

Figure S1 Workflow of this study.

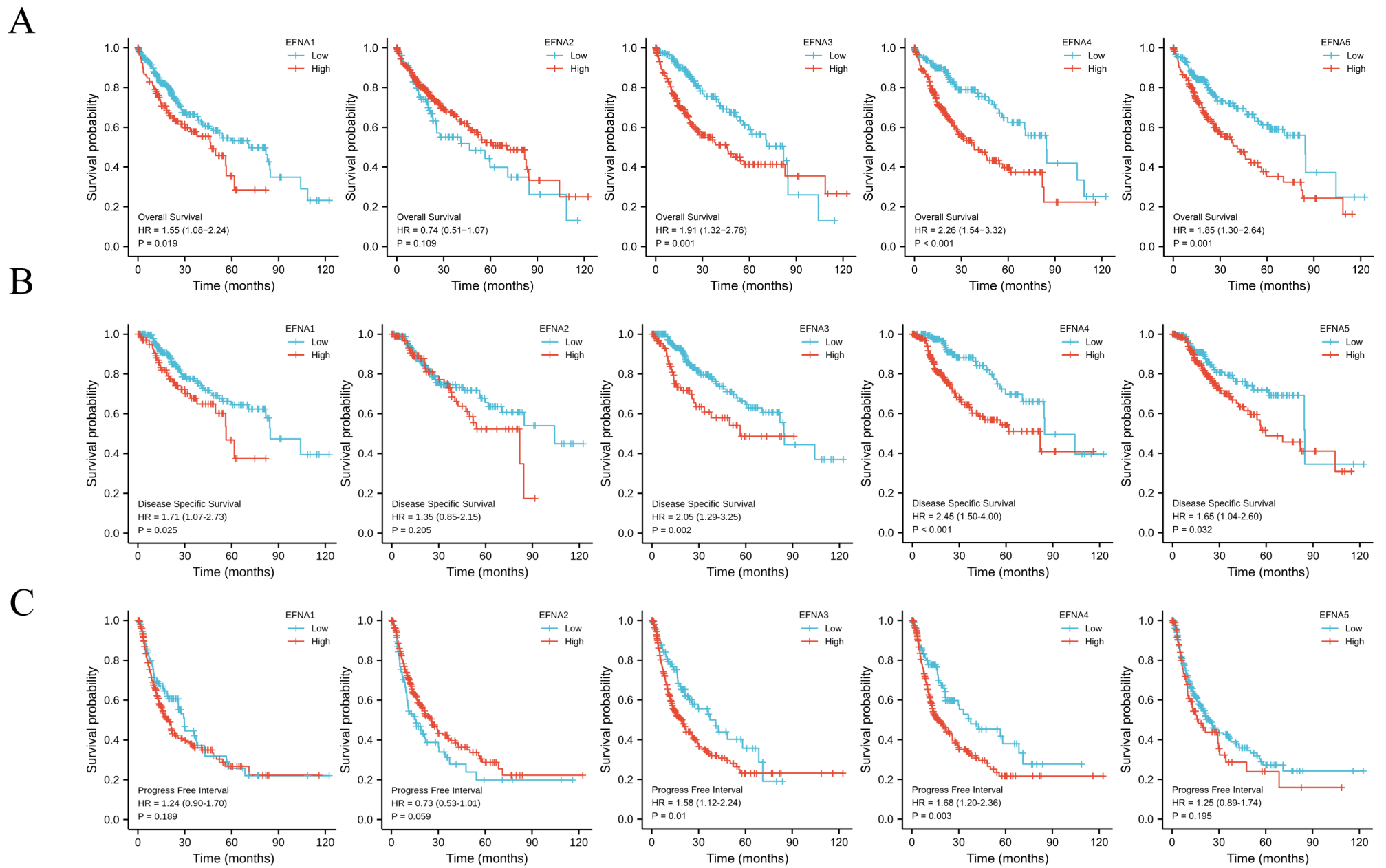


Figure S2 The prognostic value of *EFNAs* mRNA expression in HCC. (A) The prognostic value of *EFNAs* in HCC patients in the overall survival curve (TCGA). (B) The prognostic value of *EFNAs* in HCC patients in the disease specific survival curve (TCGA). (C) The prognostic value of *EFNAs* in HCC patients in the progress free interval survival curve (TCGA).

