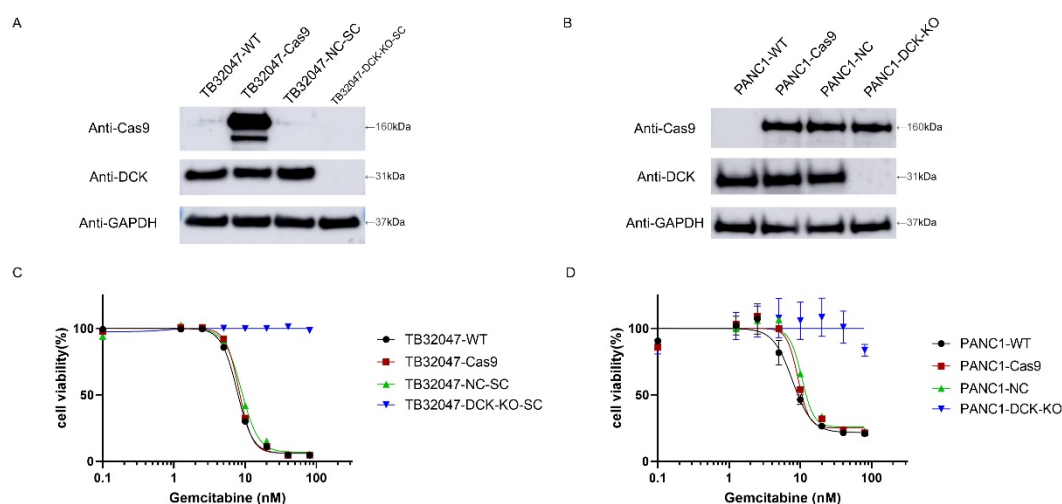


Supplementary material

# Genome-Wide CRISPR Screening Identifies DCK and CCNL1 as Genes that Contribute to Gemcitabine Resistance in Pancreatic Cancer

Hai Yang, Bin Liu, Dongxue Liu, Zhirong Yang, Shuman Zhang, Pengyan Xu, Yuming Xing, Isabella Kutschick, Susanne Pfeffer, Nathalie Britzen-Laurent, Robert Grützmann and Christian Pilarsky

The description of the content for the mouse GeCKO libraries can be found at <https://www.addgene.org/pooled-library/zhang-mouse-gecko-v2/>



**Figure S1.** Knockout of DCK increased gemcitabine resistance in TB32047 and PANC1. (A-B) Western blot results show the DCK knocked out in TB32047-DCK-KO-SC and PANC1-DCK-KO. (C-D) Gemcitabine dose-response curves for TB32047 and PANC1 cells. The results showed that DCK negative cells were utterly resistant to 80 nM gemcitabine.

**A**

TB32047-WT  
TB32047-NC  
TB32047-CCNL1-SG1-mutation  
sgRNA1-rev

CCCTCTGTCCCTCAGATCATTGTAATGTATTACAAAGTCTTAGAATGTGAACGTAAACCAACCCCTGGTTCAAACCTGCCTGGTAAAGTTCCCTCTT  
CCCTCTGTCCCTCAGATCATTGTAATGTATTACAAAGTCTTAGAATGTGAACGTAAACCAACCCCTGGTTCAAACCTGCCTGGTAAAGTTCCCTCTT  
CCCTCTGTCCCTCAGATCATTGTAATGTATTACAAAGTCTTAGAATGTGAACGTAAACCAACCCCTGGTTCAAACCTGCCTGGTAAAGTTCCCTCTT  
CCCTCTGTCCCTCAGATCATTGTAATGTATTACAAAGTCTTAGAATGTGAACGTAAACCAACCCCTGGTTCAAACCTGCCTGGTAAAGTTCCCTCTT

**B**

TB32047-WT  
TB32047-NC  
TB32047-CCNL1-SG2-mutation1  
TB32047-CCNL1-SG2-mutation2  
sgRNA2-rev

AGATTCCCTTCC-----AACTCGGCCCCATTGGTTTCTTCTGTGTT  
AGATTCCCTTCC-----AACTCGGCCCCATTGGTTTCTTCTGTGTT  
AGATTCCCTTCC-----AACTCGGCCCCATTGGTTTCTTCTGTGTT  
AGATTCCCTTCC-----AACTCGGCCCCATTGGTTTCTTCTGTGTT

