Fig. S1: Survival analysis of HCC patients in the training set stratified by stage, age and tumor grade. Survival analysis compared recurrence-free survival (RFS) by recurrence risk (high vs. low) stratified by clinical characteristics. Kaplan-Meier curves for patients with stage I HCC (n=80) (**A**), patients with stage II HCC (n=38) (**B**), patients with stage III/IV HCC (n=35) (**C**), patients aged 65 years or younger (n=103) (**D**), patients aged older than 65 years (n=50) (**E**), patients with grade I tumor (n=25) (**F**), patients with grade II tumor (n=69) (**G**), patients with grade III/IV tumor (n=59) (**H**). The "+" symbols in the panel indicate censored data.
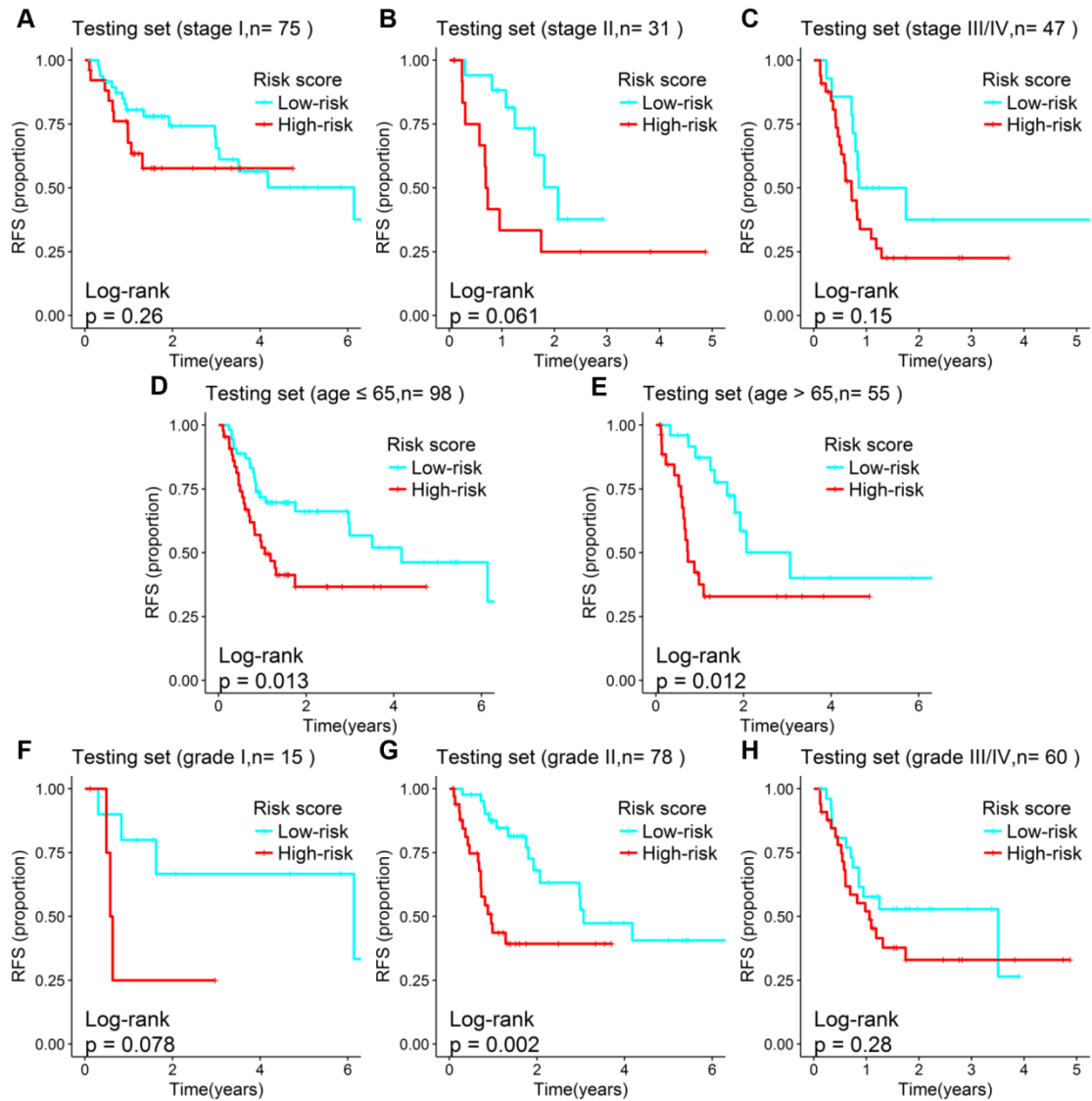
