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New hepatoma detecting agent; 2-deoxy-2-(18-F)fluoro-D-galactose (F-18 FDGal)
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Galactose is metabolized mainly by the liver in adult human being. Bauer reported that hepatocellular carcinoma (HCC) still reserve metabolic capacity of galactose, and other kinds of cancers don't have its capacity. Applying this character, basic and clinical study were performed to differentiate HCC and metastatic liver tumor.

Tissue distribution study of F-18 FDGal was performed using AH109A bearing rats. Liver accumulation of F-18 FDGal is highest, the next is the kidney, and the third is tumor. Metabolites study of F-18 FDGal was performed to same tumor bearing rat. FDGal was metabolized to FDGal-1-P and UDP-FDGal in tumor and in the liver.

Clinical study of F-18 FDGal was performed to the 5 normal volunteers, 7 liver cirrhosis patients, 4 HCC patients, and 4 metastatic liver tumor patients using ECAT II (ORTEC). Mean DAR of normal liver was about 21, cirrhotic liver was about 12, HCC was about 16, and metastatic liver tumor was about 4.