**C**

PANC1-WT  
PANC1-NC  
PANC1-CCNL1-SG1-mutation1  
PANC1-CCNL1-SG1-mutation2  
sgRNA1-rev

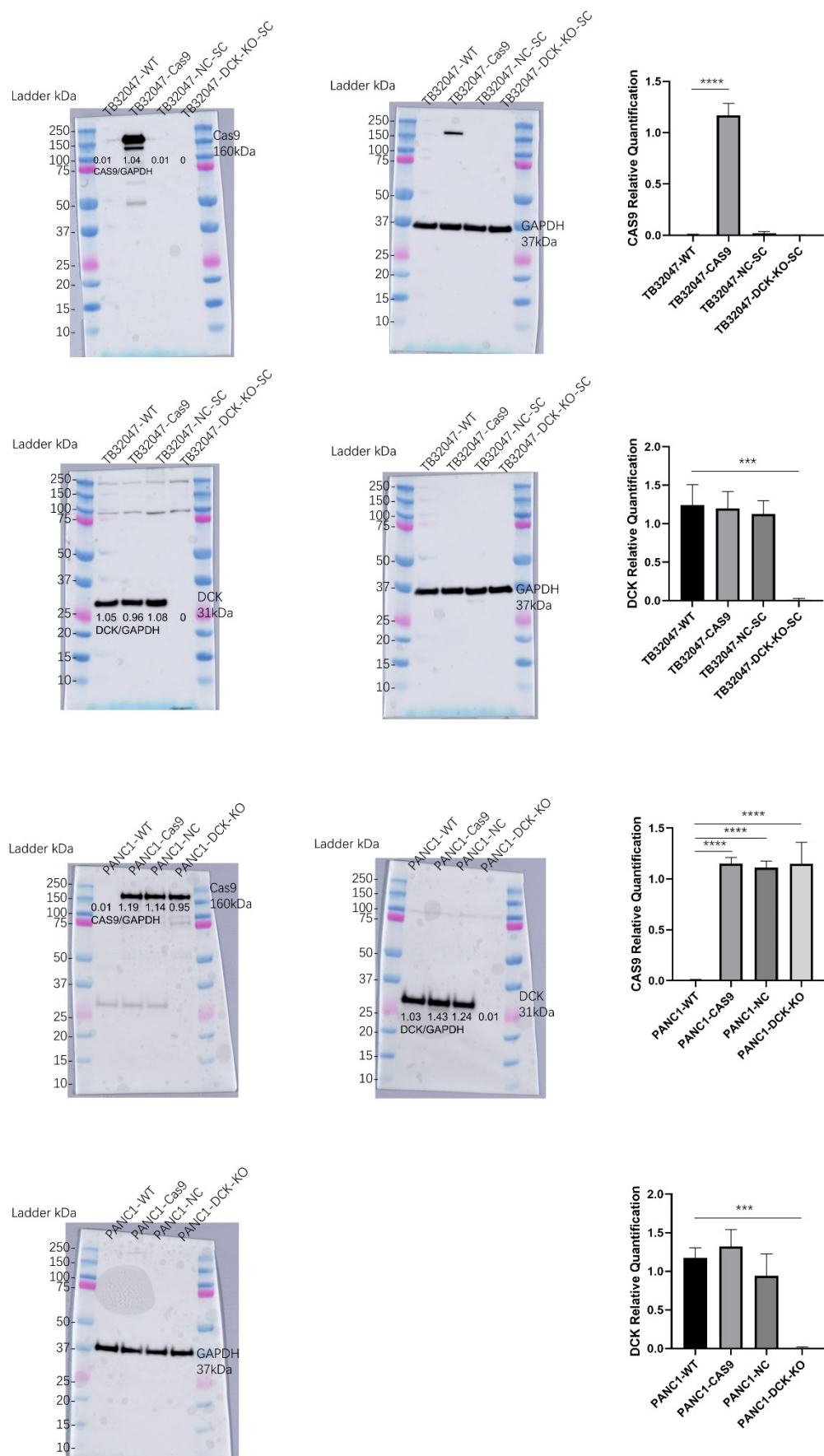
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**D**

