Thesis Title : The quantitation of platelet-associated IgG (PAIgG), platelet-associated IgM (PAIgM), platelet-bindable IgG (PBIgG) and platelet-bindable IgM (PBIgM) by enzyme linked antiglobulin consumption test (ELACT)

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## ABSTRACT

The enzyme linked antiglobulin consumption test (ELACT) was developed to quantitate the values of platelet-associated IgG (PAIgG), platelet-associated IgM (PAIgM), platelet-bindable IgG (PBIgG) and platelet-bindable IgM (PBIgM) in normal subjects and various diseases. The principles of ELACT were as follows. The immunoglobulin in solubilized platelet was allowed to bind to enzyme conjugate antiglobulin. The remaining conjugate was then adsorbed onto the immunoglobulin coated polystylene plate and quantitated by enzyme substrate color reaction. The absorbance of color was converted to the value of immunoglobulin on platelet by using standard curve, which was performed in the same run with standard known concentration of immunoglobulin. This method

showed good reproducibility and high sensitivity. The within run coefficient of variation percent (% CV) were within 10 %, and between run were within 20 %. The within run percent of expectation (% Ex) were within the range of 95-105 %, and between run % Ex were within the range of 90-110 %. The sensitivity of this method was 0.25 fg/plt, for both IgG and IgM. The platelet-associated immunoglobulin (PAIg) was the platelet-antibody, which reacted with platelet in vivo (platelet direct antiglobulin test); while the platelet-bindable immunoglobulin (PBIg) was the platelet-antibody in plasma, which could react with platelet in vitro (platelet indirect antiglobulin test). The normal values of PAIgG, PBIgG, PAIgM and PBIgM were 5.1±2.6, 5.3±2.3, 1.2±1.0 and 3.1±1.8 fg/plt, respectively. These four platelet-antibodies in patients with idiopathic thrombocytopenic purpura, systemic lupus erythematosus, autoimmune hemolytic anemia, lymphoproliferative disorders, multiple transfusion and other diseases were quantitated. Their values were useful in understanding the pathophysiologic process and following activity of the diseases.