

Figure S1. LASSO profile.

a. LASSO coefficient profiles of 4 genes for survival; b. LASSO analysis identified 4 genes for survival.

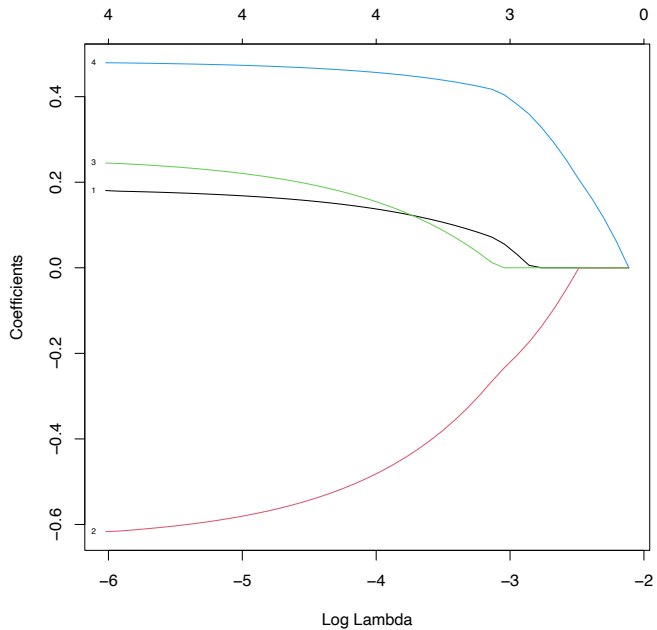
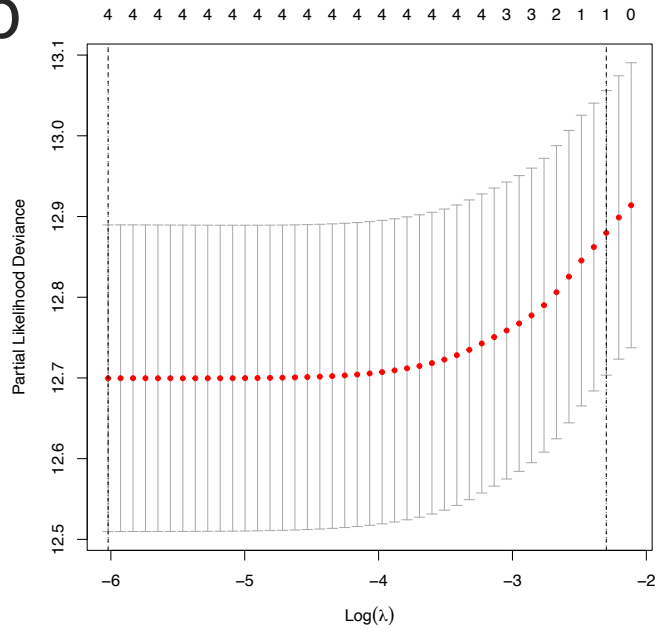
Figure S2. Survival analysis of ccRCC patients stratified by different clinicopathological features.

Figure S3. The expression of immune checkpoints genes between the high- and low-risk groups in external cohorts.

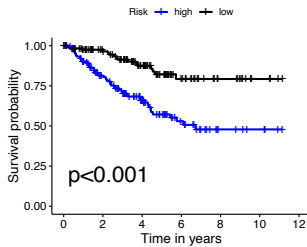
Figure S4. The expression of HLA family member genes between the high- and low-risk groups in external cohorts.

Figure S5. Subgroup analyses estimating prognostic value of risk score in different cancer types from TCGA data sets.

The length of horizontal line represents the 95% confidence interval for each group. The vertical box line represents the HR of all patients.

