

Immunohistochemical Study of Iodinated-Proteins in Human Thyroid Gland

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The nature of iodinated albumin-like protein which has been extracted from the thyroid gland is unknown.

The thyroid albumin which is distinct from thyroglobulin, is different from the serum albumin in basic amino-acid composition and pI range (T-albumin pI: 4.70-5.21, S-albumin pI: 4.85-6.16). And it seems that the thyroid albumin combines with the thyroid hormone which is liberated from thyroglobulin or is iodine oxidated in the follicular epithelial cells.

In our study, it is possible to say that the thyroid albumin is the tissue specific protein which transports the thyroid hormone to the serum in the follicular epithelial cells.

Immunohistochemical Study on Gamma-glutamyl Transpeptidase during Fetal Development and Azo-dye Hepatocarcinogenesis.

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Immunolocalization of Gamma-glutamyl transpeptidase (γ -GTP) was investigated in rats during fetal and post-natal life in comparison with the stages of 3'-Me-DAB hepatocarcinogenesis.

As a result, γ -GTP could be detected in the bile canaliculi of fetal and newborn rats, and in intercellular spaces of some hyperplastic nodules and hepatoma tissues in the rat fed with 3'-Me-DAB. The localization of γ -GTP was mostly coincident with that of enzymatic activity, however, there were a few lesions where only the immunolocalization of γ -GTP was detected but not its enzymatic activity. On the other hand, γ -GTP was scarcely detected in the AFP positive cells not only in the hepatoma nodules but also in the fetal liver on the early hepatocarcinogenesis stage.

Finally, the immunohistochemical investigation for γ -GTP is of great value to analyze the preneoplastic lesion and hepatoma as well as fetal tissues.

Intrahepatic Distribution of Lymphocyte Subsets in Chronic Hepatitis

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Intrahepatic distribution of lymphocyte subsets was studied in 37 cases with type B and in 17 cases with non-A, non-B chronic hepatitis by peroxidase-labeled antibody method using mouse monoclonal antibodies (Leu-1, Leu-2a, Leu-3a, Leu-7 and Leu-10), and also both HBs Ag and HBcAg in the liver tissue were observed. Membranous expression of HBs Ag was found in 28 out of 37 cases with type B chronic hepatitis. In these cases, Leu-2a positive cells (T cytotoxic/suppressor cells) were particularly distributed in sites of piecemeal necrosis and focal necrosis, and they were often interacted with liver cells by immunoelectron microscopy. On the other hand, a few Leu-7 positive cells (NK/K cells) were scattered in the liver, and electron microscopically, they were observed in the sinusoids without contact to the liver cells. These findings were also found in non-A, non-B chronic hepatitis. It is suggested that T cell cytotoxicity may play an important role in the pathogenesis of liver cell necrosis in type B and non-A, non-B chronic hepatitis.

Detection of Desmin in Fat-storing Cells (Ito Cells) by Immunocytochemical Methods

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We obtained anti-desmin antibody from serum of rabbits immunized with desmin extracted from chicken gizzard. This antibody reacted with Z-line of rat skeletal myofibrils using immunoblotting method. Normal liver of rats were stained by anti-desmin antibody using indirect immunoperoxidase methods. Stained cells by this antibody were diffusely distributed in hepatic lobules, showed stellate shapes, had elongated cytoplasmic extension, and contained a few fat droplets. After excessive administration of vitamin A fat droplets increased in size and amount which were assured as vitamin A by ultraviolet exposure and gold impregnation. These cells did not phagocytize particles after an injection of colloidal carbon solution. From these results stained cells by anti-desmin antibody were assured of being fat-storing cells. We defined the presence of desmin in fat-storing cells and the existence of desmin in fat-storing cells have not yet demonstrated previously. A study goes on to observe a relation of fat-storing cells and myofibroblasts.