either A or B or A,B, were found in all 300 donors.

However, the incidence of hemolysin A and B in group O donors were 99.5% and 99%, respectively.



## II. EVALUATION OF TECHNIQUES IN BLOOD GROUP ANTIBODY DETECTION

Saline, albumin, proteolytic enzymes (bromelin, ficin, papain and trypsin) and low ionic strength salt solution (LISS) techniques were evaluated for their effectiveness in detecting 15 Lewis antibodies. It was found that papain - antiglobulin technique was not only the most sensitive technique but also gave highly false positive reaction at antiglobulin test (AGT) phase. Trypsin - AGT technique, the second most sensitive technique, was, therefore, used for the study of the effect of storage on the strength of Lewis antigens and on the activity of Lewis antibodies. The results revealed that Lewis positive red cells could be stored in phosphate buffer saline pH 7.0 at 2-4°C for 1 day or stored frozen at -20°C for 3 months. In addition, sera containing Lewis antibodies could be stored at 2-4°C for 4 days or stored frozen at -2°C for 1 month.

The combination of papain technique at 37°C phase and LISS technique at RT-37°C - AGT phase was found to be the best method in detecting other 31 irregular antibodies. In addition, LISS technique was found to be more effective than saline-AGT and albumin-AGT techniques because of its specificity, sensitivity, cost effective and less time consuming. Besides antibody screening and identification, these advantages promote LISS technique to be a useful technique for application in crossmatching procedure in routine blood transfusion service as well.

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