In two hepatoma patients whose α-fetoprotein showed no increase, positive tumor scintigrams were observed that liver tumor scan with 75-Se-
selenomethionine is clinically valuable as a method for the differentiation of hepatoma from other liver tumor.

**Study on The Rise and Fall of Serum concentration of Au antigen, antibody, and α-fetoprotein in cases of Hepatitis, Cirrhosis of The Liver, and Hepatocellular Carcinoma**

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Australia antigen in serum (Au-Ag) was detected at high frequency more than 65% in patients with chronic hepatitis active form, in particular, in cases of chronic hepatitis with submassive hepatic necrosis. Au-antibody were detected in high percentage in cases of fluminant hepatitis, subacute hepatitis, and chronic hepatitis active form.

The positive rate of Au-antibody was relative high frequency in the cases which Au-Ag was always negative in clinical course. In most cases of chronic hepatitis with SHN, who the existence of Au-Ag and Au-Ab was shown, prognosis of those patients with Au antigenemia was poor.

Serious determination of serum transaminase, Au-Ag, Au-Ab and serum α-fetoprotein were undertaken to elucidate the mutual relationship that levels of those values changed reciprocally in clinical course. Subjectes were comprised 3 cases of chronic hepatitis, 5 cases of cirrhosis of the liver A’ and 2 cases of hepatocellular carcinoma.

In 5 cases of chronic hepatitis with SHN, when levels of serum Au-Ag were modelately increased in clinical course, The Dane particle of Au-Ag apeared in sera of the patients. At that time levels of serum concentration of Au-Ab were increased promptly, with tranently eleva-
tion in Serum GPT. After few weeks, values of SGPT were temporarily elevated in accompany with beeig decreased the value of Au-Ag. Half month later, serum α-fetoprotein concentration increased at the time when levels of SGPT decreased, and the small particle of Au-Ag reappeared in serum.

After temporal fall of the levels of Au-Ag, levels of Au-Ag increased up to 100 μg/ml, in 3 of 5 cases of chronic hepatitis, prognosis of those cases were bad. In 2 of 5 patients of chronic hepatitis in whom serum Au-Ag decreased promptly before and after recrudescence of chronic hepatitis, levels of serum Au-Ab become to positive by immunolectrophoresis method, but at the time serum Au-Ag was negative by RIA. Prognosis of such a case was good.

In this results, the Dane particle (42 nm. in diameter) of Au-Ag made hepatocellular necrosis, thereafter regeneration of the liver came in accompanied with production of α-fetoprotein.

Levels of serum Au-Ag in a patient of hepatocellular carcinoma with cirrhosis of the liver was decreased from 1500 ng/ml to 500 ng/ml in progress of clinical course, on the other had, levels of serum α-fetoprotein concentration were increased from 1250 ng/ml to 130 μg/ml.

In 29 cases of hepatocellular carcinoma, cor-
relation between serum Au-Ag and serum α-fetoprotein concentration on logarithmic paper seems to be negative correlation. In cases of 18 ou of 27 cases of hepatocellular carcinoma Au-

Ag were detected, and in 13 of 18 cases liver cirrhosis was combined. Au antigenemia was shown in 3 cases of hepatocellular carcinoma without cirrhosis of the liver.

Change of α-fetoprotein Concentration in Serum of Patients with Various Types of Liver Disease

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The concentration of α-fetoprotein in serum of patients with various types of liver disease was examined by the method of radioimmunoassay. The concentration of this protein in serum of normal adults was below 10 mg/ml.

In 17 of 19 patients with hepatoma, the concentration of this protein markedly elevated and in 15 of them it reached 9500 to 342000 mg/ml, but in only two of them the concentration of this protein was below 10 mg/ml.

In about 45 per cent of patients with liver cirrhosis or chronic hepatitis, elevation of the concentration of α-fetoprotein in serum was observed. In about 50 per cent of acute hepatitis, the concentration of this protein elevated at the 1st to 4th week.

In all of three patients with subacute hepatitis, the concentration of this protein elevated and reached 240 to 1360 mg/ml.

In many cases of acute hepatitis which the concentration of this protein in serum markedly elevated, the clinical courses were prolonged.

The Relationship with Australia Antigen and α-Fetoprotein in Diffuse Liver Diseases

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We investigated the relationship with Australia antigen (Au-Ag) and α-fetoprotein (AFP) in 350 cases of diffuse liver diseases, including 20 cases of acute hepatitis, 221 cases of chronic hepatitis and 99 cases of liver cirrhosis.

Au-Ag was measured by solid phase radioimmunoassay (Austria125-Kit) produced by Dainabott laboratories.

AFP was measured by two antibodies method (α-Feto-125-Kit) produced by Dainabott laboratories, and the values above 20 ng/ml were evaluated as positive.

A summary of results was shown below.

1) Among 350 cases with diffuse liver diseases, 242 did not have the Au-ag and 98 had the Au-ag.

In the groups of Au-ag-positive, 39 cases (40%) were AFP-positive, whereas in the