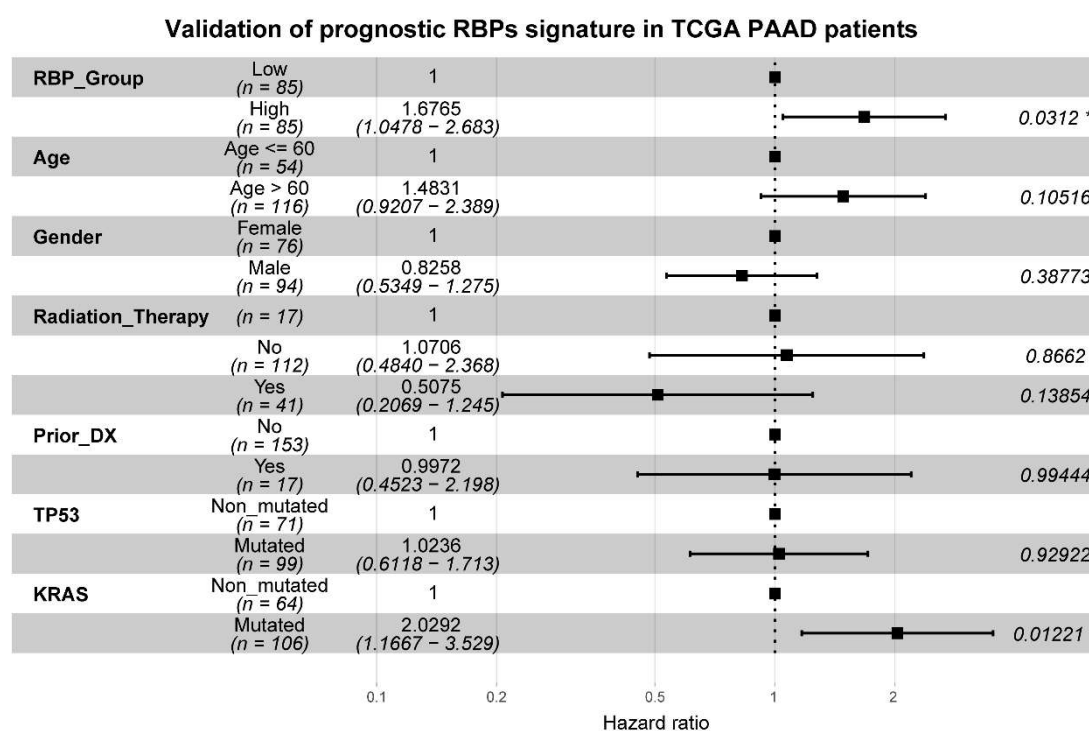# Supplementary Materials: Systematic Identification of the RNA-Binding Protein STAU2 as a Key Regulator of Pancreatic Adenocarcinoma

**Xiao Wang, Wenbin Kuang, Jiayu Ding, Jiaxing Li, Minghui Ji, Weijiao Chen, Hao Shen, Zhongrui Shi, Dawei Wang, Liping Wang and Peng Yang**

**Figure S1.** Validation of prognostic RBPs signature in TGCA PAAD patients. Forest plots showing the prognostic values of RBPs signature in multivariate cox regression analysis in TCGA dataset. *p < 0.05.
