

Supplementary Table 2. Diagnostic Accuracy of DKK-1, AFP, and DCP in Diagnosing Early-Stage HCC

	AUC	95% CI	Sensitivity (%)	Specificity (%)	PPV (%)	NPV (%)	+LR	-LR
Early-stage HCC (TNM I-II) vs. all controls								
DKK-1	0.818	0.768–0.868	89.0	62.9	69.7	85.6	2.40	0.18
AFP	0.772	0.714–0.830	61.8	89.5	84.8	71.4	5.91	0.43
DCP	0.777	0.721–0.833	59.2	93.5	90.3	69.1	9.14	0.44
DKK-1 plus AFP	0.893	0.857–0.928	86.2	76.2	77.6	85.2	3.62	0.18
DKK-1 plus DCP	0.908	0.876–0.941	76.2	90.5	89.3	78.5	8.03	0.26
DKK-1 plus AFP plus DCP	0.939	0.913–0.964	84.6	90.5	90.3	84.9	8.92	0.17
Early-stage HCC (BCLC A–B) vs. all controls								
DKK-1	0.811	0.760–0.862	85.0	62.9	69.1	81.2	2.29	0.24
AFP	0.772	0.714–0.830	61.6	89.5	84.9	71.0	5.89	0.43
DCP	0.783	0.728–0.838	60.4	93.5	90.6	69.5	9.33	0.42
DKK-1 plus AFP	0.891	0.855–0.927	83.7	76.2	77.4	82.7	3.51	0.21
DKK-1 plus DCP	0.910	0.878–0.942	75.9	90.5	89.4	78.0	7.99	0.27
DKK-1 plus AFP plus DCP	0.940	0.915–0.965	84.1	90.5	90.4	84.4	8.87	0.18
Early-stage HCC (TNM I-II) vs. all controls except healthy subjects								
DKK-1	0.818	0.768–0.868	89.0	63.1	75.9	81.4	2.41	0.17
AFP	0.772	0.714–0.830	61.4	85.8	84.8	63.4	4.33	0.45
DCP	0.777	0.721–0.833	59.2	91.9	91.3	61.1	7.32	0.44
DKK-1 plus AFP	0.893	0.857–0.928	85.5	75.7	82.1	80.0	3.52	0.19
DKK-1 plus DCP	0.908	0.876–0.941	76.2	8.7	90.8	71.7	6.72	0.27
DKK-1 plus AFP plus DCP	0.939	0.913–0.964	84.6	88.7	91.7	79.6	7.46	0.17
Early-stage HCC by (BCLC A–B) vs. all controls except healthy subjects								
DKK-1	0.811	0.760–0.862	85.0	63.1	75.3	76.1	2.30	0.24
AFP	0.772	0.714–0.830	61.6	85.8	84.9	63.4	4.35	0.45
DCP	0.783	0.728–0.838	60.4	91.9	91.6	61.5	7.48	0.43
DKK-1 plus AFP	0.891	0.855–0.927	83.0	75.7	81.9	77.1	6.41	0.22
DKK-1 plus DCP	0.910	0.878–0.942	75.9	88.7	90.9	71.1	6.69	0.27
DKK-1 plus AFP plus DCP	0.940	0.915–0.965	84.1	88.7	91.7	78.9	7.42	0.18

DKK-1, dickkopf-1; HCC, hepatocellular carcinoma; AFP, alpha-fetoprotein; DCP, des-gamma-carboxy prothrombin; AUC, area under receiver operating characteristic curve; CI, confidence interval; PPV, positive predictive value; NPV, negative predictive value; LR, likelihood ratio; TNM, Tumor-Node-Metastasis; BCLC, Barcelona Clinic Liver Cancer.

The optimum predicted probabilities of DKK-1, AFP, DCP, and their combination were derived from their respective ROC curves by maximizing the sum of sensitivity and specificity and minimizing the overall error.