

Supplementary Files

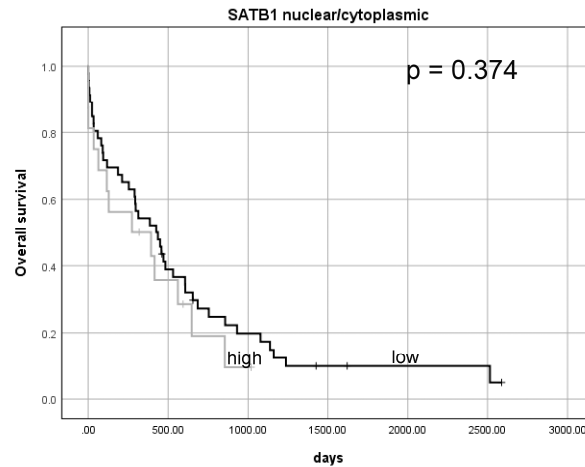


Figure S1. Kaplan-Meier curve for overall survival in patients pancreatic ductal adenocarcinomas by nuclear/cytoplasmic SATB1 protein expression. P value was calculated using the log-rank test.

Table S1. Univariate analysis of prognostic factors by Cox proportional hazard model in own cohort for cytoplasmic β -catenin protein expression.

Variable	Univariate analysis of own cohort			
	HR	95% CI		P value
		lower	upper	
SATB1 ^{nuclear/cytoplasmic}	1.33	0.71	2.52	0.38

Abbreviations: CI, confidence interval; HR, hazard ratio

Table S2. Multivariate analysis of prognostic factors by Cox proportional hazard model in own cohort for cytoplasmic β -catenin protein expression.

Variable	Multivariate analysis of own cohort			
	HR	95% CI		P value
		lower	upper	
SATB1 ^{nuclear/cytoplasmic}	1.38	0.66	2.85	0.4
age	1.05	1.01	1.09	0.026
TNM stage	2.51	1.24	5.05	0.01
LVI	2.67	1.37	5.21	0.004

Significant p-values ($p < 0.05$) are marked in bold. Abbreviations: CI, confidence interval; HR, hazard ratio; LVI—vascular invasion. HR: adjusting for age, TNM stage, VI.

Table S3. Parameters of network determined using the network analyzer Cytoscape plugin.

GENE	AVERAGE SHORTEST PATH LENGTH	BETWEENNESS CENTRALITY	CLOSENESS CENTRALITY	CLUSTERING COEFFICIENT	DEGREE	RADIALITY	STRESS
APC	1.509	0.018	0.663	0.545	26.000	0.990	310.000
TBL1X	1.792	0.001	0.558	0.742	12.000	0.985	34.000

