VI. SUMMARY

The sugar-chain heterogeneity of the alkaline phosphatase (ALP) isoenzymes partially purified from sera of patients with differential diagnosis of liver disease were investigated. A clearly pattern of Con A precipitated with liver or fast liver ALP isoenzyme demonstrated a difference between the patient and normal control group by using selective lectin precipitating technique. Widespread variations were observed within the patient samples for WGA precipitated with liver ALP or fast liver ALP isoenzymes. PSA slightly showed effect on precipitating of ALP isoenzymes except for liver ALP from hepatoma patient. The heterogeneity of ALP with respect to sialic acid linkage was studied by desialylation of the ALP using neuraminidase digestion following by sialylation with α 2,6- sialyltransferase (α 2,6-ST).The identification of sialo-ALP isoenzyme pattern was performed by an agarose gel electrophoresis. Desialylation by different sources of neuraminidase treatment showed some specificity differences of liver ALP isoenzyme substrate (for hepatitis, bile duct obstruction and hepatoma samples).The absence of α 2,6- ST sialylation with the asialo-forms of liver ALP isoenzymes from hepatitis and bile duct obstruction samples suggested that they occupied some different sialic acid linkages as compared with other ALP isoenzyme molecules. The heterogeneity of sugar chain characteristics of ALP isoenzymes in sera of patients with liver disease, demonstrated in this studies, provided useful information for the quantitative separation of ALP isoenzymes in serum which could be identified by lectin precipitation and cellulose acetate electrophoretic techniques.