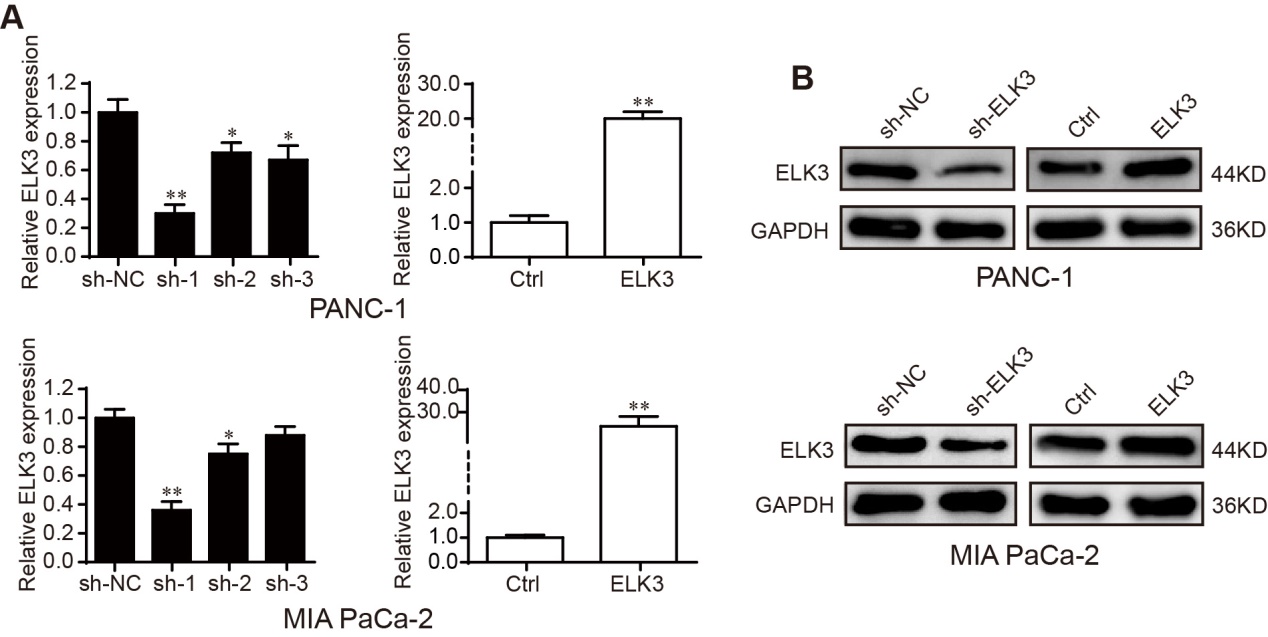
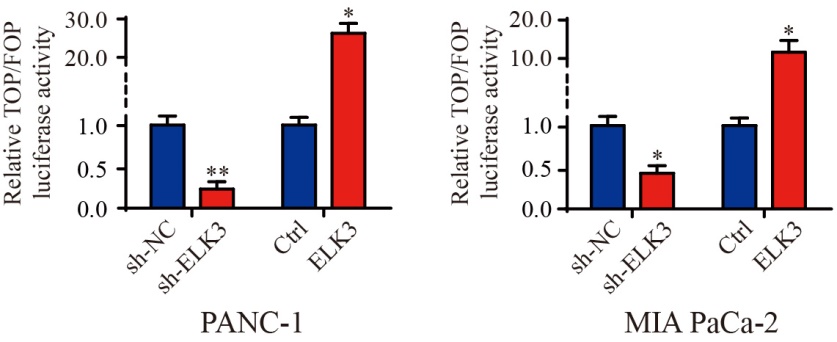
**Supplementary Figure**