SKP1	1.736	0.003	0.576	0.670	14.000	0.986	64.000
BCL9	1.774	0.002	0.564	0.769	13.000	0.985	36.000
JUN	1.396	0.015	0.716	0.605	32.000	0.992	404.000
EGFR	1.302	0.043	0.768	0.468	37.000	0.994	772.000
SRC	1.491	0.013	0.671	0.618	27.000	0.991	288.000
CDH5	1.717	0.003	0.582	0.714	15.000	0.986	74.000
CDH3	1.774	0.002	0.564	0.782	13.000	0.985	34.000
IQGAP1	1.736	0.003	0.576	0.724	15.000	0.986	58.000
CDH2	1.453	0.024	0.688	0.522	29.000	0.991	442.000
TCF7L1	1.679	0.004	0.596	0.669	17.000	0.987	98.000
CTNND1	1.679	0.005	0.596	0.686	18.000	0.987	96.000
SMAD4	1.377	0.030	0.726	0.581	33.000	0.993	680.000
LEF1	1.415	0.024	0.707	0.555	31.000	0.992	438.000
CDH1	1.321	0.042	0.757	0.479	36.000	0.994	716.000
TCF7L2	1.434	0.028	0.697	0.494	30.000	0.992	472.000
TCF7	1.623	0.007	0.616	0.632	20.000	0.988	148.000
HDAC1	1.377	0.028	0.726	0.527	33.000	0.993	536.000
CTNNA1	1.698	0.004	0.589	0.684	17.000	0.987	86.000
CTNNBIP1	1.868	0.001	0.535	0.679	8.000	0.983	18.000
DVL1	1.698	0.002	0.589	0.775	16.000	0.987	62.000
BTRC	1.528	0.010	0.654	0.637	25.000	0.990	224.000
AXIN2	1.604	0.006	0.624	0.690	21.000	0.988	142.000
AXIN1	1.472	0.017	0.679	0.579	28.000	0.991	350.000
GSK3B	1.396	0.022	0.716	0.550	32.000	0.992	464.000
CTNNB1	1.019	0.161	0.981	0.363	52.000	1.000	1816.000
AR	1.585	0.004	0.631	0.766	22.000	0.989	112.000
CREBBP	1.415	0.019	0.707	0.578	31.000	0.992	408.000
EP300	1.396	0.022	0.716	0.563	32.000	0.992	452.000
ERBB2	1.509	0.017	0.663	0.566	26.000	0.990	310.000
SP1	1.717	0.000	0.582	0.924	15.000	0.986	16.000
SMAD3	1.415	0.026	0.707	0.591	31.000	0.992	588.000
RUNX2	1.604	0.004	0.624	0.705	21.000	0.988	124.000
E2F4	1.792	0.000	0.558	0.891	11.000	0.985	12.000
TCF4	1.774	0.002	0.564	0.731	13.000	0.985	42.000
FOXO3	1.642	0.002	0.609	0.842	19.000	0.988	54.000
SMARCA4	1.604	0.008	0.624	0.662	21.000	0.988	154.000
FOXO1	1.623	0.004	0.616	0.758	20.000	0.988	96.000
SMURF2	1.792	0.003	0.558	0.764	11.000	0.985	94.000
TGFBR1	1.717	0.008	0.582	0.629	15.000	0.986	216.000
CDC73	1.849	0.000	0.541	0.889	9.000	0.984	8.000
KLF4	1.604	0.004	0.624	0.738	21.000	0.988	114.000
YWHAZ	1.736	0.005	0.576	0.538	14.000	0.986	92.000
RUVBL1	1.811	0.003	0.552	0.673	11.000	0.984	36.000

VCL	1.755	0.001	0.570	0.824	14.000	0.985	32.000
SLC9A3R1	1.887	0.001	0.530	0.762	7.000	0.983	10.000
EZR	1.792	0.001	0.558	0.818	12.000	0.985	24.000
CTNNA3	1.811	0.002	0.552	0.745	11.000	0.984	28.000
CTNNA2	1.792	0.003	0.558	0.667	12.000	0.985	44.000
PSEN1	1.811	0.001	0.552	0.756	10.000	0.984	26.000
SATB1	1.887	0.000	0.530	1.000	7.000	0.983	0.000
PITX2	1.887	0.000	0.530	1.000	6.000	0.983	0.000
ZFYVE9	2.226	0.000	0.449	1.000	4.000	0.976	0.000

Table S4. Immunohistochemical expression of cytoplasmic β -catenin proteins and their relationship with clinicopathological features of PDAC patients.