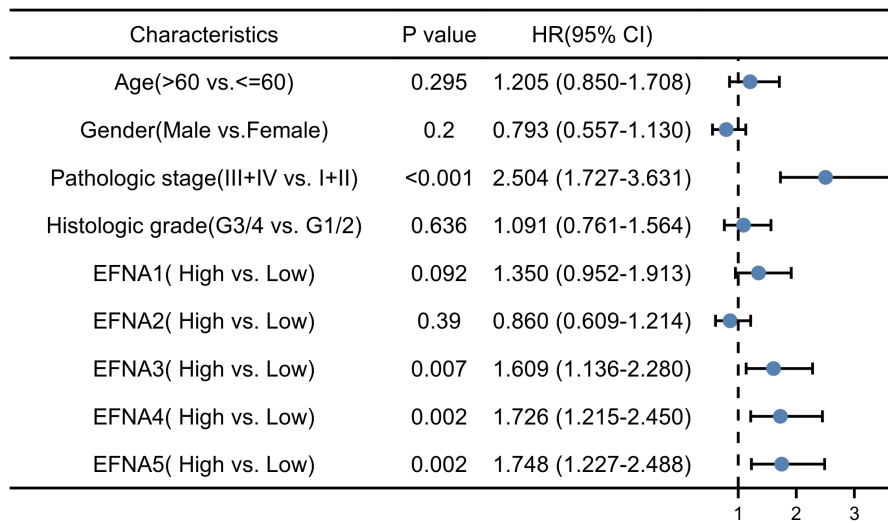


Figure S3 Univariate survival analysis of *EFNA* expression in subgroups with different characteristics.

