## **Supplemental figures**

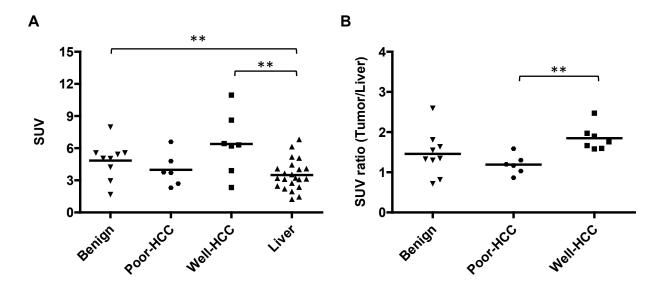
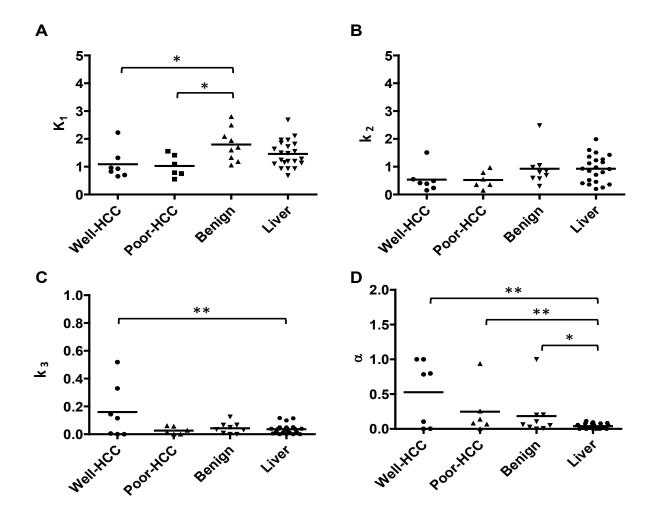
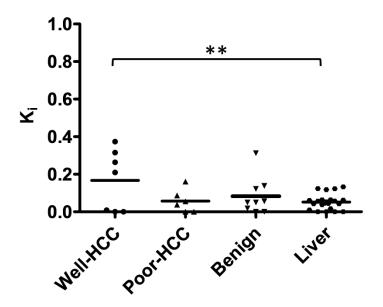


Figure S1. Comparison of SUV (A) and lesion to non-lesion liver tissue SUV ratio (B) for benign lesion, poorly-differentiated HCC, well-differentiated HCC and non-tumor liver tissue. Unpaired student t test was performed to evaluate the differences between each two groups. \*\*, P < 0.01.



**Figure S2.** Comparison of  $K_1$  (A),  $k_2$  (B),  $k_3$  (C) and  $\alpha$  (D) for benign lesion, poorly-differentiated HCC, well-differentiated HCC and non-lesion liver tissue. Unpaired student t-test was performed to evaluate the differences between each two groups. \*, P< 0.05; \*\*, P< 0.01.



**Figure S3.** Comparison of the local hepatic  $^{11}$ C-Acetate metabolic rate  $K_i$  for well-differentiated HCC, poorly-differentiated HCC, benign lesions and non-lesion liver tissues. Unpaired student t-test was performed to evaluate the differences between each two groups. \*\*, P< 0.01.

Table S1. The differentiation results with discriminant analysis for all the lesions

Group	I*						II						III									
Patient No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
Prediction	I	I	I	I	I	III	I	III	II	I	II	II	III	I	III	III	III	III	III	III	II	II
Validation	Ι	I	I	I	I	III	I	III	II	I	II	II	III	I	III	III	III	III	I	III	II	II

<sup>\*</sup>I, Well differentiated HCC; II, Poorly-differentiated HCC; III, Benign tumor.