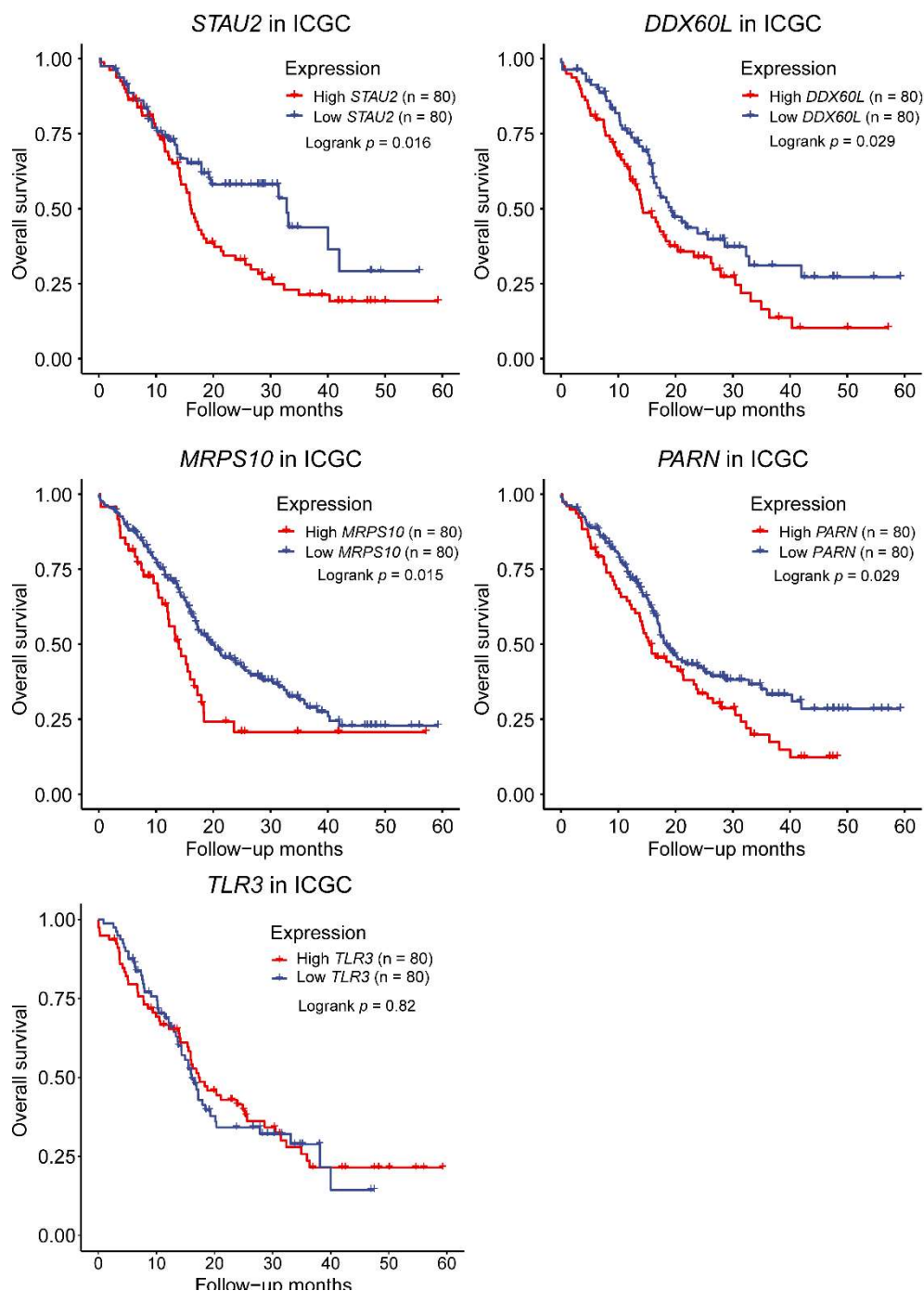
**Figure S2.** Validation of prognostic RBPs-hub signature in ICGC PAAD patients. Kaplan-Meier plot showing the relationship between mRNA expression of RBPs-hub signature and overall survival of ICGC PAAD patients.