Fig. S2: Survival analysis of HCC patients in the testing set stratified by stage, age and tumor grade. Survival analysis compared recurrence-free survival (RFS) by recurrence risk (high vs. low) stratified by clinical characteristics. Kaplan-Meier curves for patients with stage I HCC (n=75) (**A**), patients with stage II HCC (n=31) (**B**), patients with stage III/IV HCC (n=47) (**C**), patients aged 65 years or younger (n=98) (**D**), patients aged older than 65 years (n=55) (**E**), patients with grade I tumor (n=15) (**F**), patients with grade II tumor (n=78) (**G**), patients with grade III/IV tumor (n=60) (**H**). The "+" symbols in the panel indicate censored data.
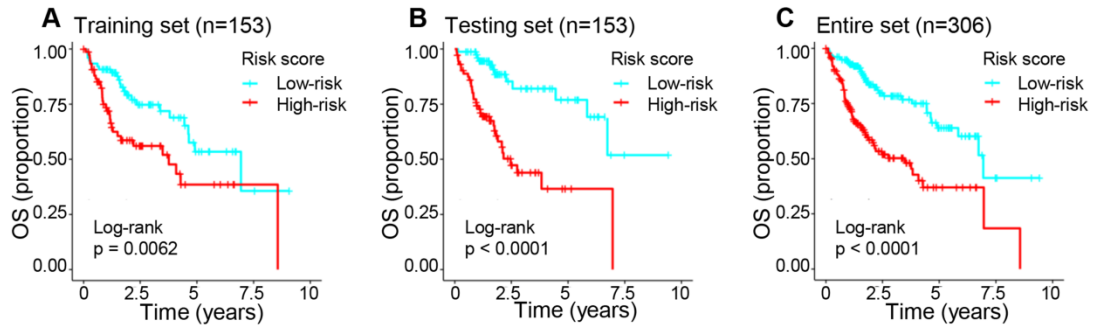