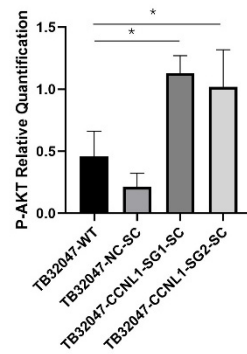
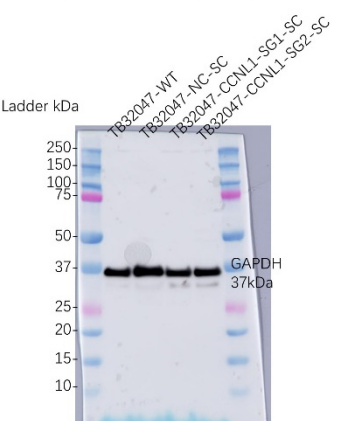
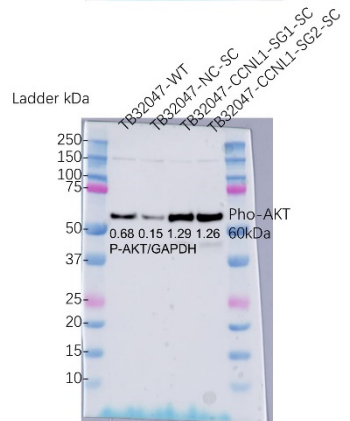
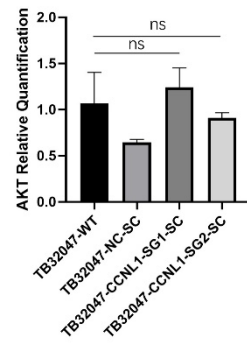
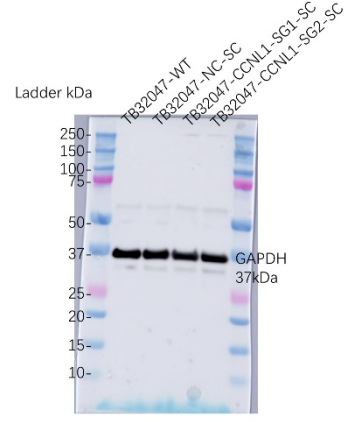
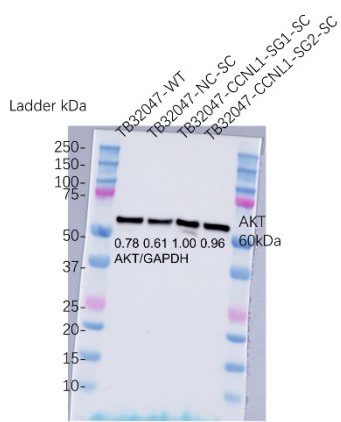
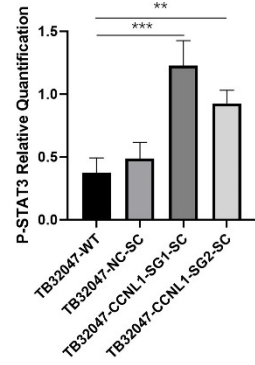
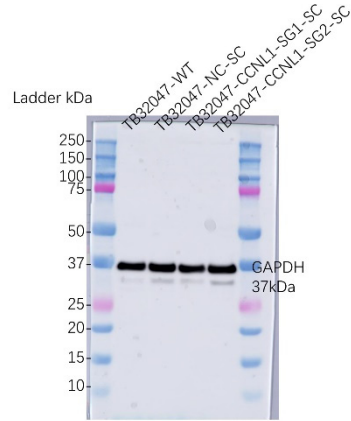
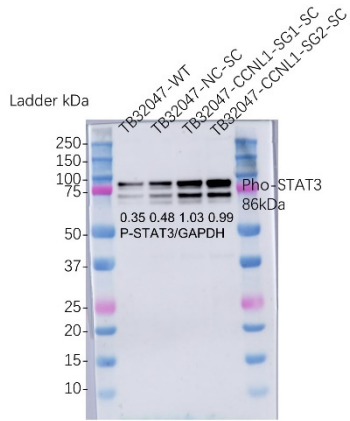
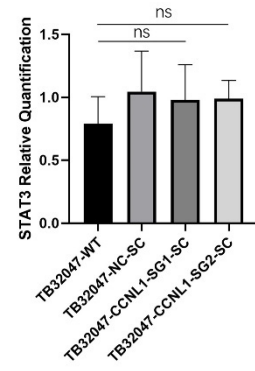
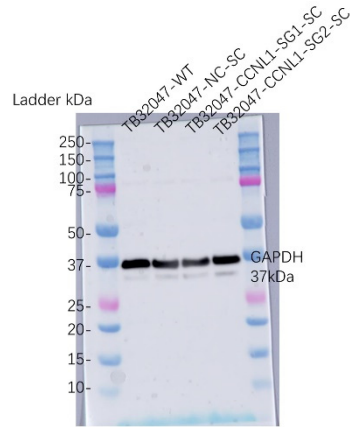
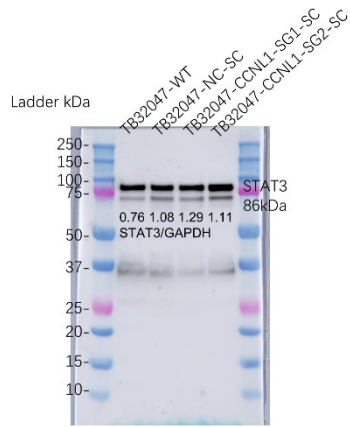
PANC1-WT  
PANC1-NC  
PANC1-CCNL1-SG2-mutation  
sgRNA2-rev