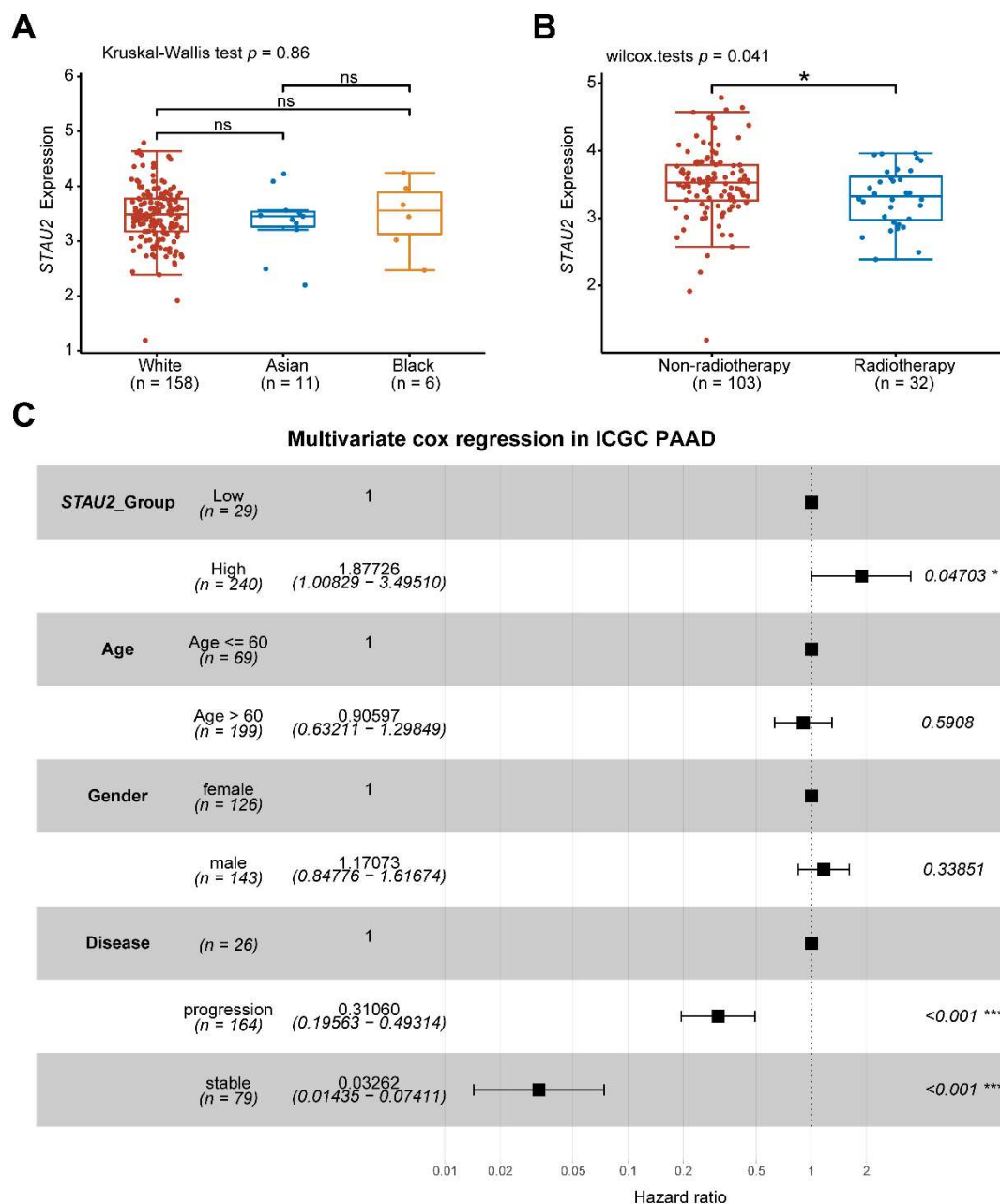
**Figure S3.** Geographic and clinical features specificity of STAU2 and validation of prognostic STAU2 in ICGC PAAD patients. (**A**) Differential expression of STAU2 in white, Asian and black pancreatic cancer patients. ns, $p > 0.05$. (**B**) Expression difference of STAU2 between pancreatic cancer patients with and without radiation therapy *$p < 0.05$. (**C**) Forest plots showing the prognostic values of STAU2 signature in multivariate cox regression analysis in ICGC dataset. *$p < 0.05$, ***$p < 0.001$.
