

Table S1. Association between SMURF1 expression (0-4 vs. 6-12) and the clinicopathological parameters in the GC cohort.

Clinicopathological parameters	Total	SMURF1		χ^2	<i>p</i> value
		High expression (>4)	Low expression (≤4)		
Gender				1.316	0.251
Male	70	25	45		
Female	36	17	19		
Age (years)				1.150	0.284
< 60	42	14	28		
≥ 60	64	28	36		
Tumor location				0.095	0.758
Upper	70	27	43		
Middle/lower	36	15	21		
Tumor Size (cm)				4.009	0.045
< 6	48	14	34		
≥ 6	58	28	30		
Tumor metastasis					
T1/T2	28	11	17	0.002	0.966
T3/T4	78	31	47		
Tumor differentiation					
Well/moderate	41	17	24	0.095	0.758
Poor/undifferentiated	65	25	40		
Lymph node metastasis				0.288	0.592
N0	23	8	15		
N1-3	83	34	49		
pTNM stage				0.051	0.822
I/II	34	14	20		
III/IV	72	28	44		

Table S2. Univariate and multivariate analyses assessing the correlation between the clinicopathological features, SMURF1 expression, and overall survival.

Clinicopathological parameters	Univariate analysis		Multivariate analysis	
	HR (95%CI)	<i>p</i> value	HR (95%CI)	<i>p</i> value
Gender (male vs. female)	1.099 (0.617-1.957)	0.750		
Age (≥ 60 vs. < 60 years)	1.272 (0.732-2.212)	0.393		
Tumor location (upper vs. middle/lower)	1.153 (0.643-2.068)	0.634		
Tumor size (≥ 6 vs. < 6 cm)	0.682 (0.400~1.164)	0.161		
Tumor invasion depth (T3/T4 vs. T1/T2)	1.578 (0.827~3.008)	0.166		
Differentiation (poor/undifferentiated vs. well/moderate)	1.648 (0.918~2.957)	0.094		
Lymph node metastasis (N1-3 vs. N0)	3.713 (1.474~9.353)	0.005	3.427 (1.165~10.088)	0.025
pTNM stage (III/IV vs. I/II)	1.967 (1.034~3.739)	0.039		
SMURF1 expression (high vs. low)	1.849 (1.081~3.162)	0.025	1.754 (1.023~3.008)	0.041

Table S3. Primary and secondary antibodies.

Antibodies	Supplier	Catalog number	Dilution
AMOTL2	ABclonal	A16723	1:1000 (WB); 1:200 (IHC)
SMURF1	Abcam	ab300408	1:1000 (WB)
	Sigma	HPA055245	1:100 (IHC)
CD31	Abcam	ab28364	1:50 (IHC)
GAPDH	Sangon Biotech	D110016	1:1000
HA-tag	ABclonal	AE008	1:1000
Flag-tag	ABclonal	AE005	1:1000
His-tag	ABclonal	AE003	1:1000
GST-tag	ABclonal	AE001	1:1000
YAP1	ABclonal	A1002	1:1000
CYR61	ABclonal	A1111	1:1000
CTGF	ABclonal	A11067	1:1000
Phospho-YAP1 (S127)	Abcam	ab76252	1:1000
Lamin B1	ABclonal	A1910	1:1000
EphA2	ABclonal	A23177	1:1000
VEGFA	Proteintech	19003-1-AP	1:1000
VEGF Receptor 2	CST	2479	1:1000
VEGFC	ABclonal	A23163	1:1000
VEGF Receptor 3	ABclonal	A5603	1:1000
MMP2	Proteintech	10373-2-AP	1:1000
MMP9	Proteintech	10375-2-AP	1:1000
HIF1α	Proteintech	20960-1-AP	1:1000
BMP2	ABclonal	A0231	1:1000
BMPR2	ABclonal	A5666	1:1000
TGF-β1	ABclonal	A25313	1:1000
Smad2/3	ABclonal	A18674	1:1000
Phospho-Smad2 (S465/S467) + Smad3 (S423/S425)	ABclonal	AP1343	1:1000
Smad1/5/9	ABclonal	A23208	1:1000
Phospho-Smad1 (S463/S465)+Smad5 (S463/S465)+Smad9 (S465/S467)	ABclonal	AP1518	1:1000
Smad4	ABclonal	A19116	1:1000
TGF-β Receptor I (TGFB1)	ABclonal	A0708	1:1000
TGF-β Receptor II (TGFB2)	ABclonal	A1415	1:1000
Phospho-TGF-β Receptor II (S225)	Abcam	ab183037	1:2000
E-cadherin	Proteintech	20874-1-AP	1:1000
N-cadherin	ABclonal	A19083	1:1000
Snail	ABclonal	A11794	1:1000

