

**Supplementary Table S1** Correlation between clinicopathological features and WDR4 expression in HCC tumor tissues.

Characteristics	Number	WDR4 expression		P value
		High	Low	
Gender				0.1147
Male	45	19	26	
Female	35	21	14	
Age				0.4912
<65	49	26	23	
≥65	31	14	17	
HBV infection				0.4586
No	23	10	13	
Yes	57	30	27	
AFP				0.8161
≤400 (μg/L)	29	15	14	
>400 (μg/L)	51	25	26	
Tumor size				<b>0.0256*</b>
≤5cm	39	15	24	
>5cm	41	26	15	
TNM staging				<b>0.0015*</b>
I-II	46	16	30	
III-IV	34	24	10	
Lymph node metastasis				<b>0.0222*</b>
Absent	59	25	34	
Present	21	15	6	
BCLC stage				<b>0.0170*</b>
Low	54	22	32	
High	26	18	8	
PVTT				<b>0.0251*</b>
NO	38	14	24	
YES	42	26	16	

\*The expression of WDR4 were compared between the tumor tissue and the normal tissue. BCLC, Barcelona Clinic Liver Cancer; PVTT, portal vein tumor thrombus. Bold italics indicate statistically significant values. \*P<0.05

**Supplementary Table S2** Univariate and multivariate analyses of clinicopathological characteristics, and WDR4 with overall survival.

Characteristics	Univariate analysis			Multivariate analysis		
	Hazard Ratio	95% CI	P value	Hazard Ratio	95% CI	P value
Gender	1.662	0.983-2.809	0.058			
Age	0.749	0.437-1.284	0.294			
HBV infection	1.080	0.599-1.946	0.798			
AFP ( $\mu\text{g/L}$ )	0.892	0.517-1.537	0.680			
Tumor Size (cm)	1.780	1.041-3.045	<b>0.035*</b>	1.490	0.839-2.646	0.174
TNM staging	2.277	1.342-3.864	<b>0.002*</b>	1.114	0.534-2.322	0.774
Multiple nodules	3.482	1.884-6.435	<b>&lt;0.001*</b>	1.368	0.592-3.161	0.463
BCLC stage	3.893	2.192-6.915	<b>&lt;0.001*</b>	2.198	1.010-4.782	<b>0.047*</b>
PVTT	2.735	1.535-4.873	<b>0.001*</b>	1.388	0.692-2.783	0.355
WDR4	4.097	2.163-7.759	<b>&lt;0.001*</b>	2.215	1.088-4.513	<b>0.028*</b>

HR, Hazard ratio; CI, Confidence interval. Bold italics indicate statistically significant values. \*P<0.05

**Supplementary Table S3** Online analysis website

website	URL
GEPIA	<a href="http://gepia.cancer-pku.cn/">http://gepia.cancer-pku.cn/</a>
UALCAN	<a href="http://ualcan.path.uab.edu/index.html">http://ualcan.path.uab.edu/index.html</a>
CCLE	<a href="https://portals.broadinstitute.org/ccle/about">https://portals.broadinstitute.org/ccle/about</a>
cBioPortal	<a href="https://www.cbioportal.org/">https://www.cbioportal.org/</a>
SIFT	<a href="http://provean.jcvi.org/index.php">http://provean.jcvi.org/index.php</a>
PolyPhen-2	<a href="http://genetics.bwh.harvard.edu/pph2/index.shtml">http://genetics.bwh.harvard.edu/pph2/index.shtml</a>
GnomAD	<a href="https://gnomad.broadinstitute.org/">https://gnomad.broadinstitute.org/</a>
HPA	<a href="https://www.proteinatlas.org/">https://www.proteinatlas.org/</a>
Ubibrowser	<a href="http://ubibrowser.ncpsb.org.cn/ubibrowser/home">http://ubibrowser.ncpsb.org.cn/ubibrowser/home</a>
TCGA-LIHC	<a href="https://portal.gdc.cancer.gov/">https://portal.gdc.cancer.gov/</a>
GEO(GSE105130)	<a href="https://www.ncbi.nlm.nih.gov/geo/">https://www.ncbi.nlm.nih.gov/geo/</a>

