

**SUPPLEMENTARY TABLES**

**Supplementary Table 1. Univariate and multivariate analyses of clinicopathological characteristics and ACE2 expression for overall survival in KIRC patients from the TCGA dataset. (N=526)**

Variables	Total n= 526 (%)	Univariate analysis		Multivariate analysis	
		HR (95% CI)	P	HR (95% CI)	P
Age					
<60	245 (46.6%)	1 (Reference)		1 (Reference)	
≥60	281 (53.4%)	1.782 (1.299-2.445)	***	1.536(1.112-2.120)	**
Sex					
Female	183 (34.7%)	1(Reference)			
Male	343 (65.2%)	0.960 (0.702-1.314)	0.799		
TNM Stage					
I+II	318 (60.5%)	1 (Reference)		1 (Reference)	
III+IV	205 (38.9%)	3.924 (2.843-5.416)	***	5.409 (2.871-10.192)	***
Missing	3 (0.6%)				
T Stage					
T1+T2	336 (63.9%)	1 (Reference)		1 (Reference)	
T3+T4	190 (36.1%)	3.259 (2.395-4.435)	***	0.495 (0.268-0.914)	*
Tumor grade					
G1+G2	239 (45.4%)	1 (Reference)		1 (Reference)	
G3	279 (53.1%)	2.769 (1.953-3.926)	***	1.773 (1.224-2.567)	**
Missing	8 (1.5%)				
ACE2 Expression					
Low	263 (50%)	1 (Reference)		1 (Reference)	
High	263 (50%)	0.486 (0.355-0.666)	***	0.534 (0.388-0.737)	***

Characteristics with significant *P* values in univariate analysis were screened in multivariate analysis. HR, hazard ratio; CI, confidence interval; TNM, tumor-node-metastasis; KIRC, kidney renal clear cell carcinoma. \* *P*<0.05; \*\* *P*<0.01; \*\*\* *P*<0.001.

**Supplementary Table 2. Univariate and multivariate analyses of clinicopathological characteristics and ACE2 expression for overall survival in KIRP patients from the TCGA dataset. (N=285)**

Variables	Total n=285 (%)	Univariate analysis		Multivariate analysis	
		HR (95% CI)	P	HR (95% CI)	P
Age					
<60	118 (41.4%)	1 (Reference)			
≥60	165 (57.9%)	1.057 (0.571-1.958)	0.860		
Missing	2 (0.7%)				
Sex					
Female	76 (26.7%)	1(Reference)			
Male	209 (73.3%)	0.609 (0.316-1.173)	0.138		
TNM Stage					
I+II	202 (70.9%)	1 (Reference)		1 (Reference)	
III+IV	65 (22.8%)	6.747 (3.503-12.995)	***	6.061 (2.610-14.076)	***
Missing	18 (6.3%)				
T Stage					
T1+T2	233 (81.8%)	1 (Reference)		1 (Reference)	
T3+T4	48 (16.8%)	4.510 (2.399-8.478)	***	1.040 (0.452-2.397)	0.926
Missing	4 (1.4%)				
ACE2 Expression					
Low	142 (49.8%)	1 (Reference)		1 (Reference)	
High	143 (49.2%)	0.516 (0.276-0.964)	*	0.561 (0.286-1.102)	0.094

Characteristics with significant *P* values in univariate analysis were screened in multivariate analysis. HR, hazard ratio; CI, confidence interval; TNM, tumor-node-metastasis; KIRP, kidney renal papillary cell carcinoma. \**P*<0.05; \*\* *P*<0.01; \*\*\* *P*<0.001.

## **SUPPLEMENTARY FIGURE LEGENDS:**

**Supplementary Figure 1. The correlation between ACE2 expression and Copy Number Variation (A-B).** FDR, false discovery rate.

**Supplementary Figure 2. Correlation analysis between ACE2 and TMPRSS2 with clinical characteristics.** Sex, Race, Age, and TNM stage were analyzed in KIRC (A-B) and KIRP (C-D), respectively.

**Supplementary Figure 3. Survival analysis of 7-mutual co-expressed genes.**

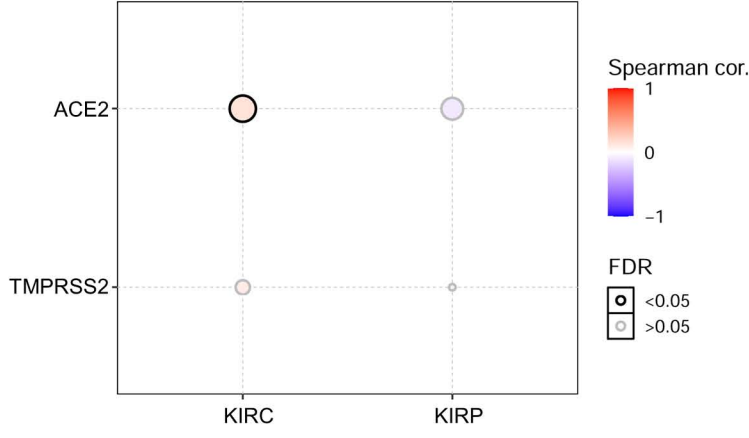
Kaplan–Meier survival curves of 7-mutual co-expressed genes with ACE2 in KIRC (A) and KIRP (B) patients, respectively.