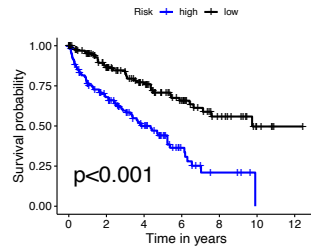
a**b**

Patients with age≤60 years



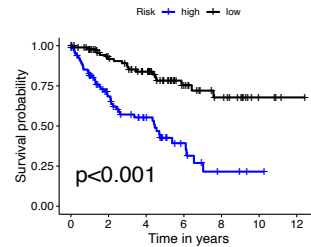
Risk high	139	93	52	23	8	4	0
Risk low	125	96	62	26	12	4	0
	0	2	4	6	8	10	12

Patients with age>60 years



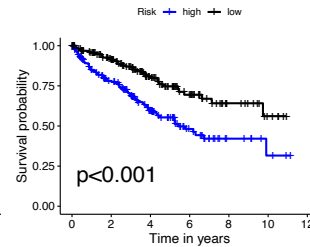
Risk high	124	70	39	13	4	0	0
Risk low	138	96	64	36	17	5	1
	0	2	4	6	8	10	12

Patients with Female



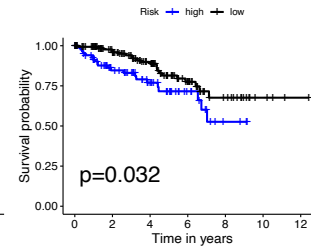
Risk high	85	44	27	10	3	1	0
Risk low	98	72	56	25	15	4	1
	0	2	4	6	8	10	12

Patients with Male



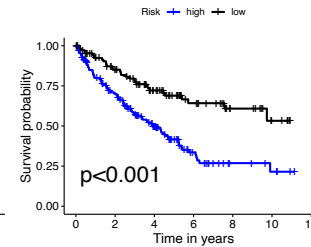
Risk high	178	119	64	26	9	3	0
Risk low	165	120	70	37	14	5	0
	0	2	4	6	8	10	12

Patients with G1-2



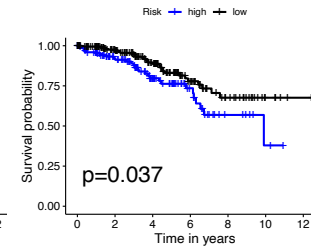
Risk high	89	54	33	15	4	0	0
Risk low	150	111	75	34	15	4	1
	0	2	4	6	8	10	12

Patients with G3-4



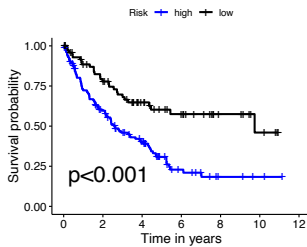
Risk high	170	107	57	20	7	4	0
Risk low	109	79	50	27	13	5	0
	0	2	4	6	8	10	12

Patients with Stage I-II



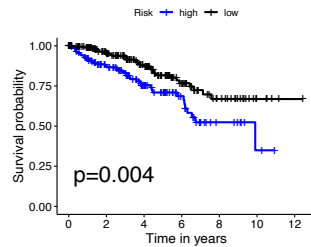
Risk high	129	91	51	24	8	2	0
Risk low	189	141	95	42	20	5	1
	0	2	4	6	8	10	12

Patients with Stage III-IV



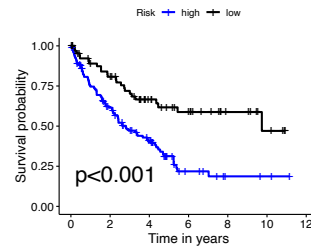
Risk high	134	72	40	12	4	2	0
Risk low	74	51	31	20	9	4	0
	0	2	4	6	8	10	12

Patients with T1-2



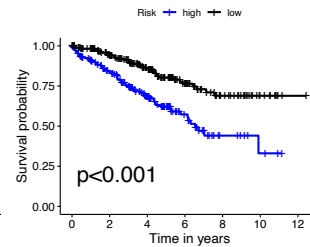
Risk high	141	96	55	27	9	2	0
Risk low	195	143	97	43	20	5	1
	0	2	4	6	8	10	12

Patients with T3-4



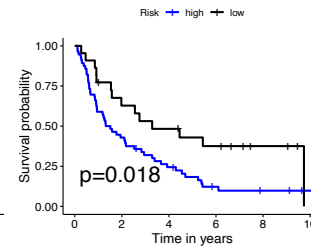
Risk high	122	67	36	9	3	2	0
Risk low	68	49	29	19	9	4	0
	0	2	4	6	8	10	12