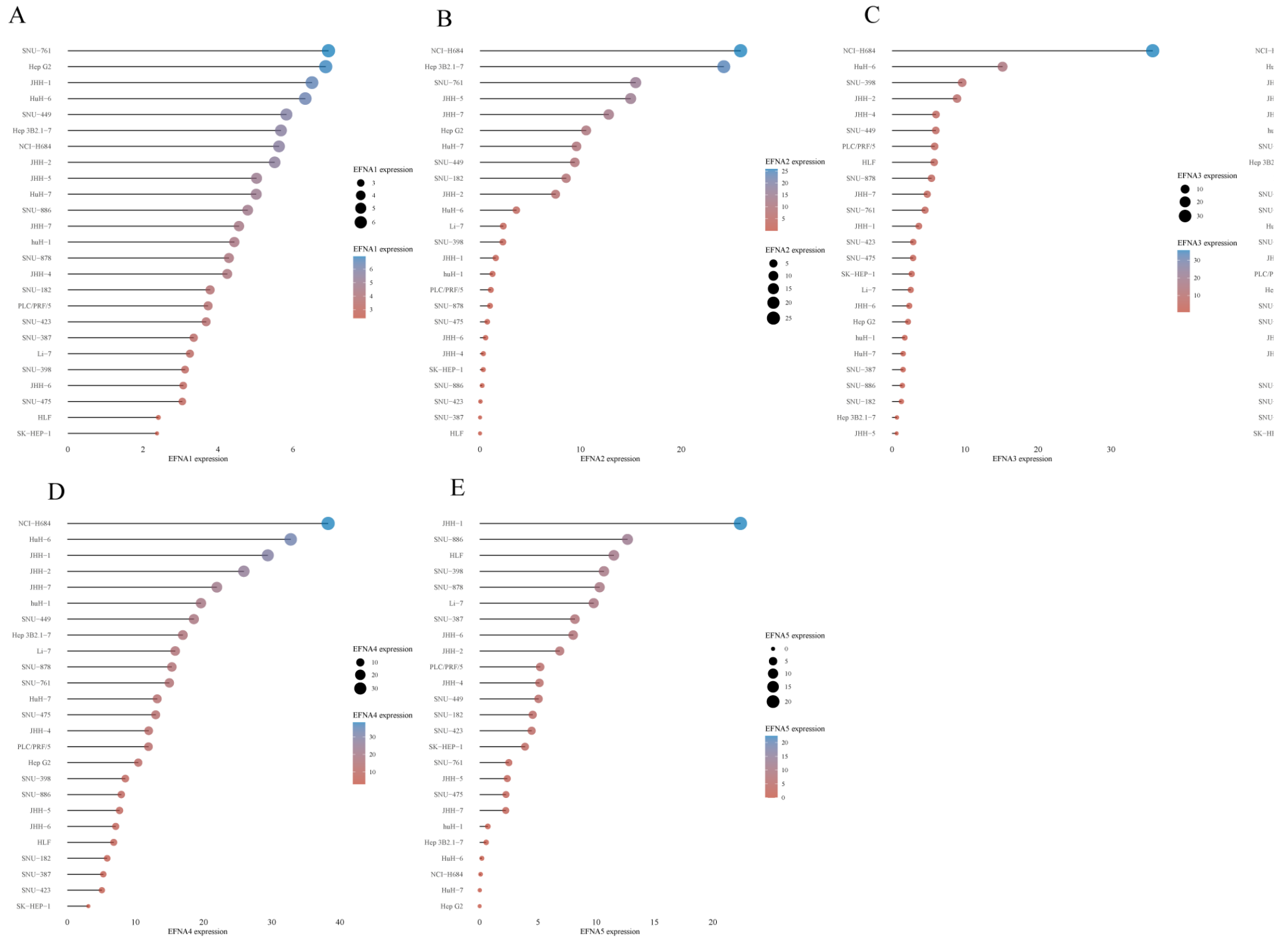


Figure S4 The expression of *EFNA* genes in liver cancer cell lines.

Table S1 Basic characteristics of 374 HCC patients

Characteristic	Levels	Value (n=374)
Age, median (IQR)		61 (52, 69)
Age	≤60	177 (47.5)
	>60	196 (52.5)
Gender	Female	121 (32.4)
	Male	253 (67.6)
Race	Asian	160 (44.2)
	Black or African American	17 (4.7)
	White	185 (51.1)
T stage	T1	183 (49.3)
	T2	95 (25.6)
	T3	80 (21.6)
	T4	13 (3.5)
N stage	N0	254 (98.4)
	N1	4 (1.6)
M stage	M0	268 (98.5)
	M1	4 (1.5)
Pathologic stage	Stage I	173 (49.4)
	Stage II	87 (24.9)
	Stage III	85 (24.3)
	Stage IV	5 (1.4)
Tumor status	Tumor free	202 (56.9)
	With tumor	153 (43.1)
Weight (kg)	≤70	184 (53.2)
	>70	162 (46.8)
BMI (kg/m ²)	≤25	177 (52.5)
	>25	160 (47.5)
Residual tumor	R0	327 (94.8)
	R1	17 (4.9)
	R2	1 (0.3)
Histologic grade	G1	55 (14.9)
	G2	178 (48.2)
	G3	124 (33.6)
	G4	12 (3.3)
Adjacent hepatic tissue inflammation	None	118 (49.8)
	Mild	101 (42.6)
	Severe	18 (7.6)
AFP (ng/mL)	≤400	215 (76.8)
	>400	65 (23.2)
Albumin (g/dL)	<3.5	69 (23)
	≥3.5	231 (77)
Prothrombin time	≤4	208 (70)
	>4	89 (30)
Child-Pugh grade	A	219 (90.9)
	B	21 (8.7)
	C	1 (0.4)
Fibrosis ishak score	0	75 (34.9)
	1/2	31 (14.4)
	3/4	28 (13)
	5/6	81 (37.7)
Vascular invasion	No	208 (65.4)
	Yes	110 (34.6)

Data are presented as n (%) unless otherwise indicated. AFP, alpha-fetoprotein; BMI, body mass index; HCC, hepatocellular carcinoma; IQR, interquartile range; M, metastasis; N, node; T, tumor.