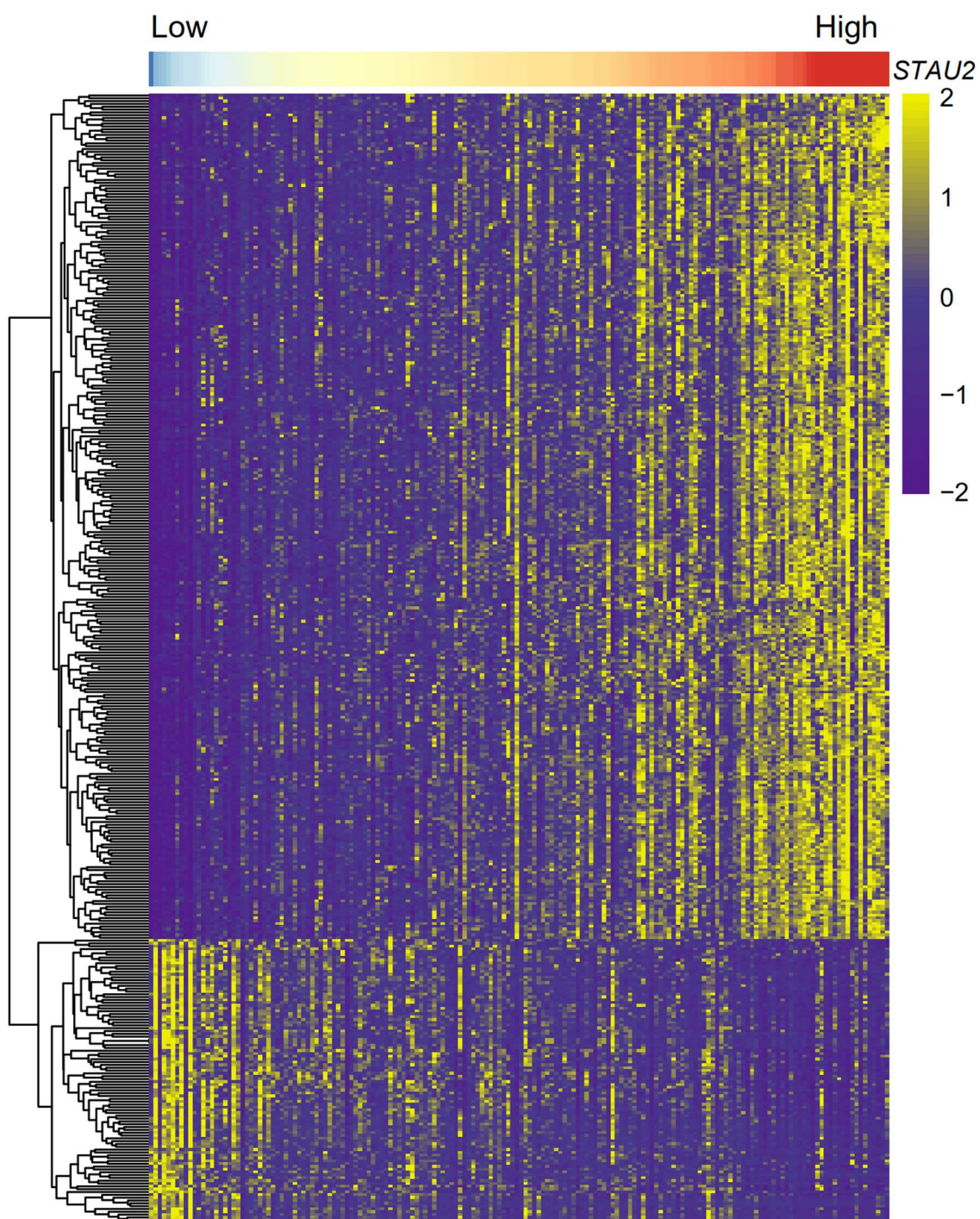
**Figure S4.** Heatmaps to show the expression patterns of *STAU2*-correlated genes.
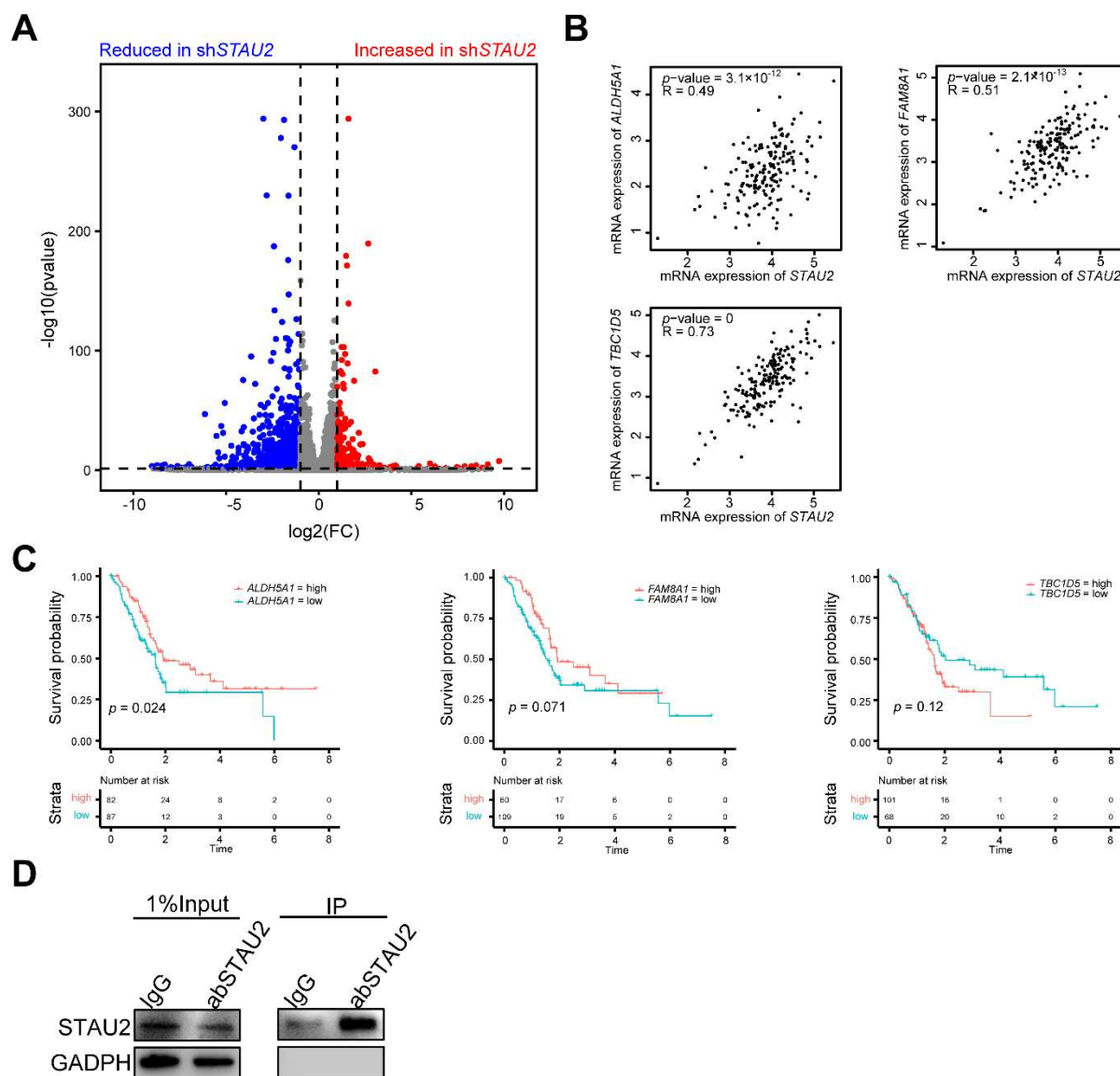
**Figure S5.** Validation and analysis of *STAU2* associated genes. (**A**) Genes expression of RNA sequence in sh*NC* and sh*STAU2* PANC-1 cells. (**B**) Scatter plots to show the correlation between *STAU2* and STAU2-target genes. (**C**) Kaplan-Meier plot showing the relationship between expression levels of STAU2-target genes and overall survival of TCGA-PAAD patients. (**D**) IP analysis of protein extracts from PANC-1 cells. IP was performed with a STAU2 antibody, followed by WB analysis of STAU2 pulldown products using STAU2 and GAPDH antibodies. The uncropped Western Blot images can be found in Figure S10.