Fig. S3: Association between six-miRNA signature and OS of HCC patients in different sets. Kaplan-Meier curves of OS between high- and low-risk patients in training set (**A**), testing set (**B**), and entire TCGA set (**C**). The "+" symbols in the panel indicate censored data.
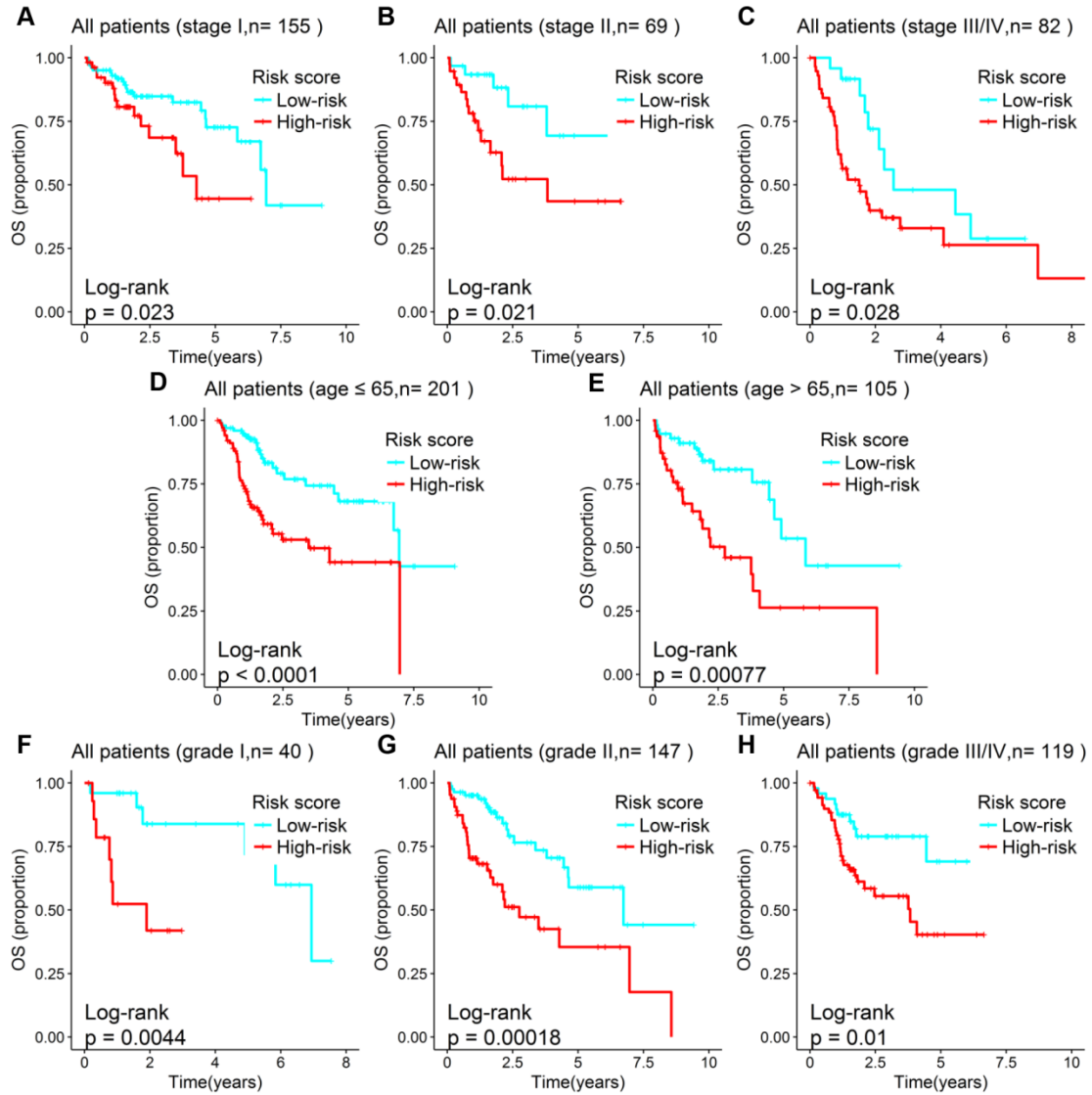
Fig. S4: Stratified analysis of association between six-miRNA signature and OS of all HCC patients. Kaplan-Meier curves for patients with stage I HCC (n=155) (**A**), patients with stage II HCC (n=69) (**B**), patients with stage III/IV HCC (n=82) (**C**), patients aged 65 years or younger (n=201) (**D**), patients aged older than 65 years (n=105) (**E**), patients with grade I tumor (n=40) (**F**), patients with grade II tumor (n=147) (**G**), patients with grade III/IV tumor (n=119) (**H**). The "+" symbols in the panel indicate censored data.
