

**Supplementary figure1.** Tumor mutation landscape of RCC1/SNHG3/SNHG12 EXP in BRCA/LGG/LIHC.



**Supplementary figure2.** Correlation between RCC1/SNHG3/SNHG12 and TP53 in cancers. (a) Correlation of RCC1/SNHG3/SNHG12 and TP53 expression in different cancers. (b-d) Differential expression of RCC1/SNHG3/SNHG12 in WT TP53 and Muted TP52 in BRCA, LGG and LIHC.



**Supplementary figure3.** Analysis of RCC1/SNHG3/SNHG12 in KICH. (a) Methylation of RCC1/SNHG3/SNHG12 in KICH. (b) Tumor mutation landscape of RCC1/SNHG3/SNHG12 EXP in KICH. (c) Overall differential genes in KICH tumors with their chromosomal distribution. (d-e) Venn diagram of KICH and other cancer differential genes.



**Supplementary figure4.** OS and DFS of RCC1/SNHG3/SNHG12 in KICH.



**Supplementary figure5.** OS and DFS of RCC1/SNHG3/SNHG12 in THYM.