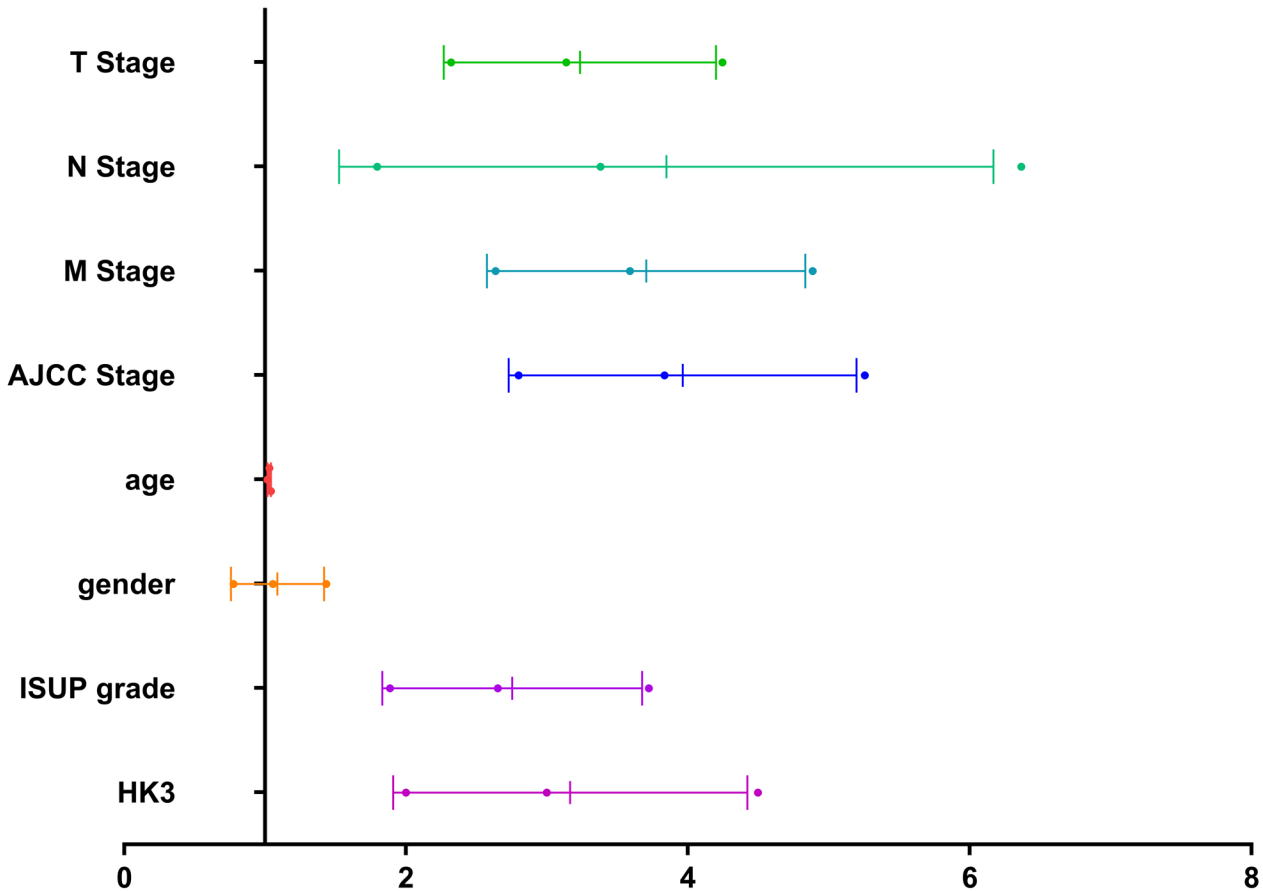


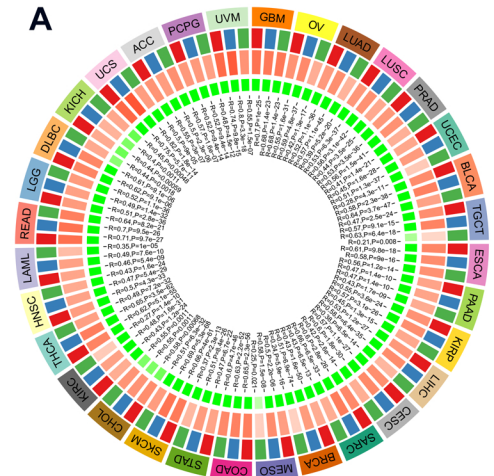
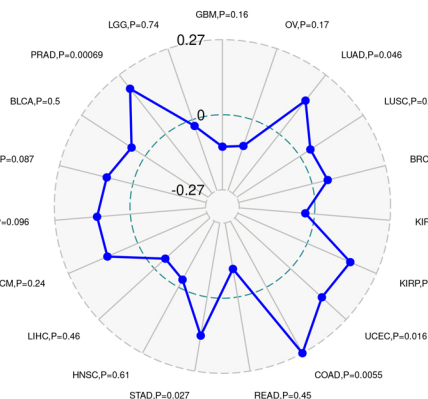
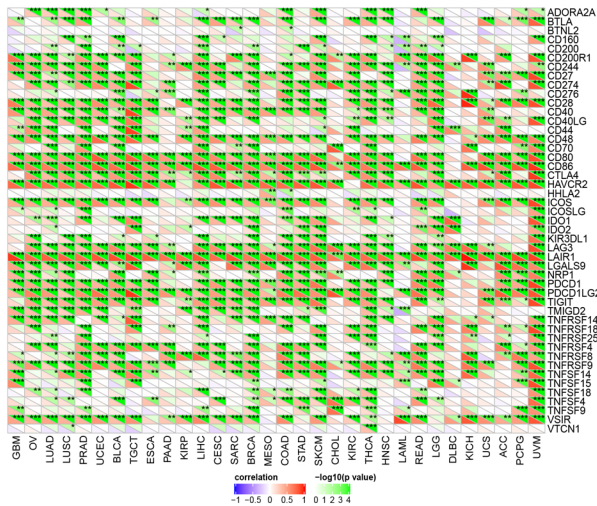
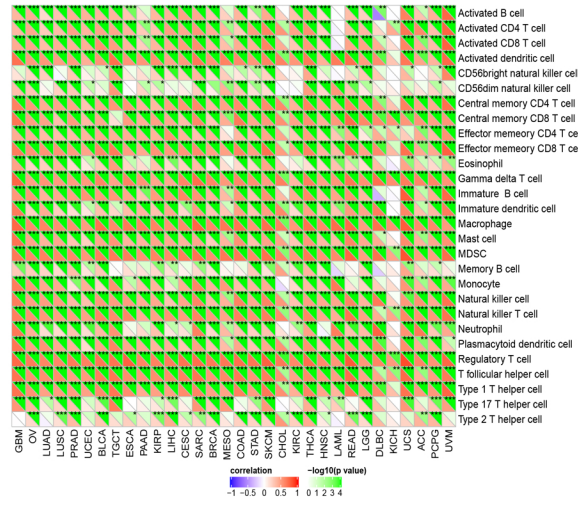
1 **Supplementary Figure 1.** Univariate Cox analysis suggested pathological TNM stage, AJCC stages, ISUP  
2 grade and HK3 expression as prognostic indicators in 533 ccRCC patients from TCGA cohort.

3

4 **Supplementary Figure 2.** *HK3* plays an important role in the immune microenvironment of various  
5 cancers.

6



**A****B****C****D**

**Supplementary Table 1.** Univariate Cox logistic regression analysis of PFS and OS in 377 ccRCC patients from FUSCC cohort (PFS: progression-free survival; OS: overall survival; ccRCC: clear cell renal cell carcinoma; FUSCC: Fudan University Shanghai Cancer Center)

Covariates	PFS			OS		
