

Table. S1 The sequences of the qRT-PCR primers used in this study

Gene	Forward primer	Reverse primer
AURKA	GAGGTCCAAAACGTGTTCTCG	ACAGGATGAGGTACACTGGTTG
PZP	CACAGGAAACCGTCCTGCTT	ACTCAGCAACCACAGACTCAT
RACGAP1	TCCAATTTATCCAGTTGGCGAA	CTTCAGCTTAACATCCAGAGCA
ACOT12	GAGGAAGGAGCGGTTTCCAC	AGGCGGCTTGCAGAAATAGTA
LCAT	ACCTGGTCAACAATGGCTACG	TAGAGCAAGTGTAGACAGCCG
$\beta$ -ACTIN	CGTGGGCCCGCCCTAGGCACCA	TTGGCTTAGGGTTCAGGGGGG

Table S2 Clinical characteristics of HCC patients involved in the study

		TCGA cohort (N=365)	ICGC cohort (N=227)	Independent cohort (N=59)
Gender	Male	119	61	45
	Female	246	166	14
Age	$\leq 60$ years	173	49	27
	$>60$ years	192	178	32
Grade	G1/2	230		35
	G3/4	130		24
	unknown	5		
TNM Stage	I/II	254	140	42
	III/IV	87	87	17
	unknown	24	0	0
Vascular Invasion	Yes	106		
	No	205		
	unknown	5		
Recurrence	With tumor	122		29
	Tumor free	161		30
	unknown	82		0
Cirrhosis	With	68		6
	Without	141		53
	unknown	156		0
<b>HBV or HCV Infection</b>				
	Yes	149		41
	No	203		18
	unknown	13		0
Child-Pugh	A	216		57
	B	21		2
	C	1		0

<b>unknown</b>	127	0
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Table. S3 The results of collinearity statistics

	<b>Tolerance</b>	<b>Variance Inflation Factor (VIF)</b>
<b>AURKA</b>	0.439	2.280
<b>PZP</b>	0.901	1.110
<b>RACGAP1</b>	0.415	2.412
<b>ACOT12</b>	0.839	1.192
<b>LCAT</b>	0.795	1.258