41. Immunohistochemistry of neutral α-glucosidase of rat liver

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Histochemical methods using some chromogenic substrates have demonstrated the localization of neutral α-glucosidase(NAG) in kidney and small intestine but could not succeeded in liver. We would like to report immunohistochemistry and biochemical properties of the liver enzyme.

NAG was purified by butanol extraction, ion exchange chromatography and gel filtration. The optimum pH was 6.0 and the molecular weight was about 120.000 with SDS polyacrylamide disc gel electropholesis. Activity staining of electrophoresed enzyme showed 3 bands of fluorescence with 4-methylumbelliferyl α-glucoside as substrate.

Immunohistochemistry was performed with horseradish peroxidase labeled anti-NAG Fab' obtained by digestion of IgG purified from the antiserum of immunized rabbit. In whole hepatocytes, NAG was found almost equally within the lobule and localized diffusely and granularly in the cytoplasm. Electronmicroscopy showed that NAG distributed on the membranes of endoplasmic reticrum. And the strong reaction was observed on the membranes of Golgi saccules. No reaction existed in nucleus,lysosomes, cytoplasmic membrane and nuclear membrane.

42. Immunohistocytochemical Localization of Amine-Containing Neurons Related to Circumventricular Organs of Vertebrates

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1)Area postrema(AP): AP contained many tyrosine hydroxylase(TH)-positive unipolar small neurons and only a few serotonin(5-HT)-positive neurons in mammals. In frog,some numbers of TH-positive, 5-HT-negative ependymal and subependymal cells were firstly observed in the midline and ventrocaudal part of the fourth ventricle. They were liquor contacting cells,and named "fourth ventricular organ(FVO)" by us. 2)Paraventricular organ(PVO): 5-HT-positive cells were firstly discovered as liquor contacting cells in subependymal cells,but no TH-reaction was noticed in frog. These results disagree with histofluorescent observation on catecholamine cells in PVO. 3)Preoptic recess organ(PRO): In frog,TH-positive,dopamine-β-hydroxylase(DBH)-, 5-HT-negative dopamine cells were confirmed in PRO. This agrees well with the microspectrofluorimetric result. 4)Choroid plexus: TH- or 5-HT-positive reaction was observed around the capillaries. 5-HT was positive in the supraependymal plexus in mammals. 5)Medial eminence: TH-positive,DBH-negative processes and terminals derived from intrahypothalamic neurons were observed to be in direct contact with the perivascular basal lamina in mammals. 6)Lateral recess organ(LRO): In frog,5-HT-positive liquor contacting cells were observed in the subependymal layers,extending smooth club-shaped processes to the third ventricle. TH-positive cells existed near the outer layer of the infundibular stalk and they did not extend processes to the ventricle.

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