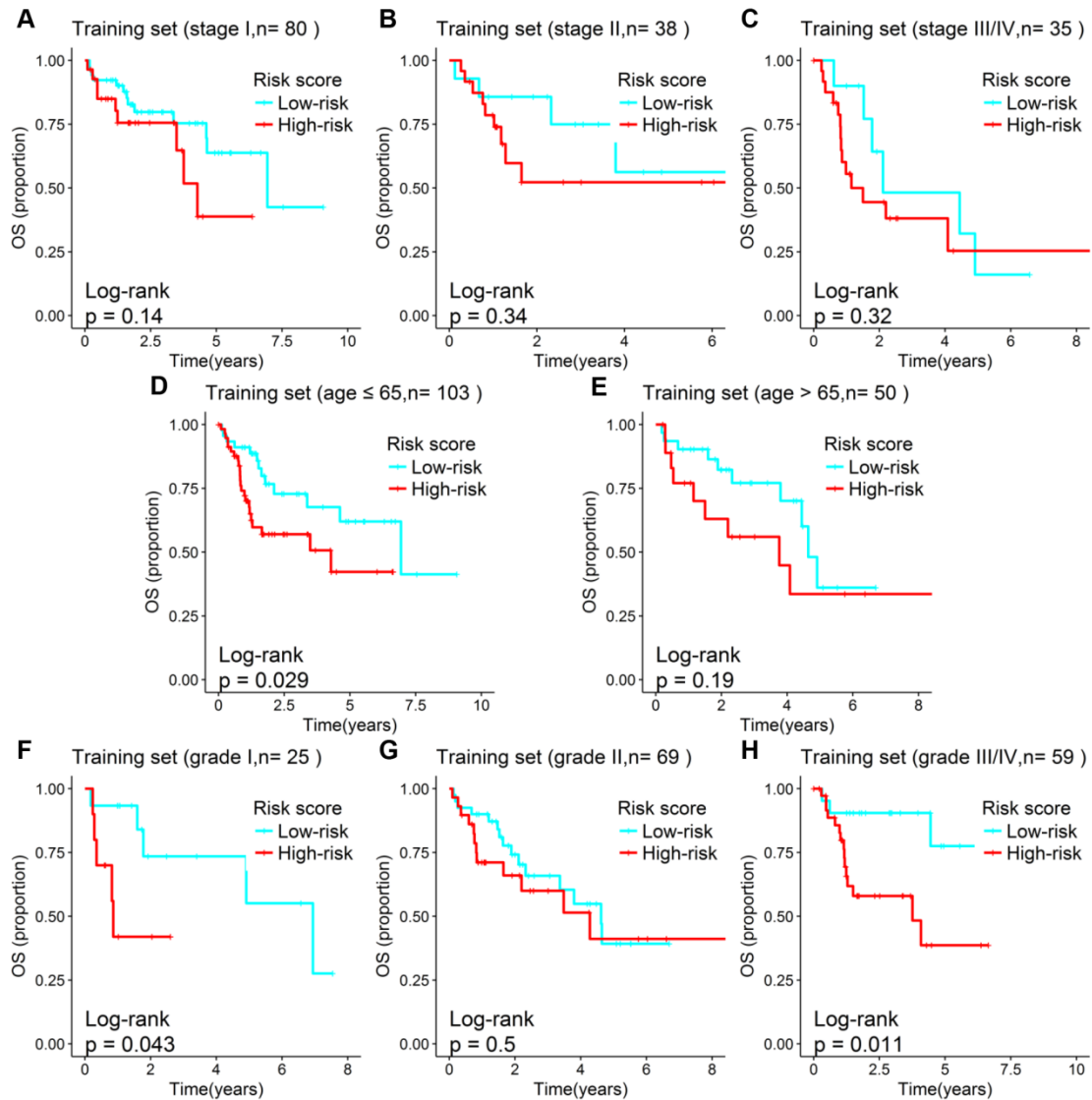
Fig. S5: Stratified analysis of association between six-miRNA signature and OS of HCC patients in the training set. Kaplan-Meier curves for patients with stage I HCC (n=80) (**A**), patients with stage II HCC (n=38) (**B**), patients with stage III/IV HCC (n=35) (**C**), patients aged 65 years or younger (n=103) (**D**), patients aged older than 65 years (n=50) (**E**), patients with grade I tumor (n=25) (**F**), patients with grade II tumor (n=69) (**G**), patients with grade III/IV tumor (n=59) (**H**). The "+" symbols in the panel indicate censored data.
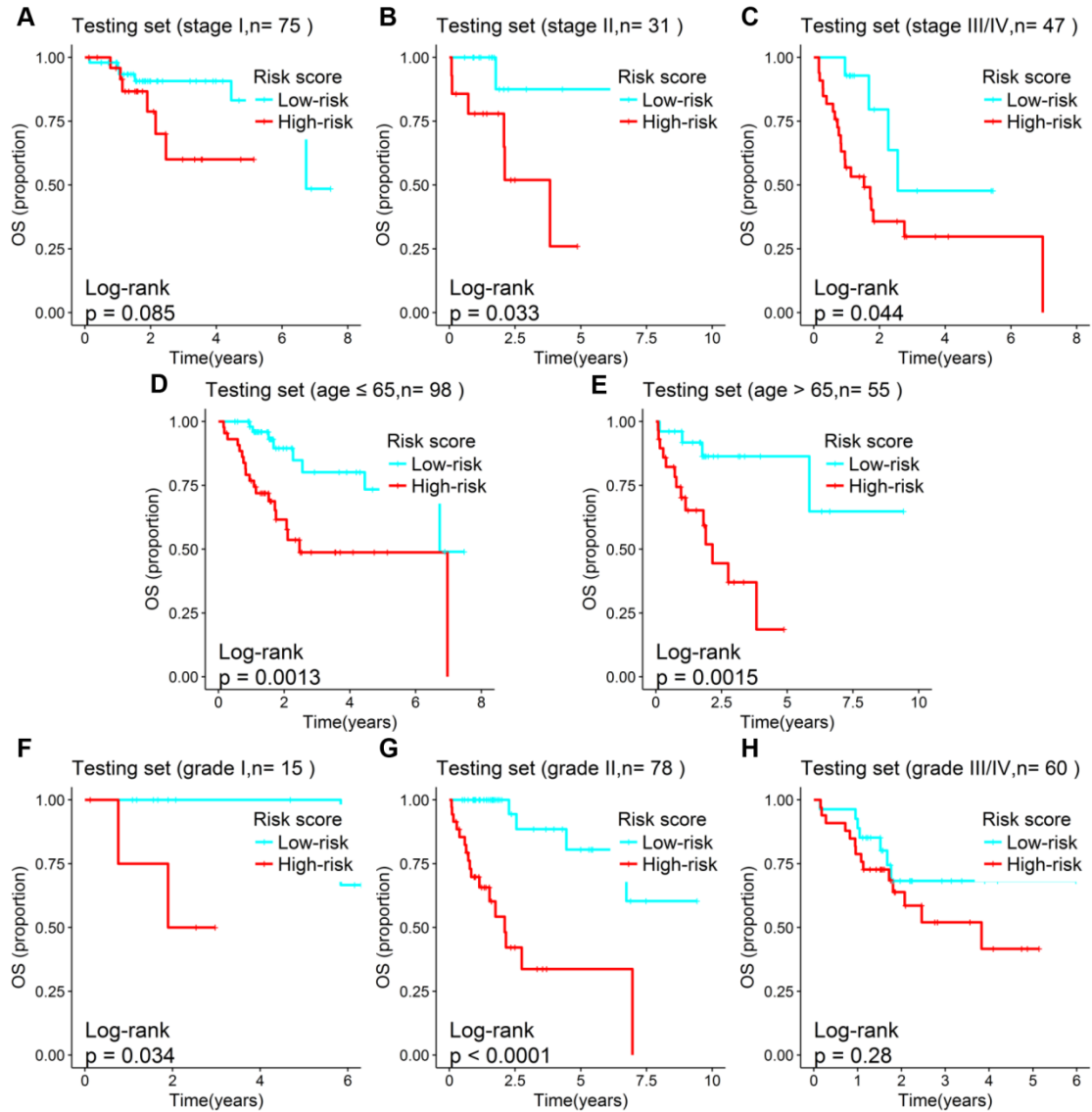
Fig. S6: Stratified analysis of association between six-miRNA signature and OS of HCC patients in the testing set. Kaplan-Meier curves