

370

MECHANISMS OF INTRACELLULAR TRANSPORT AND EXCRETION OF HSAM IN THE HEPATOCYTE S. Higashi, Y. Kuniyasu, H. Kakehi and K. Ishioka
Teikyo University Hospital, Tokyo.

We found that a single administration of human serum albumin microspheres (HSAM) with 0.5 μ m in mean diameter produced numerous lipid droplets in rat hepatocyte and repeated injections of HSAM for 7 days produced necrosis in the hepatocyte. However, the mechanisms of uptake, intracellular transport and excretion of HSAM have not been understood. Ultrastructural and microautoradiographic studies on this process of HSAM were carried out. While most of the HSAM particles were taken up by the RES cells at 5 min after intravenous administration, a small portion were also incorporated into the hepatocyte by pinocytosis. The digested particles were noted in small but numerous vacuoles. These vacuoles aggregated and transformed to lysosomes or lipid droplets near the bile canaliculus. These processes were proven by microautoradiographic technique using I-125 HSAM. Percentage of the biliary excretion of HSAM by the cannulation of bile duct in rat was 4.7% of total liver uptake within 60 min. Intravenously injected I-125 HSAM appeared in bile within a few minute and reached the peak of excretion in 10 min. From the results of these experiments, it was suggested that HSAM particles which were taken up by the hepatocyte was metabolized through the lysosomes and lipid droplets.

371

DEPYROGENATION, STERILIZATION AND DEPROTEINIZATION OF RADIOPHARMACEUTICALS WITH AN ULTRAFILTER. K. Suzuki, K. Tamate and T. Nakayama, National Institute of Radiological Sciences, Chiba.

The automatic production of cyclotron-produced, short-lived radiopharmaceuticals with specially designed equipments is gaining in force. The biosynthetic method of labeled amino acids with enzyme has been noticed as a fast and simple production method. But the preparation of i.v. injectable radiopharmaceuticals with automated equipments is often met with difficulties according to the following reasons. 1) Electric valves, tubes etc. assembled in an equipment can be hardly sterilized. 2) The volume of a final product is around 1-10 ml. 3) Sterilization of an enzymatic column is especially difficult. By using an ultrafilter glutamate dehydrogenase for the L-(N-13)-glutamate synthesis and E. Coli endotoxin, one of typical pyrogen reduced below 10^{-5} and 5×10^{-6} , respectively. Aerobic and anaerobic bacteria were not detected in a filtrate.

Applying the present method, the preparation of radiopharmaceuticals for an i.v. injection would become easier with automated equipments and the biosynthetic method would become more useful.