Patients with M0



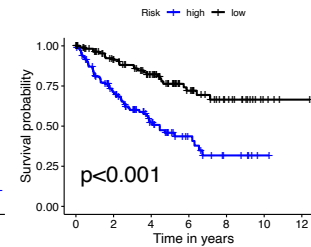
Risk high	189	134	75	30	9	3	0
Risk low	229	177	116	55	26	9	1
	0	2	4	6	8	10	12

Patients with M1



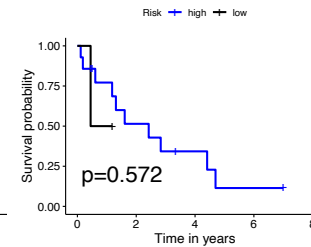
Risk high	56	24	13	5	3	1
Risk low	22	13	10	7	3	0
	0	2	4	6	8	10

Patients with N0



Risk high	120	73	38	15	6	1	0
Risk low	118	87	63	33	16	4	1
	0	2	4	6	8	10	12

Patients with N1

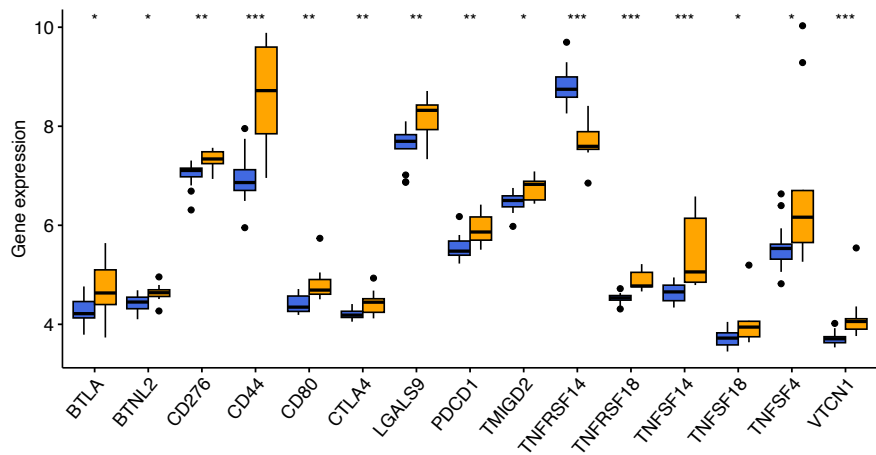


Risk high	14	6	3	1	0	0
Risk low	2	0	0	0	0	0
	0	2	4	6	8	

GSE22541

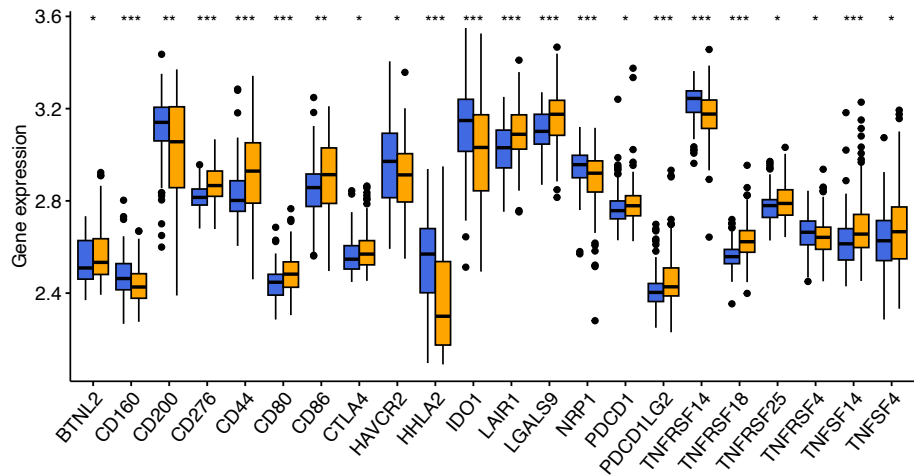
primary ccRCC data

Risk low high



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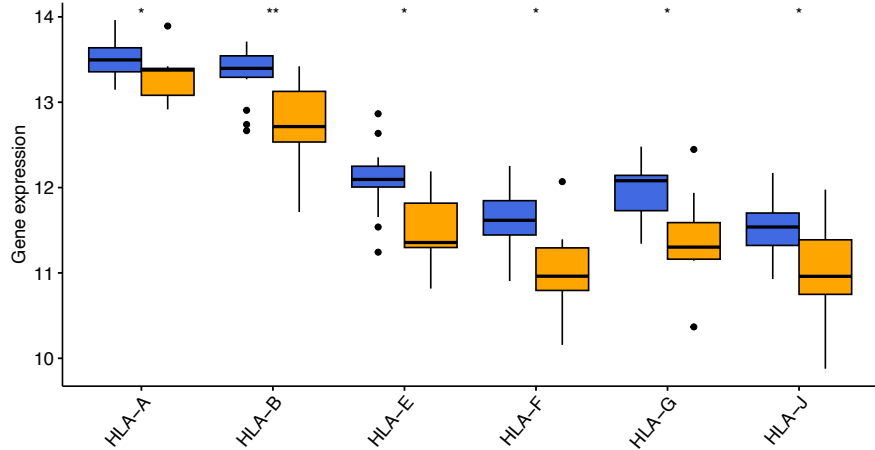
Risk low high



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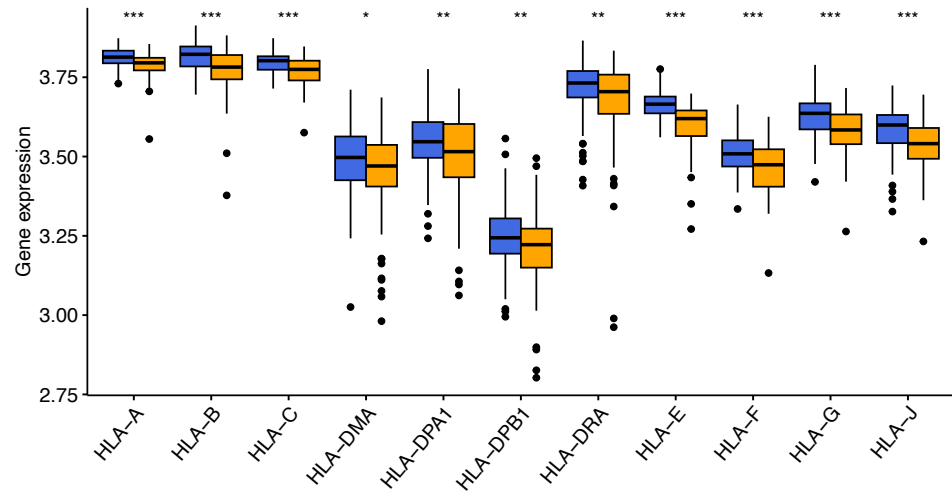
primary ccRCC data

Risk ■ low ■ high



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Risk ■ low ■ high