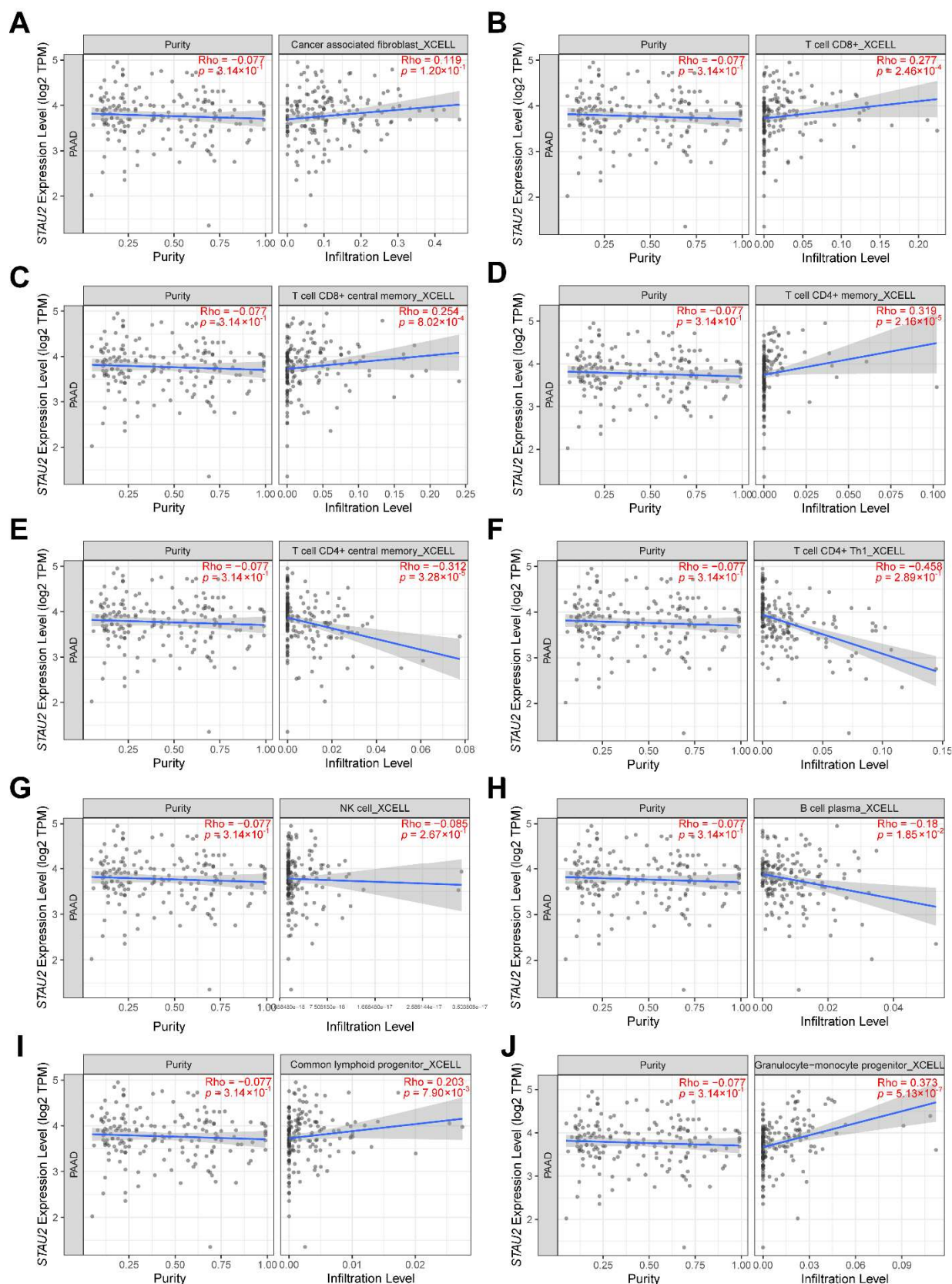
**Figure S6.** The association between *STAU2* expression and immune infiltration in PAAD patients. The relationship between mRNA expression levels of *STAU2* and immune infiltration levels of cancer associated fibroblast, CD8+ T-cells, CD8+ central memory T-cells, CD4+ memory T-cells, memory CD4+ central memory T-cells, Th1 CD4+ T-cells, NK T-cell, plasma B-cells, common lymphoid progenitor, granulocyte–monocyte progenitors presented by scatter plots.

