## **Supplementary Materials**

### **Supplementary Tables**

**Table S1.** Primer information for qRT-PCR experiment.**Table S2.** Detailed 24 tumour essential candidate genes.

### **Supplementary Figures**

**Figure S1.** The correlation analysis between the expression levels of PRC1 mRNA and homologous recombination repair genes.

**Figure S2.** Correlation between PRC1 expression levels and the infiltration of immune cells in the tumor microenvironment.

Figure S3. Quantitative bar graphs of in vitro experiments.

**Figure S4.** Assessment of the proliferation and migration abilities after knockdown PRC1 in HK-2 cells

# Supplementary Tables Table S1. Primer information for qRT-PCR experiment.

Genes	Primer (5'-3')
PRC1-F	5'-ACAGACAGAGACAGAGATG-3'
PRC1-R	5'- GCCGAATGCTACTATTGG-3'
GAPDH-F	5'-GAAGGTGAAGGTCGGAGTC-3'
GAPDH-R	5'-GAAGATGGTGATGGGATTTC-3'

Supplementary rapie 2. Detailed 24 tuniour essential candidate dene	Supplementary	Table 2. Detail	ed 24 tumour es	ssential candidate	genes.
---	---------------	-----------------	-----------------	--------------------	--------

Genes
BIRC5
CDC6
MCM5
NDC80
CCNA2
RPLP0
CENPE
PRC1
CDT1
SEC61G
GAPDH
GINS2
PLK1
TUBA1B
RPS2
TICRR
RFC2
RRM2
TOP2A
RPS19
BUB1B
DTL
NCAPG
CDCA8

#### **Supplementary Figures**

**Figure S1.** The correlation analysis between the expression levels of PRC1 mRNA and homologous recombination repair genes.



Α

**Figure S2.** Correlation between PRC1 expression levels and the infiltration of immune cells in the tumor microenvironment. (A). ESTIMATE algorithm. (B). ssGSEA algorithm. (C). Cibersoft algorithm.



**Figure S3.** Quantitative bar graphs of in vitro experiments. (A). Quantitative results of EdU assays. (B). Quantitative of Transwell experiments. (C). Quantitative of colony formation assays.









**HK-2 Cell lines** 



si-PRC1-1

si-PRC1-2