**A**

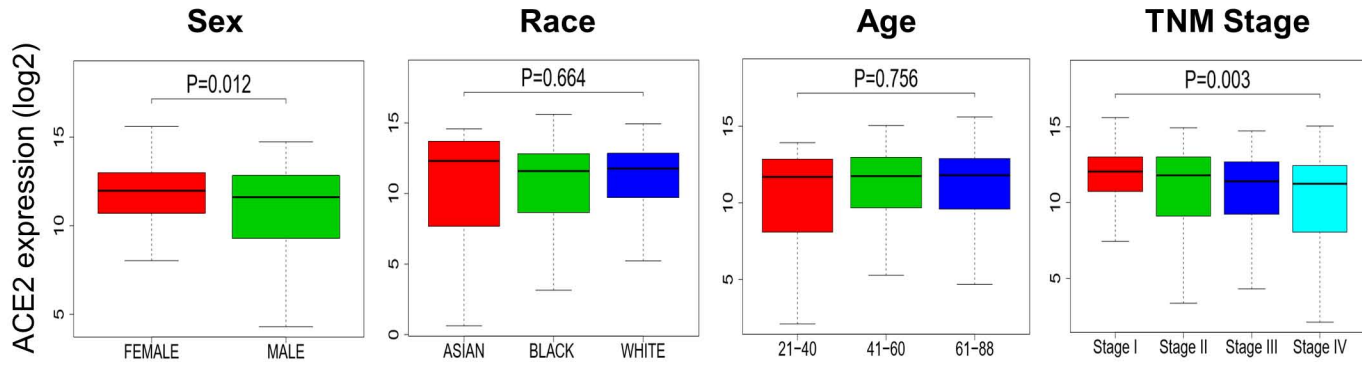
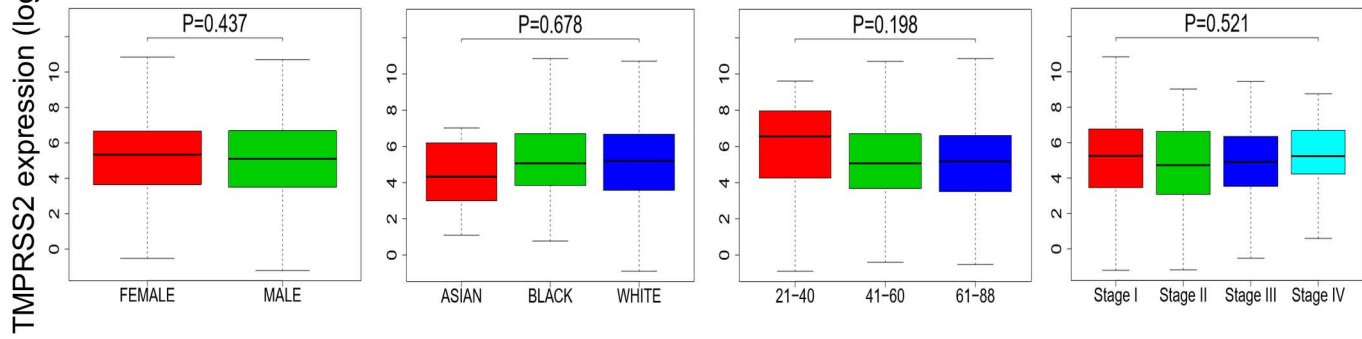
Gene symbol	Cancer type	Spearman correlation	FDR
ACE2	KIRC	-0.09	0.06
TMPRSS2	KIRC	-0.06	0.23
ACE2	KIRP	0.15	0.02
TMPRSS2	KIRP	0.10	0.16