for patients with stage I HCC (n=75) (**A**), patients with stage II HCC (n=31) (**B**), patients with stage III/IV HCC (n=47) (**C**), patients aged 65 years or younger (n=98) (**D**), patients aged older than 65 years (n=55) (**E**), patients with grade I tumor (n=15) (**F**), patients with grade II tumor (n=78) (**G**), patients with grade III/IV tumor (n=60) (**H**). The "+" symbols in the panel indicate censored data.
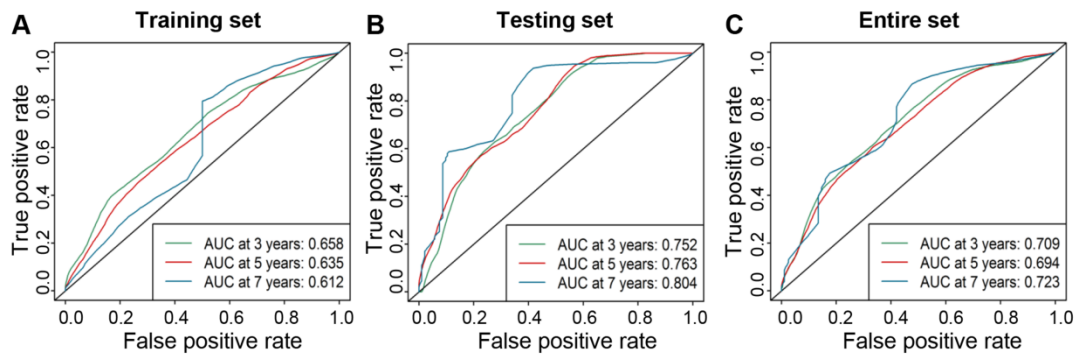
Fig. S7: Performance assessment of the six-miRNA signature by survival ROC analysis. Receiver operating characteristic (ROC) analysis of the six-miRNA signature for prediction of overall survival (OS) at 3, 5, and 7 years in the training set (**A**), the testing set (**B**), and the entire set (**C**).

