

Supplementary Table S1. Characteristics of the corresponding shRNA sequences included in the context.

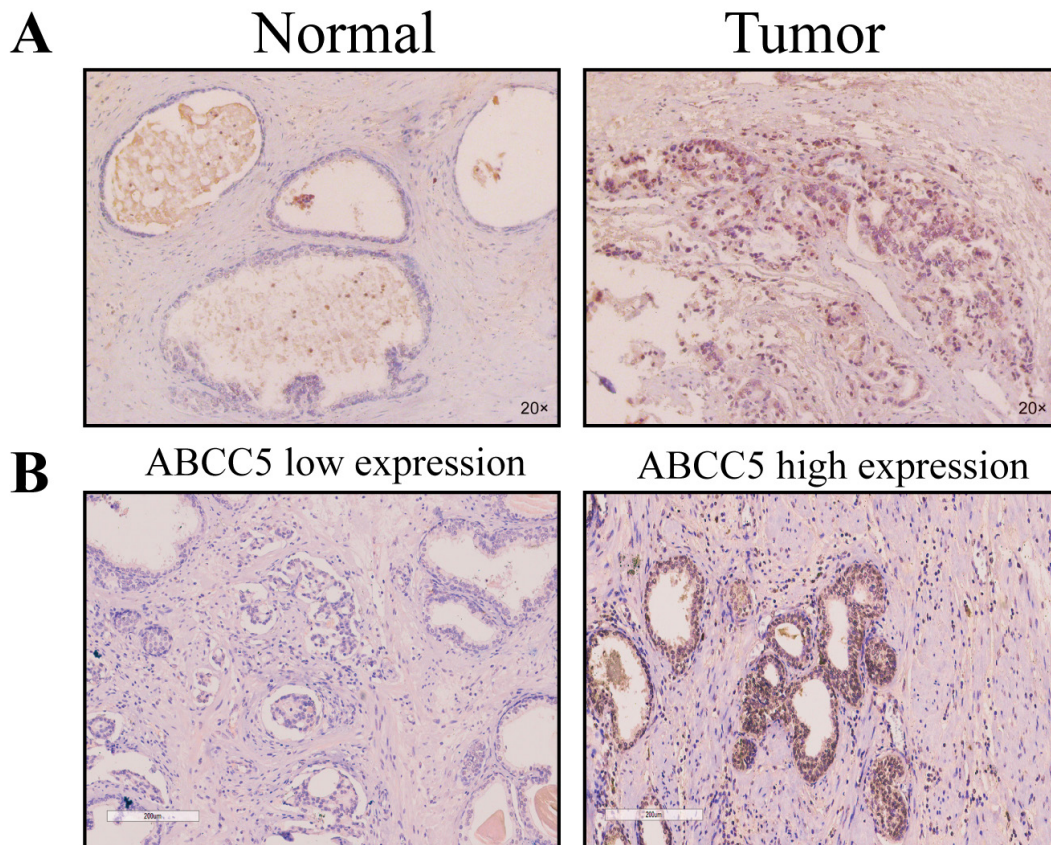
shRNA	Sequence (5' to 3'')
shABCC5-#1	CCGGCACCGCCAGTTGAGATCAATTCTCGAGAATTGATCTCAAC TGGCGGTGTTTTTG
shABCC5-#2	CCGGTCTGTCGCCTTAGCATGTTTGCTCGAGCAAACATGCTAAG GCGACAGATTTTTG
shCDK1-#1	CCGGGGAACCTCGTCATCCAAATATCTCGAGATATTTGGATGAC GAAGTTCCTTTTTG
shRNA-NC	CCGAATTACTCCTAGAACCGC

Supplementary Table S2. Characteristics of the corresponding qPCR primers included in the context.