**B**

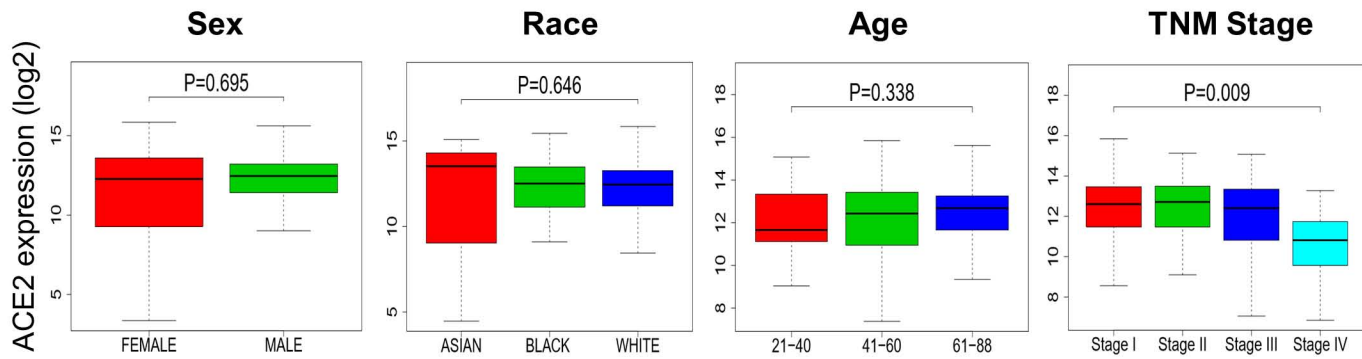
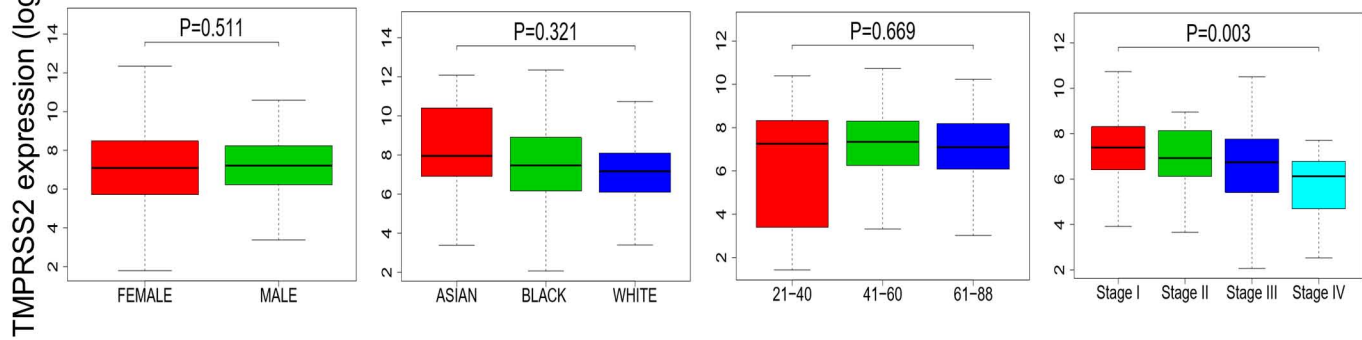
Correlations of CNV with mRNA expression

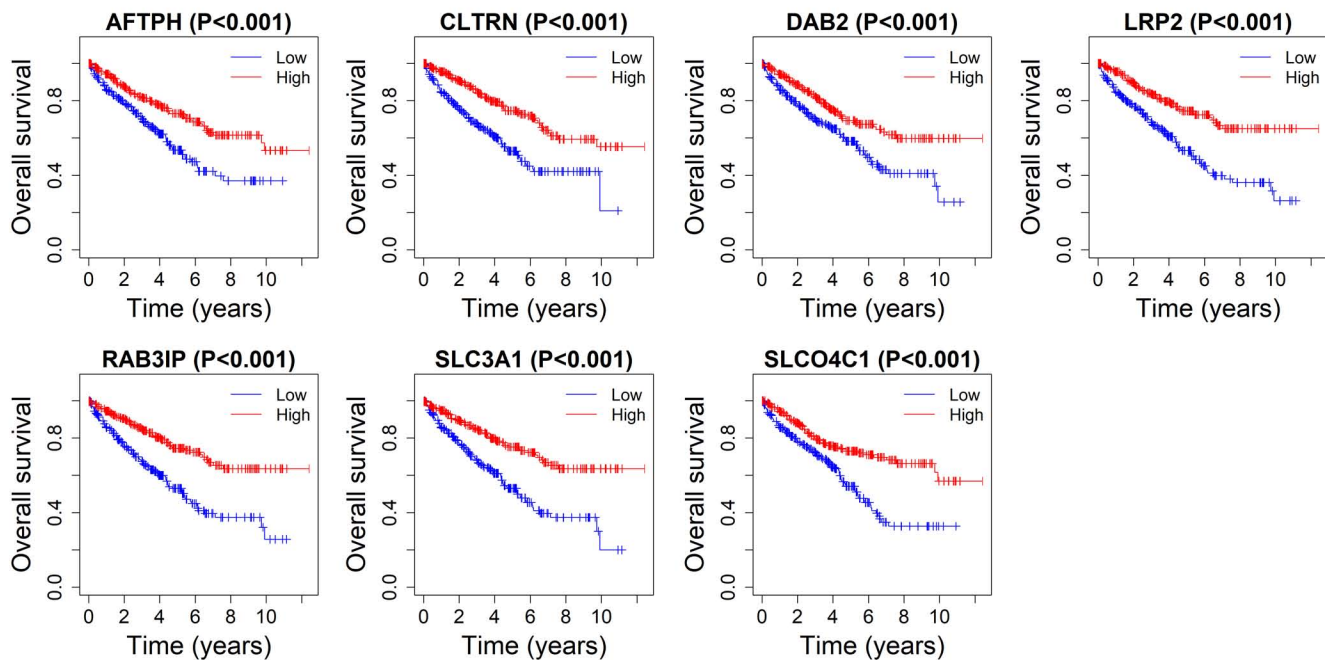


## KIRC

**A****B**

## KIRP

**C****D**

**A****KIRC****B****KIRP**