

Table S1 Traits of the patients in TCGA

Variables	Classification	Case, n (%)
Age at initial diagnosis	<60	94 (44.34%)
	≥60	117 (55.19%)
	NA	1 (0.47%)
Gender	Male	143(67.45%)
	Female	69 (32.55%)
Cirrhotic state	Yes	79 (37.26%)
	No	133 (62.74%)
Family cancer history	No	113 (53.30%)
	Yes	69 (32.55%)
	NA	30 (14.15%)
Serum AFP level	<400	153 (72.17%)
	≥400	36 (16.98%)
	NA	23 (10.85%)
Pathologic stage	I + II	159 (75.00%)
	III + IV	42 (19.81%)
	NA	11 (5.19%)
T stage	T1+T2	168 (79.25%)
	T3+T4	41 (19.34%)
	Tx	1 (0.47%)
	NA	2 (0.94%)
N stage	N0	148 (69.81%)
	N1-2	2 (0.94%)
	Nx	61 (28.77%)
	NA	1 (0.47%)
M stage	M0	153 (72.17%)
	M1	4 (1.89%)
	Mx	55 (25.94%)
Vessels in tumor	Micro	55 (25.94%)
	Macro	8 (3.77%)
	None	140 (66.04%)
	NA	9 (4.25%)

NA, not applicable; AFP, α -fetoprotein; Micro, microvessels; Macro, macrovessels.

Table S2 Correlation of SOX9 with clinicopathological traits in NCHCC

Variables	Non-cirrhotic HCC(n=133)		P value
	Total, n (%)	SOX9 Low/high expression	
Age at initial diagnosis			0.09
<60	52 (39.10)	35/17	
≥60	81 (60.90)	65/16	
Gender			0.89
Male	82 (61.65)	62/20	
Female	51 (38.35)	38/13	
Family cancer history			0.52
No	66 (49.62)	48/18	
Yes	50 (37.59)	39/11	
NA	17 (12.78)	13/4	
Serum AFP level			0.01
<400	91 (68.42)	72/19	
≥400	25 (18.80)	13/12	
NA	17 (12.78)	15/2	
Pathologic stage			0.97
I + II	92 (69.17)	70/22	
III + IV	33 (24.81)	25/8	
NA	8 (6.02)	5/3	
T stage			0.88
T1 + T2	98 (73.68)	73/25	
T3 + T4	33 (24.81)	25/8	
Tx	1 (0.75)	1/0	
NA	1 (0.75)	1/0	
N stage			1.00
N0	91 (68.42)	66/25	
N1	1 (0.75)	1/0	
Nx	41 (30.83)	33/8	
M stage			1.00
M0	91 (68.42)	70/21	
M1	4 (3.01)	3/1	
Mx	38 (28.57)	27/11	
Recurrence			0.34
Yes	63 (47.37)	45/18	
No	70 (52.63)	55/15	
Vessels in tumor			0.27
Micro + Macro	39 (29.32)	27/12	
None	88 (66.17)	69/19	

NA, not applicable; AFP, α -fetoprotein; Micro, microvessels; Macro, macrovessels. When analyzing the correlation, the patients with Tx, Nx, Mx, and NA were excluded. The P value <0.05 was marked with bold type.

Table S3 Correlation of SOX9 with clinicopathological traits in CHCC

Variables	Cirrhotic HCC (n=79)		P value
	Total, n (%)	SOX9 Low/High expression	
Age at initial diagnosis			0.14
<60	21 (53.16%)	29/13	
≥60	36 (45.57%)	30/6	
NA	1 (1.27%)	0/1	
Gender			0.97
Male	61 (77.22%)	45/16	
Female	18 (22.78%)	14/4	
Family cancer history			0.14
No	47 (59.49%)	32/15	
Yes	19 (24.05%)	17/2	
NA	13 (16.46%)	10/3	
Serum AFP level			0.049
<400	62 (78.48%)	49/13	
≥400	11 (13.92%)	5/6	
NA	6 (7.59%)	5/1	
Pathologic stage			0.13
I + II	67 (84.81%)	47/20	
III + IV	9 (11.39%)	9/0	
NA	3 (3.80%)	3/0	
T stage			0.18
T1 + T2	70 (88.61%)	50/20	
T3 + T4	8 (10.13%)	8/0	
NA	1 (1.27%)	1/0	
N stage			1.00
N0	57 (72.15%)	43/14	
N1	1 (1.27%)	1/0	
Nx	20 (25.32%)	15/5	
NA	1 (1.27%)	0/1	
M stage			1.00
M0	62 (78.48%)	46/16	
Mx	17 (21.52%)	13/4	
Recurrence			0.33
Yes	43 (54.43%)	34/9	
No	36 (45.57%)	25/11	
Vessels in tumor			0.70
Micro + Macro	24 (30.38%)	17/7	
None	52 (65.82%)	39/13	
NA	3 (3.80%)	3/0	

NA, not applicable; AFP, α -fetoprotein; Micro, microvessels; Macro, macrovessels. When analyzing the correlation, the patients with Tx, Nx, Mx, and NA were excluded. The P value <0.05 was marked with bold type.