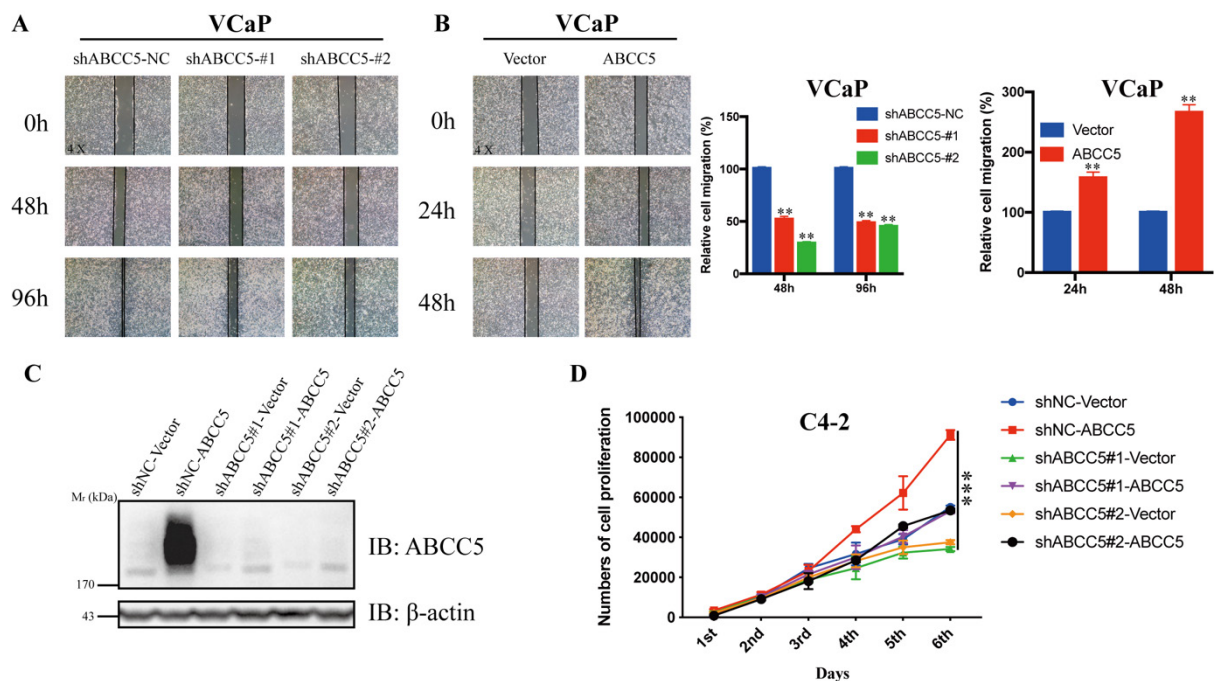
Genes	Forward primer	Reverse primer
ABCC5	GAAGAAAGATACAACTCTGTGCT G	GGATGTAGATGCTCCTGTAC
AR	CATTGAGCCAGGTGTAGTGTGTG	TGGAGTTGACATTGGTGAAGG AT
ALDH1	AGCCATAACAATCTCCTCTGCT	ACCGTACTCTCCCAGTTCTC
TMPRSS2	CAGGAGTGTACGGGAATGTGAT GGT	GATTAGCCGTCTGCCCTCATTT GT
PSA	ACGCTGGACAGGGGGCAAAG	GGGCAGGGCACATGGTTCACT
CDK1	TACACATGAGGTAGTAACACTCT G	AGTCCTGTAAAGATTCCACTTC TG

Supplementary Table S3. Characteristics of the corresponding antibodies included in the context