Variables	n (%)	β-catenin cytoplasmic expression		P value
		low n = 49	high n = 19	
Age (years)				
≤ 60	29 (42.65)	23 (79.31)	6 (20.69)	0.29
> 60	39 (57.35)	26 (66.67)	13 (33.33)	
Gender				
Male	34 (50.00)	23 (67.65)	11 (32.35)	0.59
Female	34 (50.00)	26 (76.47)	8 (23.53)	
Grading				
G1	5 (7.35)	3 (60.00)	2 (40.00)	0.64
G2	55 (80.88)	41 (74.55)	14 (25.45)	
G3	8 (11.77)	5 (62.50)	3 (37.50)	
pT status				
T1-T2	53 (84.13)	37 (69.81)	16 (30.19)	>0.99
T3-T4	10 (15.87)	7 (70.00)	3 (30.00)	
pN status				
N0	30 (45.46)	20 (66.67)	10 (33.33)	0.41
N1-N2	36 (54.54)	28 (77.78)	8 (22.22)	
TNM stage				
I	24 (38.71)	15 (62.50)	9 (37.50)	0.49
II	24 (38.71)	18 (75.00)	6 (25.00)	
III-IV	14 (22.58)	11 (78.57)	3 (21.43)	
Location				
head	60 (88.24)	44 (73.33)	16 (26.67)	0.68
body and tail	8(11.77)	5(62.5)	3(37.5)	
PNI				
Absent	22 (34.38)	16 (72.73)	6 (27.27)	>0.99
Present	42 (65.62)	30 (71.43)	12 (28.57)	

LVI

Absent	39 (62.90)	27 (69.23)	12 (30.77)	
Present	23 (37.10)	17 (73.91)	6 (26.09)	0.78

Abbreviations: LVI—vascular invasion; PNI—perineural invasion

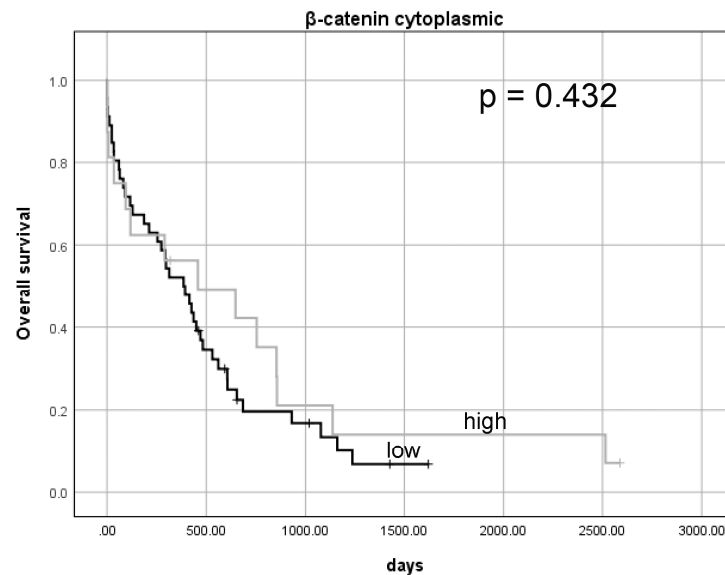


Figure S2. Kaplan-Meier curve for overall survival in patients pancreatic ductal adenocarcinomas by cytoplasmic β -catenin protein expression. P value was calculated using the log-rank test.

Table S5. Univariate analysis of prognostic factors by Cox proportional hazard model in own cohort for cytoplasmic β -catenin protein expression.

Variable	Univariate analysis of own cohort			
	HR	95% CI		P value
		lower	upper	
β -catenin ^c	0.78	0.41	1.46	0.434

Abbreviations: CI, confidence interval; HR, hazard ratio

Table S6. Multivariate analysis of prognostic factors by Cox proportional hazard model in own cohort for cytoplasmic β -catenin protein expression.

Variable	Multivariate analysis of own cohort			
	HR	95% CI		P value
		lower	upper	
β -catenin ^c	0.98	0.49	1.97	0.95
age	1.04	1.0	1.09	0.029
TNM stage	2.4	1.18	4.9	0.016
LVI	2.63	1.36	1.36	0.004

Significant p-values ($p < 0.05$) are marked in bold. Abbreviations: CI, confidence interval; HR, hazard ratio; LVI—vascular invasion. HR: adjusting for age, TNM stage, VI.