	pvalue	Hazard ratio
ACC	<0.001	5.222(2.261–12.063)
BLCA	0.141	1.196(0.942–1.517)
BRCA	0.163	0.852(0.680–1.067)
CESC	0.135	0.790(0.580–1.076)
CHOL	0.992	1.004(0.506–1.990)
COAD	0.976	0.992(0.606–1.624)
DLBC	0.583	0.738(0.250–2.181)
ESCA	0.105	0.748(0.526–1.063)
GBM	0.082	1.402(0.957–2.052)
HNSC	0.017	0.818(0.693–0.965)
KICH	0.035	4.633(1.116–19.225)
KIRC	<0.001	2.701(2.040–3.575)
KIRP	0.312	1.385(0.737–2.603)
LAML	0.706	0.937(0.668–1.313)
LGG	0.927	0.975(0.572–1.663)
LIHC	0.012	1.374(1.071–1.763)
LUAD	0.320	1.112(0.902–1.370)
LUSC	0.053	0.829(0.686–1.003)
MESO	<0.001	2.453(1.575–3.820)
OV	0.129	1.190(0.950–1.490)
PAAD	0.405	1.199(0.782–1.837)
PCPG	0.663	0.690(0.130–3.670)
PRAD	0.389	0.550(0.141–2.144)
READ	0.462	1.432(0.551–3.725)
SARC	0.239	1.259(0.858–1.850)
STAD	0.018	0.663(0.472–0.931)
TGCT	0.398	4.282(0.147–125.025)
THCA	0.072	2.187(0.933–5.128)
THYM	0.170	1.969(0.748–5.185)