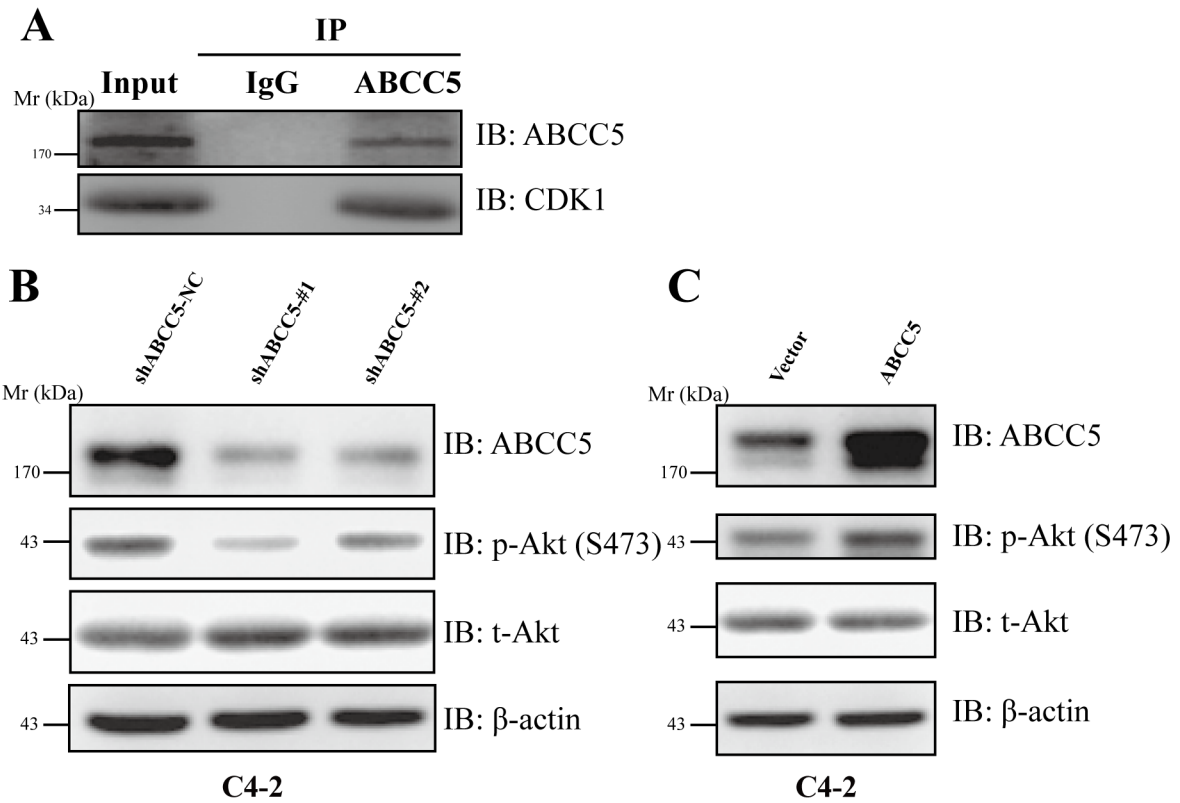
Protein	Assay	Antibody	Origin	Dilution	Incubation period
ABCC5	IHC, WB, IF	AA7906N, Invitrogen	Rabbit	1:200, 1:2000 1:200	overnight, 4°C
CDK1	IHC, WB, IF	19532-1-AP, Proteintech	Rabbit	1:100, 1:10000, 1:200	overnight, 4°C
p-AR ser 81	WB	07-1375, Millipore	Rabbit	1:2000	overnight, 4°C
AR	WB	22089-1-AP, Proteintech	Rabbit	1:2000	overnight, 4°C
p-ERK 1/2- S217/221	WB	9911T, CST	Rabbit	1:2000	overnight, 4°C
ERK1/2	WB	16443-1-AP, proteintech	Rabbit	1:2000	overnight, 4°C
$\beta$ -actin	WB	TA-09, ZSGB Bio	Mouse	1:10000	overnight, 4°C



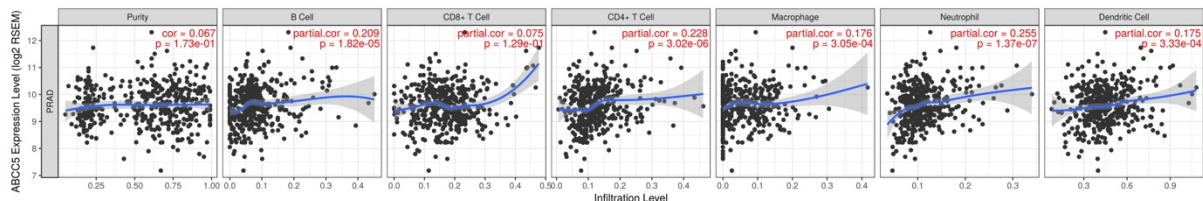
**Supplementary figure 1. Representative IHC images of ABCC5 in IUPU-PRAD.** IHC, immunohistochemistry; IUPU-PRAD, Institute of Urology, Peking University prostate cancer.



**Supplementary figure 2. Rescue experiment of ABCC5 in prostate cancer.** A-B. F-G. Wound healing assay, Representative images of wound-induced cell migration by the VCaP-shABCC5 (A), VCaP-ABCC5 (B) and control cells (4x, left). Quantification of migration by the described cells (right). C. ABCC5 protein expression in shABCC5-ABCC5 rescued cells and control cells. D. MTS cell proliferation assay in shABCC5-ABCC5 rescued cells and control cells.



**Supplementary figure 3. ABCC5 interacts with CDK1 and activates p-Akt signaling pathway.** A. The result of endogenous immunoprecipitation revealed that ABCC5 binds to CDK1 at the protein level ( $p < 0.01$ ). K-L. Knockdown and overexpression of ABCC5 can inhibit and activate the p-Akt pathway in prostate cancer cells, respectively.



**Supplementary figure 4. Correlation of ABCC5 mRNA expression and other immune cell infiltration in prostate cancer according to the TIMER algorithm.**