Table S1. Baseline demographic and clinical features of HCC patients in training and testing set

Characteristic		Training set (n=153)	Testing set (n=153)	p-value
Sex				0.901[a]
	Male	108	106	
	Female	45	47	
Age, years (mean±SD)		58.8 ±13.0	58.6±12.8	0.884[b]
Tumor stage				0.42[a]
	Stage I	80	75	
	Stage II	38	31	
	Stage III	33	45	
	Stage IV	2	2	
Tumor grade				0.321[a]
	G I	25	15	
	G II	69	78	
	G III	52	55	
	G IV	7	5	
AJCC TNM staging system				
T stage				0.458[a]
	T1	80	76	
	T2	39	32	
	T3	29	40	
	T4	5	5	
N stage				0.624[a]
	N0	113	118	
	N1	1	2	
	Nx	39	33	
M stage				0.808[a]
	M0	120	114	
	M1	2	2	
	Mx	31	37	

[a]chi-square test; [b]Student *t*-test; SD: standard deviation

HCC, hepatocellular carcinoma; AJCC, American Joint Committee on Cancer

Tumor stage: AJCC pathological stage; Tumor grade: neoplasm histologic grade

T stage: tumor size; N stage: lymph node involvement; M stage: Metastasis status

Table S2. Multivariable Cox regression analysis of OS in HCC patients in the training, testing, and entire sets

Characteristic		Multivariable analysis		
		HR	95% CI of HR	p-value
Training set (n=153)				
Risk score		1.594	1.272-1.996	**<0.0001**
Sex	Female/Male	1.073	0.605-1.904	0.810
Age, years	≥65 /<65	1.028	0.572-1.848	0.925
Tumor stage	III.IV/I.II	1.860	1.007-3.436	0.048
Tumor grade	III.IV/I.II	0.96	0.384-1.259	0.231
T stage	T3.T4/T1.T2	NA	NA	NA
N stage	non-N0/N0	0.921	0.421-2.017	0.837
M stage	non-M0/M0	1.706	0.791-3.678	0.173
Testing set (n=153)				
Risk score		1.622	1.227~2.143	**0.0006**
Sex	Female/Male	0.950	0.496-1.819	0.878
Age, years	≥65 /<65	1.364	0.711-2.616	0.350
Tumor stage	III.IV/I.II	0.641	0.074-5.551	0.687
Tumor grade	III.IV/I.II	1.122	0.569-2.210	0.740
T stage	T3.T4/T1.T2	5.508	0.604-50.258	0.130
N stage	non-N0/N0	1.442	0.649-3.203	0.369
M stage	non-M0/M0	2.062	0.973-4.370	0.059
Entire set (n=306)				
Risk score		1.646	1.393~1.945	**<0.0001**
Sex	Female/Male	0.998	0.658-1.512	0.991
Age, years	≥65 /<65	1.110	0.734-1.677	0.622
Tumor stage	III.IV/I.II	0.599	0.076-7.749	0.627
Tumor grade	III.IV/I.II	0.860	0.556-1.331	0.500
T stage	T3.T4/T1.T2	4.011	0.500-32.137	0.191
N stage	non-N0/N0	1.206	0.703-2.701	0.496
M stage	non-M0/M0	1.740	1.033-2.932	0.037

HR, hazard ratio; CI, confidence interval

HCC, hepatocellular carcinoma; OS, overall survival

Tumor grade: neoplasm histologic grade; Tumor stage: AJCC pathological stage

T stage: tumor size; N stage: lymph node involvement; M stage: Metastasis status