Table S2 Multivariate analysis of overall survival in 374 HCC specimens.

Variables	Multivariate analysis	
	HR (95% CI)	P value
Age (years)		
Adjacent hepatic tissue inflammation		
Child-Pugh grade		
AFP (ng/mL)		
Fibrosis ishak score		
Pathologic stage	2.216 (1.374–3.573)	0.001**
Histologic grade		
T stage	1.307 (0.807–2.115)	0.28
<i>EFNA1</i> (high vs. low)	1.494 (1.024–2.178)	0.04*

AFP, alpha-fetoprotein; CI, confidence interval; HCC, hepatocellular carcinoma; HR, hazard ratio; T, tumor.

Table S3 Multivariate analysis of overall survival in 374 HCC specimens

Variables	Multivariate analysis	
	HR (95% CI)	P value
Age (years)		
Adjacent hepatic tissue inflammation		
Child-Pugh grade		
AFP (ng/mL)		
Fibrosis ishak score		
Pathologic stage	2.034 (1.267–3.266)	0.003**
Histologic grade		
T stage	1.378 (0.850–2.232)	0.19
<i>EFNA2</i> (high vs. low)		

AFP, alpha-fetoprotein; CI, confidence interval; HCC, hepatocellular carcinoma; HR, hazard ratio; T, tumor.

Table S4 Multivariate analysis of overall survival in 374 HCC specimens

Variables	Multivariate analysis	
	HR (95% CI)	P value
Age (years)		
Adjacent hepatic tissue inflammation		
Child-Pugh grade		
AFP (ng/mL)		
Fibrosis ishak score		
Pathologic stage	2.024 (1.263–3.244)	0.003**
Histologic grade		
T stage	1.298 (0.799–2.109)	
<i>EFNA3</i> (high vs. low)	1.376 (0.943–2.006)	0.10

AFP, alpha-fetoprotein; CI, confidence interval; HCC, hepatocellular carcinoma; HR, hazard ratio; T, tumor.

Table S5 Multivariate analysis of overall survival in 374 HCC specimens

Variables	Multivariate analysis	
	HR (95% CI)	P value
Age (years)		
Adjacent hepatic tissue inflammation		
Child-Pugh grade		
AFP (ng/mL)		
Fibrosis ishak score		
Pathologic stage	2.126 (1.327–3.406)	0.002**
Histologic grade		
T stage	1.319 (0.817–2.131)	0.26
<i>EFNA4</i> (high vs. low)	1.699 (1.168–2.473)	0.006**

AFP, alpha-fetoprotein; CI, confidence interval; HCC, hepatocellular carcinoma; HR, hazard ratio; T, tumor.

Table S6 Multivariate analysis of overall survival in 374 HCC specimens

Variables	Multivariate analysis	
	HR (95% CI)	P value
Age (years)		
Adjacent hepatic tissue inflammation		
Child-Pugh grade		
AFP (ng/mL)		
Fibrosis ishak score		
Pathologic stage	2.012 (1.249–3.239)	0.004**
Histologic grade		
T stage	1.371 (0.844–2.228)	0.20
<i>EFNA5</i> (high vs. low)	1.669 (1.150–2.422)	0.007**

AFP, alpha-fetoprotein; CI, confidence interval; HCC, hepatocellular carcinoma; HR, hazard ratio; T, tumor.