**Supplementary Table S4** Primer sequences, siRNAs and shRNA used in this study.

Primer name		Sequence (5'-3')
WDR4	F	TCTCCAAGTCTGGCCGCTAT
	R	CGCACCACCATCCTGACACT
CCNB1	F	GCACTTTCCTCCTTCTCA
	R	CGATGTGGCATACTTGTT
MYC	F	GTCAAGAGGCGAACACACAAC
	R	TTGGACGGACAGGATGTATGC
E-cadherin	F	CGAGAGCTACACGTTACGG
	R	GGGTGTCGAGGGAAAAATAGG
N-cadherin	F	AGCCAACCTTAACTGAGGAGT
	R	GGCAAGTTGATTGGAGGGATG
Vimentin	F	GACGCCATCAACACCGAGTT
	R	CTTTGTCGTTGGTTAGCTGGT
Fibronectin	F	TTATGACGACGGGAAGACCT
	R	GCTGGATGGAAAGATTACTC
GAPDH	F	GGTGAAGGTCGGAGTCAACG
	R	TGGGTGGAATCATATTGGAACA
WDR4 Primer1	F	GAGGAGTCTGCTATCAAGTAA
	R	TCACGAGGTCAGGAGATG
WDR4 Primer2	F	CTGCCAACGCTAATACCA
	R	TGCCACCTCAATGAATCG
si-NC		UUCUCCGAACGUGUCACGUTT
siWDR4-1		GGACGUGGCUUUCGAGGAG
siWDR4-2		GCAGACAGCAGUUGGUGUA
siCCNB1-1		CCATTATTGATCGGTTTCAT
siCCNB1-2		CCACATCGAAGCATGCTAA
siMYC-1		GAGGUAUCUGGAAGAAUUTT
siMYC-2		GGAACAAGAAGAUGAGGAATT
si EIF2A-1		GAUGUAGUUUGGAAUUCUAGU
si EIF2A-2		GGUGCACCUUCAUUUGUUAGA
shWDR4-1		GCACCGTGTTAAAGAAAGTCT
shWDR4-2		AGAGTTTGTGAGCCGTATCTC
Sh-Ctrl		TTCTCCGAACGTGTCACGT

**Supplementary Table S5 Primary antibodies used in this study**

Antigens	Manufacturer	Catalog Number	Application
WDR4	Abcam	ab169526	1:1000 for WB; 1:500 for IHC
WDR4	Abcam	ab241297	IP
CCNB1	Proteintech	55004-1-AP	IP
CCNB1	Proteintech	67686-1-Ig	1:1000 for WB
$\beta$ -actin	Proteintech	66009-1-Ig	1:1000 for WB
GAPDH	Proteintech	60004-1-Ig	1:10000 for WB
MYC	Proteintech	67447-1-Ig	1:1000 for WB
EIF2A	Proteintech	11233-1-AP	IP
EIF2A	Proteintech	66482-1-Ig	1:1000 for WB
Fibronectin	Proteintech	15613-1-AP	1:1000 for WB; 1:500 for IHC
Vimentin	Proteintech	10366-1-AP	1:1000 for WB; 1:500 for IHC
E-cadherin	Proteintech	20874-1-AP	1:1000 for WB; 1:500 for IHC
N-cadherin	Proteintech	22018-1-AP	1:1000 for WB; 1:500 for IHC
CDC25	Proteintech	16485-1-AP	1:1000 for WB
P21	Proteintech	10355-1-AP	1:1000 for WB
Caspase 3	Proteintech	19677-1-AP	1:1000 for WB
Caspase 7	Proteintech	27155-1-AP	1:1000 for WB
Caspase 9	Proteintech	10380-1-AP	1:1000 for WB
7-Methylguanosine	Biovision	6655-100	Me-RIP
IgG	Servicebio	GB23303	IP
IgG	Servicebio	GB23301	IP
HRP	IPKine	A25222	IP