**Figure S1**



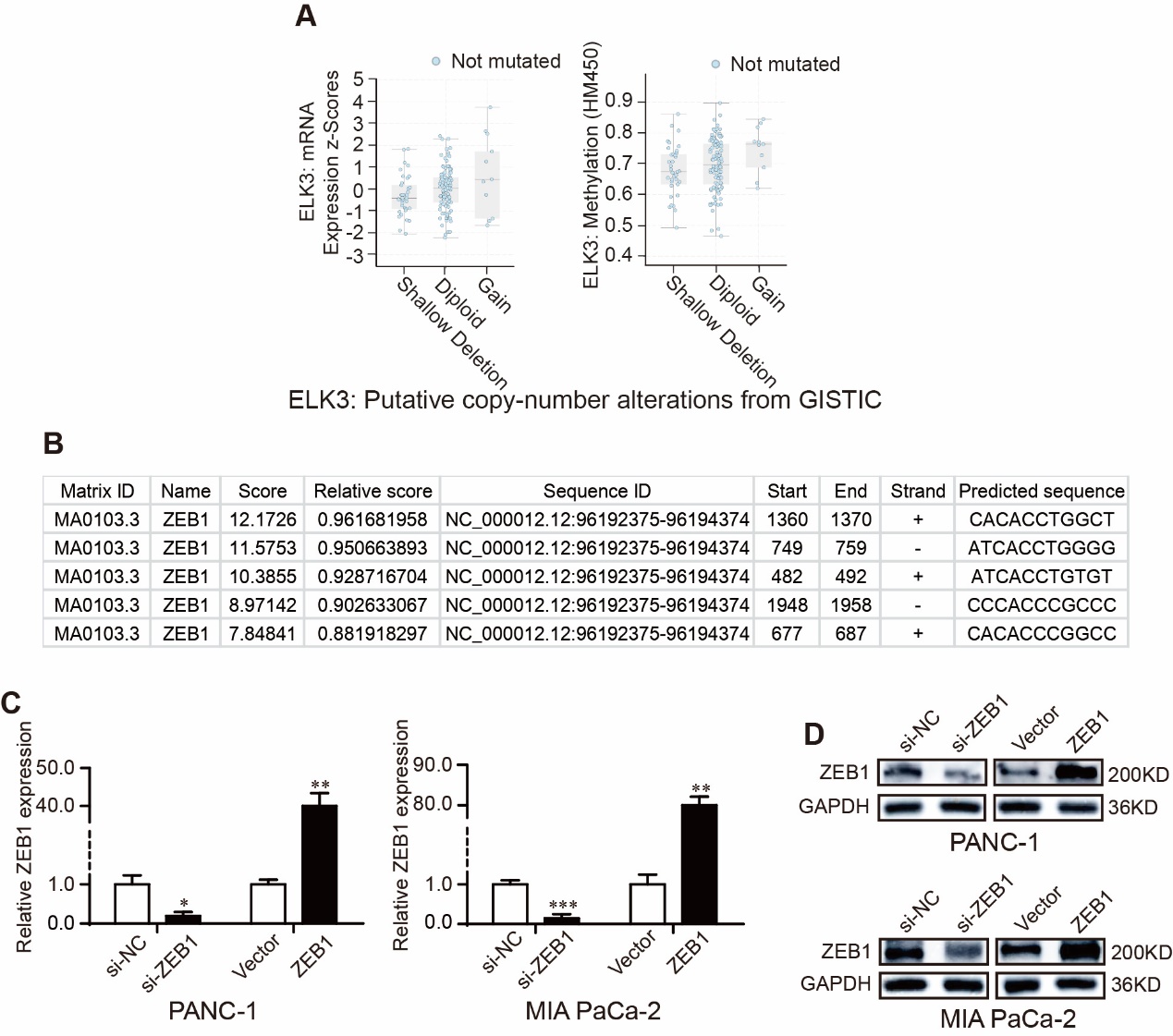
**F****igure S1** Verify the transfection efficiency of ELK3 in PDAC cells. **(A)** QRT-PCR analysis of relative ELK3 mRNA expression in stable PANC-1 and MIA PaCa-2 cells with ELK3 knockdown or ELK3 overexpression. **(B)** Western blot analysis confirming the ELK3 protein level in stable PANC-1 and MIA PaCa-2 cells with ELK3 knockdown or ELK3 overexpression. GAPDH was used as the loading control. Biological triplicate experiments were performed for each group. All data are presented as the mean ± SD. \*P < 0.05, \*\*P < 0.01.

