uptake of radioisotope, spleen involvement was positive. 13 patients with focal filling defect on scintigraphy were always associated with liver infiltration of malignant lymphoma. In general, both right and left lobe enlargement and non-homogenous uptake of radioactivity in the liver are the most common sign of liver disease. However those findings may indicate possibility of liver infiltration in patients with malignant lymphoma. Increased spleen uptake of radioisotope may also indicate spleen involvement.

Binding of ^{131}I BSP-Albumin with Hepatic Plasma Membrane

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There are many unknown mechanisms which involve the selective uptake of bilirubin and organic anions such as BSP from blood to hepatic cell. Plasma membrane was isolated from rat liver by differential centrifugation and the ability of plasma membrane to bind BSP was investigated in vitro which contained serum protein.

Materials and Methods

Plasma membrane was isolated from rat liver according to the method of Ray, but the final sucrose gradient of ultracentrifugation for selecting plasma membrane was between 69% (d=1.22) and 37% (d=1.16) according to the method of Neville. The final membrane preparations were free from nuclei, mitchondria and microsome when examined by the electron microscopy and emzymes. BSP binding by plasma membrane in vitro containing serum protein was investigated in an aliquot of solution containing 10 mM $CaCl_2$ in 0.05 M Tris-HCl buffer at pH 7.5. The mixture was incubated at room temperature for 30 minutes and centrifuged at 3000 rpm for 30 minutes. The supernatant was discarded and the radioactivity of the pellets was determined using scintillation counter.

Results

1) 0.2 ug BSP was almost completely bound per mg of membrane protein. Competitive inhibition was observed in 131-I BSP, cold BSP and ICG for binding by hepatic plasma membrane in vitro.

2) Addition of serum protein to incubation medium inhibited the binding of 131-I BSP for plasma membrane. The non-specific binding which was not displaced by serum albumin represented approximately 10% of total 131-I BSP which was bound to the liver plasma membrane.

3) The binding activity of 131-I BSP was decreased at pH higher than 7.5. The binding activity of 131-I BSP was not influenced after preincubation of aliquots of plasma membrane at 40°C for 5 hours. The binding activity of 131-I BSP for plasma membrane was imvestigated at room temperature for different periods of incubation. Equilibrium is reached at instance and was stable for least 5 hours.

4) The plasma membrane isolated from kidney demonstrated similiar binding activity of 35-S BSP to that of liver plasma membrane.

Summary. In our experiments, about 70% of 131-I BSP bound to the isolated plasma membrane under the simultaneous existence of the same amount of serum protein and plasma membrane. These findings indicated that the plasma membrane play a important role of hepatic uptake of organic anions.