

**Supplementary Table S1.** Clinicopathological characteristics statistics of KIRC patients from TCGA.

Clinical characteristics		Total (537)	%
Age at diagnosis (y)	young age ( $\leq 60$ )	266	49.5
	old age ( $> 60$ )	271	50.5
Gender	Male	346	64.4
	Female	191	35.6
Stage	I	269	50.1
	II	57	10.6
	III	125	23.3
	IV	84	15.6
	NA	2	0.4
T classification	T1	275	51.2
	T2	69	12.8
	T3	182	33.9
	T4	11	2.0
M classification	M0	426	79.3
	M1	79	14.7
	NA	32	6.0
N classification	N0	240	44.7
	N1	17	3.2
	NA	280	52.1