	HR	95% CI	<i>P</i> value	HR	95% CI	<i>P</i> value
Age	1.013	1.001-1.025	<b>0.029</b>	1.015	1.002-1.028	<b>0.027</b>
Lateral	1.029	0.783-1.352	0.838	0.981	0.719-1.339	0.903
BMI	0.905	0.813-1.051	0.091	0.947	0.886-1.011	0.076
pT stage (ref. T1-T2)	6.555	4.790-8.970	<b>&lt;0.001</b>	7.968	5.689-11.160	<b>&lt;0.001</b>
pN stage (ref. N0)	7.810	5.444-11.204	<b>&lt;0.001</b>	8.929	6.052-13.174	<b>&lt;0.001</b>
pM stage (ref. M0)	7.864	5.732-10.790	<b>&lt;0.001</b>	10.197	7.204-14.433	<b>&lt;0.001</b>
AJCC stage (ref. I-II)	9.670	7.027-13.307	<b>&lt;0.001</b>	12.994	9.066-18.624	<b>&lt;0.001</b>
ISUP grade (ref. 1-2)	2.742	2.049-3.670	<b>&lt;0.001</b>	3.370	2.372-4.788	<b>&lt;0.001</b>
HK3 expression (ref. Low)	2.852	2.131-3.817	<b>&lt;0.001</b>	2.999	1.999-4.497	<b>&lt;0.001</b>