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ENZYME LINKED ANTIGLOBULIN TEST : AN ACCURATE AND SIMPLE METHOD TO
DETECT RED BLOOD CELL ANTIBODIES IN IMMUNE HEMOLYTIC ANEMIA

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A THESIS SUBMITTED IN PARTIAL FULFILLMENT OF
THE REQUIREMENTS FOR THE DEGREE OF
MASTER OF SCIENCE
(CLINICAL PATHOLOGY)

IN THE
FACULTY OF GRADUATE STUDIES
OF
MAHIDOL UNIVERSITY
1987

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ABSTRACT

An enzyme linked antiglobulin test was used to quantitate the amount of IgG on red cell. The washed red cells were incubated with alkaline phosphatase conjugated antiglobulin, washed, and substrate was then added. The reaction product was indicated by a colour change, which was linearly proportional to the concentration of antibody on the red cells. The assay was easy to perform and showed a good precision. The coefficient variation within assay were 5.67%, 6.98%, 7.75% and the between assay was 9.48%. This assay could detect as sensitive as 3.9375ng/ml of anti-D (IgG), corresponding to 16 IgG/rbc. Using this assay, the amount of IgG per red cell for normal subjects was 16 ± 14 molecules ($\bar{X} \pm 2SD$, n=25). The cut-off value for abnormal (positive) result of ELAT was exceeded 30 IgG/rbc. In this study, the red cells from patients with immune hemolytic anemia, including ABO-incompatible newborns, malarial patients, thalassemic patients and patients in suspected cases of AIHA were quantitative for IgG on red cells. Positive results for the detection of IgG on red cells were obtained by using ELAT in 46 cases while the DAT gave negative results. Therefore, this study proved that the ELAT is superior to DAT for determination of IgG on red cell in immune hemolytic patients.