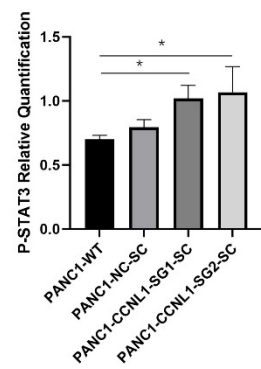
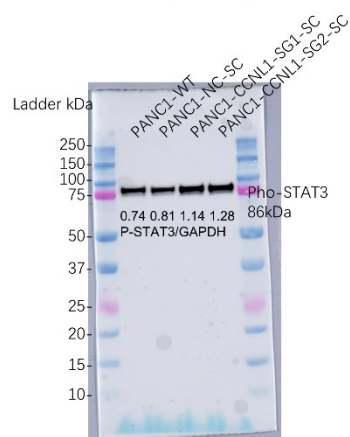
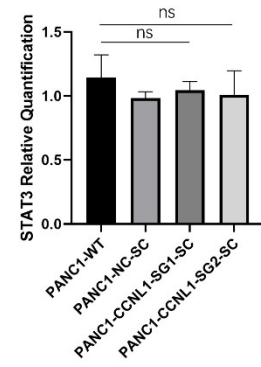
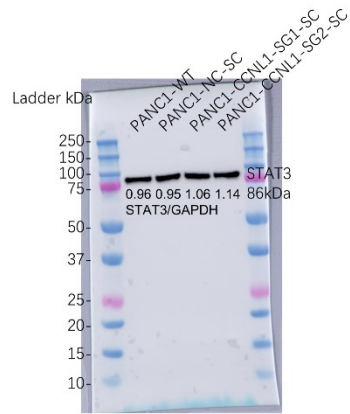
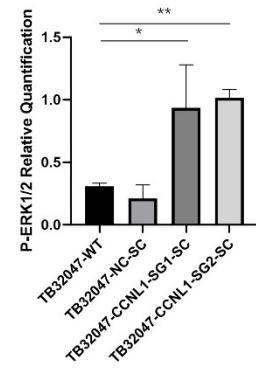
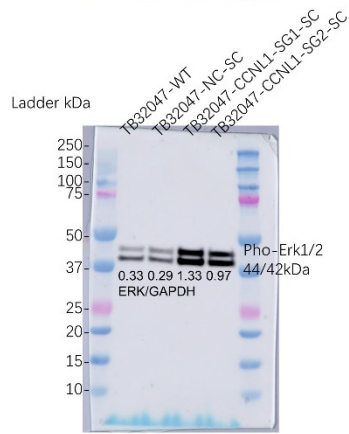
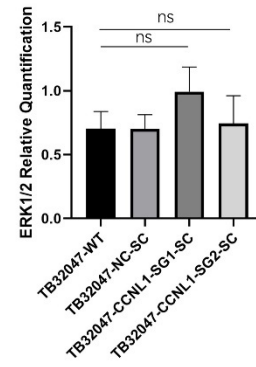
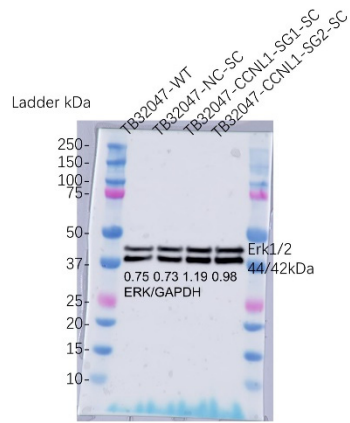
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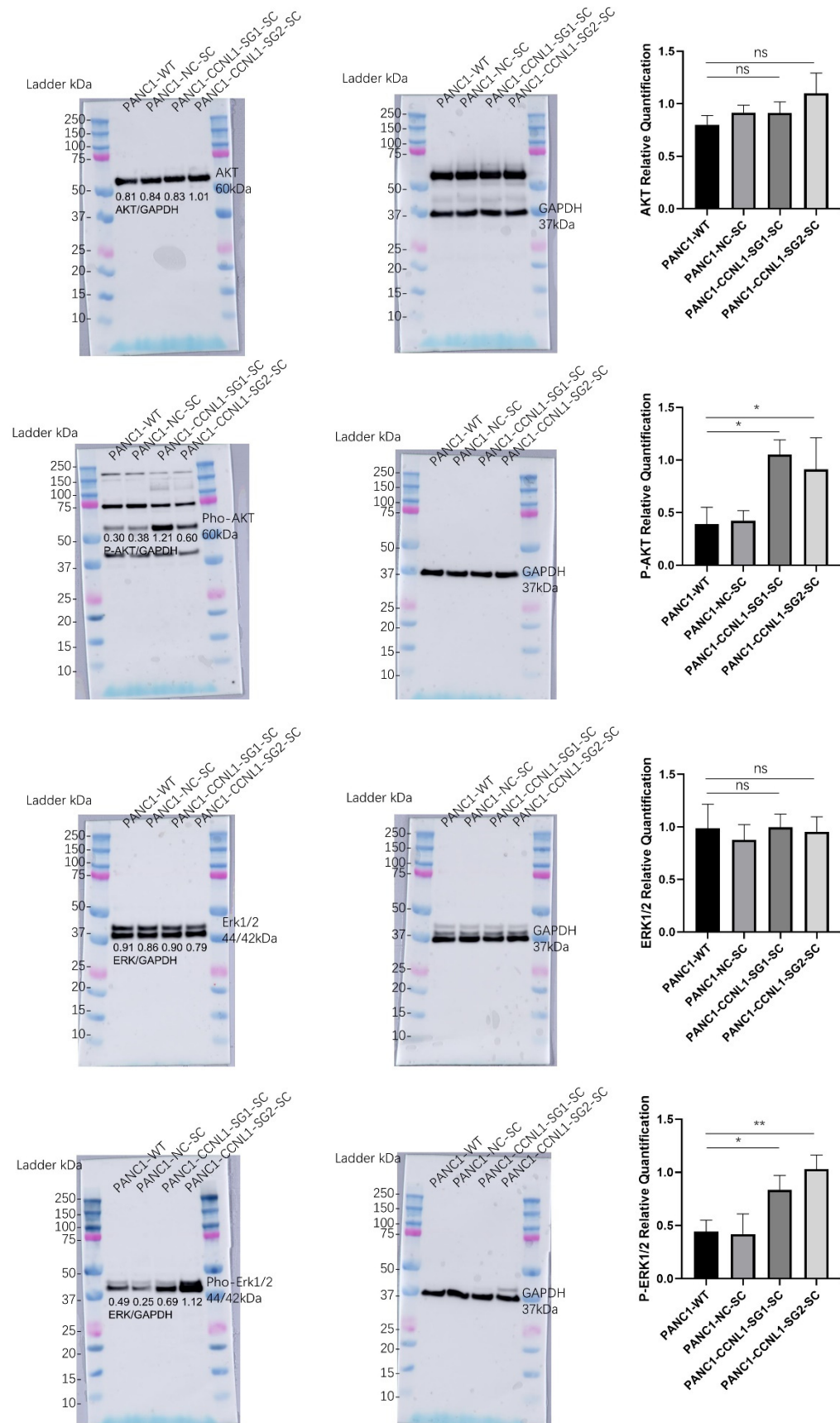
**Figure S2.** Sequencing confirmation of mutation in TB32047 and PANC1 CCNL1 negative cells. (A) to (D) Sequencing results showing CCNL1 knocked out in TB32047-CCNL1-SG1/2-SC and PANC1-CCNL1-SG1/2-SC. The red highlight area means the insertion, deletion, or replacement of the reference sequence. The black highlight area means a big fragment replacement compared with the reference sequence.



**Figure S3.** Western blot of TB32047 and PANC1 cells transfected with DCK sgRNA or nontargeting control.







**Figure S4.** Western blot of TB32047 and PANC1 cells transfected with CCNL1 sgRNA or nontargeting control.