A TECHNIQUE TO EXAMINE LIVER FUNCTIONING VIA
TAGGED LIVER CELL MEMBRANE GLYCOPROTEIN RECEPTORS.

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When asialoglycoprotein, which has special
liver membrane receptors, is injected intravenously, the level in the blood decreases
and uptake in the liver cells, where it de-
composes into lysozyme, is rapid. A liver
scintigram was made immediately after rapid-
ly injecting 15mCi glycoprotein (Gal27-HSA)
tagged with 99m-Tc (90% tag rate achieved to
date) into an oticular vein of a domesticat-
ed rabbit and the parenchymal liver cell fu-
ctioning was ascertained from the movement
of the glycoproteins; data was gathered at
the rate of 1F/sec. A time activity curve
was then computed for the heart, liver, kidney,
bladder and intestines after defining the
region of interest. After injecting 99m-Tc-
Gal27-HSA, the level in the blood decreased
rapidly; T1/2 was about 1.2-2.0 minutes. Liver
uptake was also rapid, reaching a maximum
level at about 4 minutes and then gradually
decreasing. Only a very small amount was
observed to be excreted by the digestive
system, and none was observed from the gall
bladder. The liver scintigram of 99m-Tc-Gal-
-HSA was judged to have strong merit when
compared to those of TcO4, Sn coloid, HSA, etc.
An experiment to measure the hepatic blood
flow and make a scintigram of liver damaged
rats or rabbits is also planned, and the
clinical application of this research.