**Figure S2**



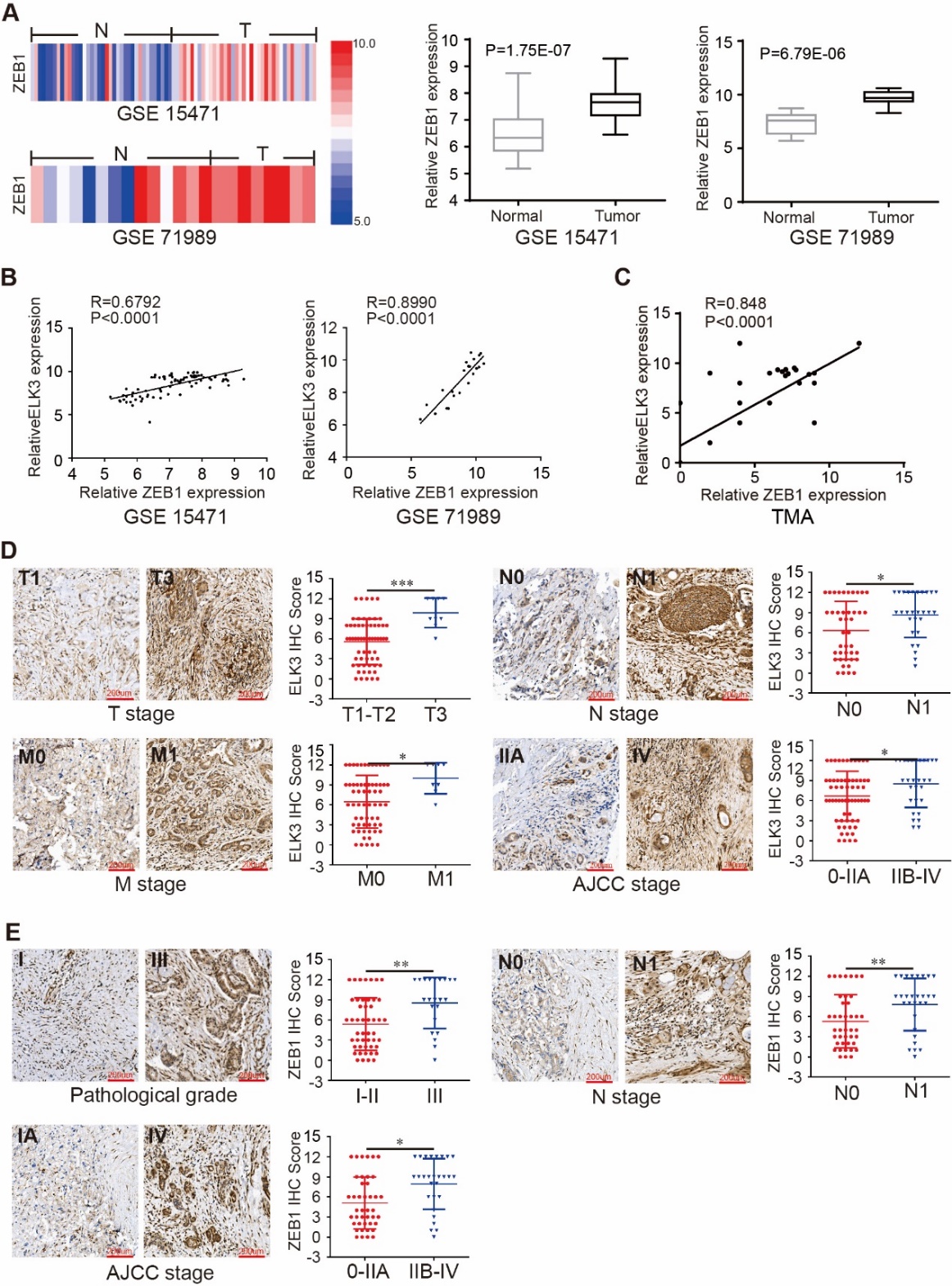
**Figure S2** Relative TOP/FOP luciferase activity. TOP/FOP assay showing the activity of β-catenin in PANC-1 and MIA PaCa-2 cells after ELK3 was knockdown or overexpressed. Biological triplicate experiments were performed for each group. All data are presented as the mean ± SD. \*P < 0.05, \*\*P < 0.01.

**Figure S3**



**Figure S3** Analyze the gene signature of ELK3 and verify the transfection efficiency of ZEB1 in PDAC cells. **(A)** The correlation of ELK3 gene expression with its genetic and methylation levels in PDAC. **(B)** JASPAR database revealing the positions and sequences of five putative ZEB1 binding sites on the ELK3 promoter. **(C)** QRT-PCR analysis of ZEB1 mRNA in PANC-1 and MIA PaCa-2 cells transfected with si-ZEB1 or ZEB1 overexpression plasmid. **(D)** Western blot analysis of ZEB1 protein in PANC-1 and MIA PaCa-2 cells transfected with si-ZEB1 or ZEB1 overexpression plasmid, GAPDH was used as the loading control. Biological triplicate experiments were performed for each group. All data are presented as the mean ± SD. \*P < 0.05, \*\*P < 0.01.

**Figure S4**



**Figure S4** ZEB1 expression in pancreatic cancer tissues. **(A)** ZEB1 expression level in GEO datasets GSE15471 (T, n = 36; N, n = 36) and GSE71989 (T, n = 14; N, n = 8). **(B)** The correlation of ELK3 gene expression with ZEB1 in PDAC from GSE15471 and GSE71989. **(C)**  Positive correlation between ZEB1 and ELK3 in TMAs, as detected by IHC scores (R = 0.848, P < 0.0001). **(D)** Representative IHC images and IHC scores of ELK3 in TMA samples of T1-T2 vs T3 stage, N0 vs N1 stage, distant metastasis M0 vs M1 stage and AJCC 0-IIA vs IIB-IV stage (scale bar: 200 μm; magnification: 200 x). **(E)** Representative IHC images and IHC scores of ZEB1 in TMA samples of pathological grade I-II vs III, N0 vs N1 stage and AJCC 0-IIA vs IIB-IV stage (scale bar: 200 μm; magnification: 200 x). \*P <0.05, \*\*P < 0.01, \*\*\*P < 0.001.