Vimentin	ABclonal	A19607	1:1000
CDK1	MCE	HY-P80611	1:1000
CDK2	MCE	HY-P80076	1:1000
CDK4	Abcam	ab108357	1:1000
CDK6	Abcam	ab124821	1:1000
Cyclin A1	MCE	HY-P80631	1:1000
Cyclin B1	MCE	HY-P80632	1:1000
Cyclin D1	Abcam	ab134175	1:1000
CDC25C	Abcam	ab32444	1:1000
p27	Abcam	ab32034	1:1000
β-catenin	Zen-bio	R22820	1:1000
Src	CST	2123T	1:1000
Phospho-Src (Y416)	CST	6943T	1:1000
ERK1/2	Proteintech	51068-1-AP	1:1000
Phospho-ERK1/2 (T202/Y204)	Proteintech	28733-1-AP	1:1000
ubiquitin	Proteintech	10201-2-AP	1:1000
Ki67	CST	12202S	1:200 (IHC)
Ki67	Maxim	MAB-0672	1:100 (IHC)
LYVE-1	Abcam	ab219556	1:1000 (WB); 1:100 (IHC)
Goat Anti-Rabbit	Sangon Biotech	D110058	1:5000
Goat Anti-mouse	Sangon Biotech	D110087	1:5000
Fc-specific secondary antibodies	Abmart	M21008S	1:5000

Table S4. Core sequences of 18 luciferase reporters.

	Signaling pathways	Transcription factors	Response element
1	MAPK/JNK	AP1	TGACTCATGACTAA
2	Cell cycle	E2F1	TTTGGCGCGTAATTTGGCGCGTAATTTGGCGCG TAA
3	MAPK/ERK	ELK1	TTTGCAAAATGCAGGAATTGTTTTCACAGTACC GGAAGT
4	Hypoxia	HIF1	GTGACTACGTGCTGCCTAGTTACGTGC
5	c-Myc	Myc	CACGTGCACATGG
6	NF-κB	NF-κB	GGGAATTTCCGGGGACTTTCCCGGGAATTTGC GGGGGACTTTCCGGGAATTTGGGAATTTCCCG GGGATTCCCCGGGGAATCCCC
7	Notch	RBP-Jκ	CGTGGGAAAGTGGGAACGGCATTGTAGCG
8	TGF-β1	Smad	GTCTAGACAGCCAGACA
9	Wnt	TCF/LEF	AGATCAAAGGGGGTACCTTTGATCTT
10	p53	p53	GAACATGTCTAAGCATGCTGTGCCTTGCCTGG ACTTGCCTGGACATGCCCGGGCATGT
11	Amino Acid deprivation	ATF2/3/4	ATGAGGTCATATGACGTCATAACATTGCATCAT CCCCGCAACATTGCATCATCCCCGCATGATGCA ATATGATGCAAT
12	ATF6	ATF6	TGATGACGTGGCATTTCATCGAGACAGGTGCTG ACGTGGCA
13	cAMP/PKA	CREB	TGATGTCAGCACCAGACAGTGACGTCATGGCC GTCATGACGTCACCCCATTGACGTCAATGGGA GAACTGATGTCACGAGGATATTGACGTCATGA CGTCATGACGTCATGACGTCACAAGATCTG
14	Early Growth Response	EGR1	CGCCCCCGCGACGCCACGC
15	PKC/Ca2+	NFAT	GGAGGAAAAACTGTTTCATACAGAAGGCGTAT TTTCCAAATGGAAAAT
16	Antioxidant Response	Nrf1/2	ATGACTCAGCATGCGCACGCGCGGTACCTCA CAGTGACTCAGCATTTAAACACAGTGACTCAA TGACTCAGCATGCGCACGCGCGGCATTAAAC ACAGTGACTCAGCATTAAGAGCTCGCTAGC
17	Interferon gamma /Type I Interferon	STAT1/2	GGAAAACGAAACTGCATTTCCCGGAAACCATG TTATGCATATTCTGTAAAGTGTTCAGGAAAT CAGTTTCTTTTCC
18	STAT3	STAT3	CTTCTGGGAAATGCTTCCCGAACGTATTTCCCG TAAATCGTCGAAGCTTCCTTCTGGGAAA