**Figure S7.** Uncropped Western Blot images for Figure 4F.
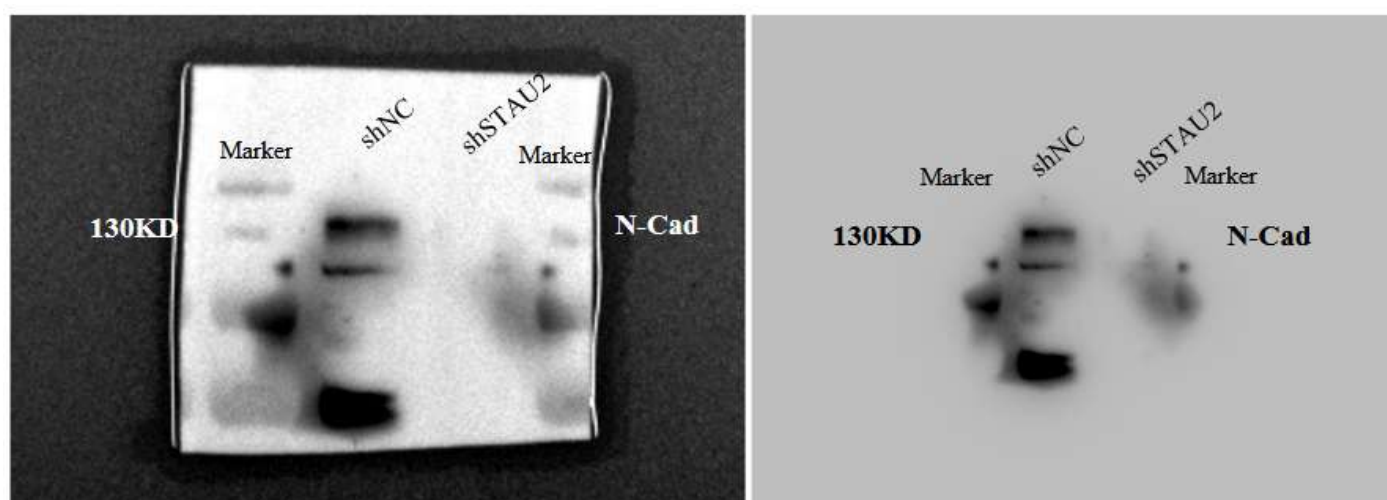


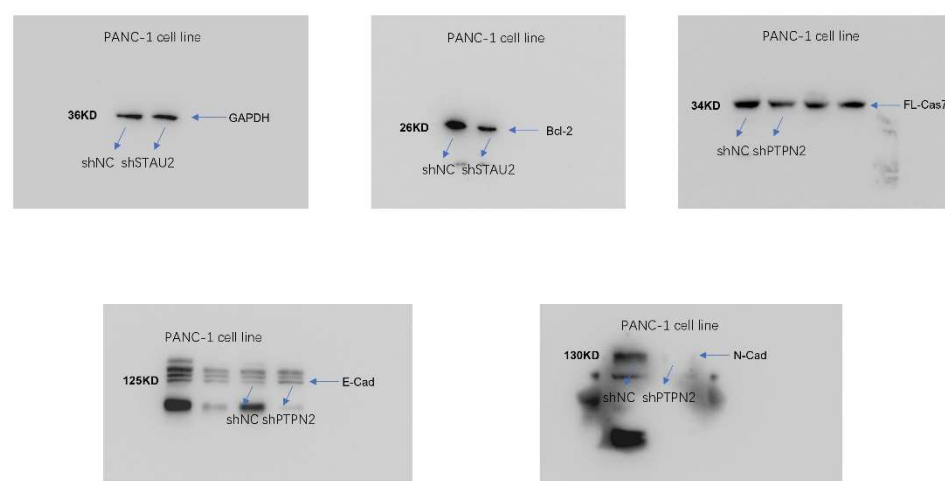**Figure S8.** Uncropped Western Blot images for Figure 5A.
