Lectin Histochemistry in Skeletal Muscles on Healing Process following Cryo-treatment

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Lectins bind specifically to mono- or oligosaccharides. Carnoy's fixed 4μm paraffin sections were used in rat skeletal muscles after cryo-treatment(-60 °C,60sec). HRP conjugated lectins - concanavalin A(Con A),ricinus communis (RCA-1),peanut(PNA),ulex europens(UEA-1),soybean(SBA),dolichos biflorus(DBA), wheat germ(WGA) were used. The staining in normal muscle structure was observed generally with Con A, RCA and WGA. Moderate Con A staining existed in connective tissue, blood vessels, sarcolemma and slight staining in nuclear membrane and tubular profiles in interior of muscle fibers. Moderate RCA staining showed in connective tissue and nuclear membrane and weak one in blood vessels and sarcolemma. Blood vessels showed traceable staining to PNA and DBA. Enlarged muscle fibers after cryo-treatment showed increasing stainings to Con A, RCA and WGA. Regenerated fibers also exhibited increasing stainings to Con A, RCA and WGA. Inflammatory infiltrated cells were positive to Con A, RCA, WGA, PNA, SBA and DBA.

Autoradiographic Study on the Distribution of Radioactive Fucose in Mice

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The distribution of labeled L-fucose, injected intraperitoneally into mice, was studied by whole-body autoradiography.

Whole-body ARG of untreated and $HClO_4$ treated sections was carried out in mice injected 7μCi of ^{14}C-fucose, and LM ARG for kidney and intestine was done in mice injected 800μCi of ^{3}H-fucose.

Whole-body ARGs at 30 min after injection showed that injected fucose was completely absorbed from peritoneal cavity within 30 min, and high radioactivity was in kidney, small intestine, liver, urine and blood. At this time, ARGs of acid-treated sections showed high incorporation rate of ^{14}C into glycoprotein in kidney and small intestine. High radioactivities of these organs were also observed at 1 hr, but gradually decreased thereafter. LM ARGs at 1 hr revealed many silver grains on the brush border of epithelial cells of proximal convoluted tubules. LM ARGs of small intestine also showed many grains on the brush border of the epithelial cells. Number of silver grain in jejunum was greater than in duodenum and ileum.

Relationship Between 3H-flunitrazepam Binding Sites and Distribution of GAD-like Immunoreactivity within the Rat Brain

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There have been accumulated data on interaction between benzodiazepine binding sites and GABA receptors. The authors performed autoradiography of ^{3}H-flunitrazepam(flu) binding sites and immunohistochemistry of GAD and then compared distribution of benzodiazepine receptors with that of the GABA maker. As the results, distribution of GAD immunoreactivities was almost consistent with that of ^{3}H-flu binding sites. Nevertheless, ^{3}H-flu binding sites were evenly distributed in all the cerebellar cortical layers, while GAD positiveness were mainly localized in the Purkinje cell layer. Electron microscopically, in both the substantia nigra and neostriatum GAD immunoreactivity was observed essentially in the axon terminals. Some of ^{3}H-flu binding sites were associated with GAD positive axon terminals and others were not.

In addtion, to differentiate type I and type II benzodiazepine receptors, we added either triazolopyridazine or methyl-bata-carboline-carboxylate in the autoradiographic experimental system of ^{3}H-flu. We found that the substantia nigra contains more type I benzodiazepine receptors than type II.

Intrauterine Distribution of 3H-Estradiol(E2) in Rats Correlating the Estrous Cycle

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Developed silver grains scattered on the luminal, glandular epithelial and the muscular cell cytoplasms, and special granules of the migrated eosinophils by autoradiography(ARG) after prefixed tissue slices were incubated with 3H-E2. A drastic eosinophilia was observed in the mature female rat uterus during pro-estrus and estrus. This eosinophilia was clealy corresponded to the estrous cycle. The grain accumulation was inhibited when the tissue was incubated in 3H-E2 and 100 fold excess of cold E2. Local eosinophilia was observed in the uterus of ovariectomized(OE)rat at one hr after injection of E2 into the uterine wall. Repeated intramuscular injections of E2 (5days) to the OE rat induced dramatic eosinophilia. In contrast, eosinophils were not observed after saline injection instead of E2. In other tissues, intestine, spleen, bone marrow, and vagina, the eosinophils also showed an accumulation of 3H-E2 by ARG. The fresh frozen sections were incubated in 3H-E2 for 30 min at room temperture. The results suggest that all of the eosinophils may have an affinity to E2, however it should only exist hormonal control correlating the rise and fall of eosinophils in the uterus. It still remains unknown the reason why a large number of eosinophils migrate into the uterus at proestrus from the blood under controled by E2.