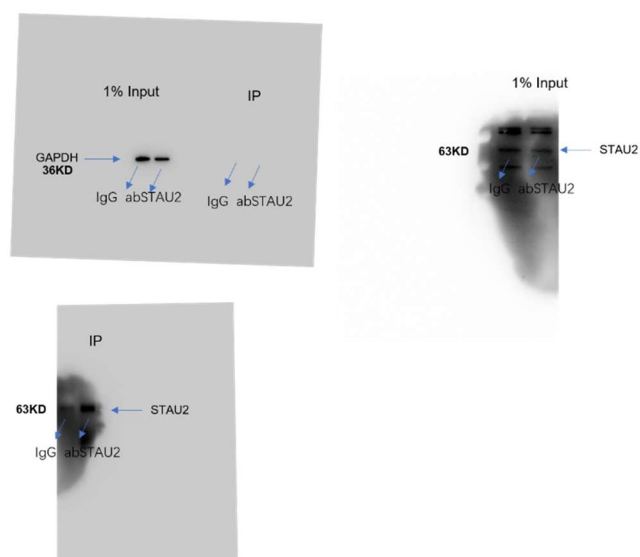




**Figure S9.** Uncropped Western Blot images for Figure 5F.

**Figure S10.** Uncropped Western Blot images for Figure S5D.

**Table S1.** Primer sequences for genes in RT-qPCR.

| Name | Sense (5′–3′) | Antisense (5′–3′) |
|---|---|---|
| *STAU2* | GCTCTGAAGCGAAATATGCCTGTC | TTTAAGCTCCTGTAAGACGGTGGTCG |
| *PALLD* | GCCTACTTTCCTCCTGTTTTT | AGTGGTCATTGTTGGATTCTC |
| *HNRNPU* | GGCGGGAGGTAAGAAGAAGG | CAGGTGGCTGAGGAGATTTG |
| *SERBP1* | GTGACTGAGGAAACACCTGAA | AGCCTTCCACTCATCCAAAG |
| *DDX3X* | TGGAAATAGTCGCTGGTGTG | GGAGGACAGTTGTTGCCTGT |
| *β-actin* | CACCATTGGCAATGAGCGGTTC | AGGTCTTTGCGGATGTCCACGT |

**Table S2.** Antibody information in Western Blot.

| Name | Source | Dilution | Manufacturer | Catalong Number |
|---|---|---|---|---|
| β-tubulin | Rabbit | 1:5000 | Share-bio | AB0039 |
| STAU2 | Rabbit | 1:1000 | proteintech | 15998-1-AP |
| Vinculin | Rabbit | 1:1000 | proteintech | 26520-1-AP |
| GAPDH | Mouse | 1:5000 | proteintech | 60004-1-lg |
| BCL2 | Rabbit | 1:1000 | proteintech | 12789-1-AP |
| Caspase7 | Rabbit | 1:1000 | proteintech | 27155-1-AP |
| E-cadherin | Rabbit | 1:1000 | proteintech | 20874-1-AP |
| N-cadherin | Rabbit | 1:1000 | proteintech | 22018-1-AP |