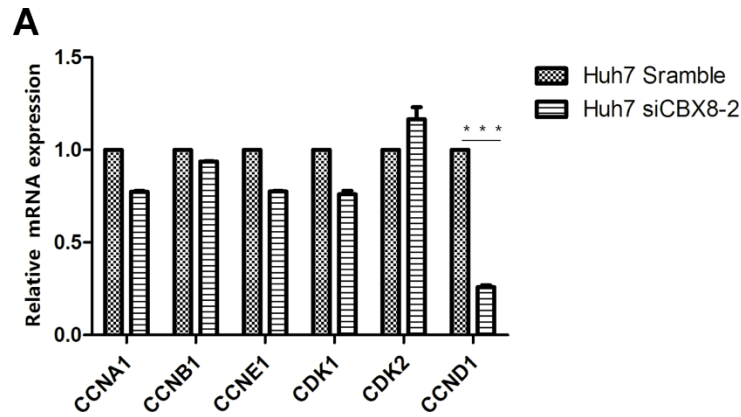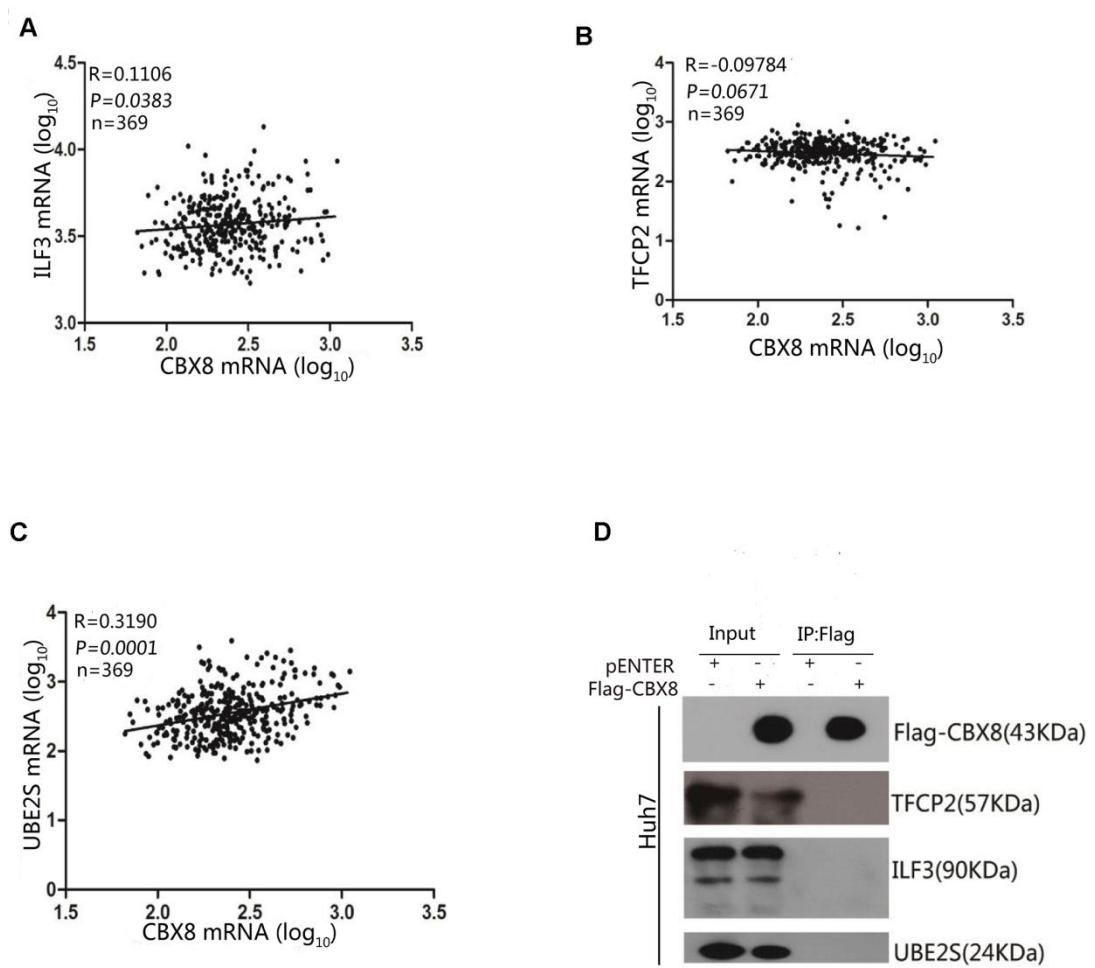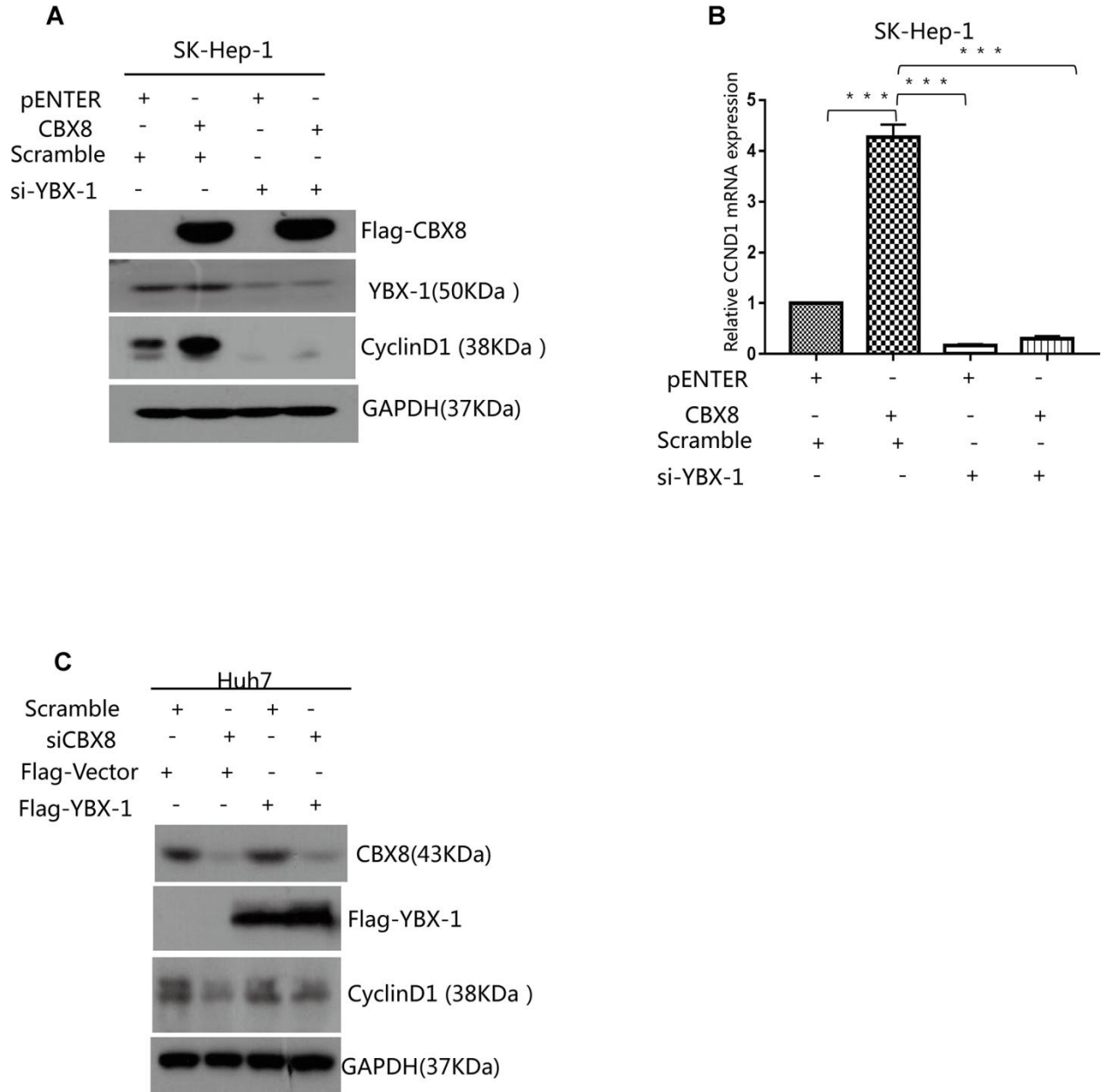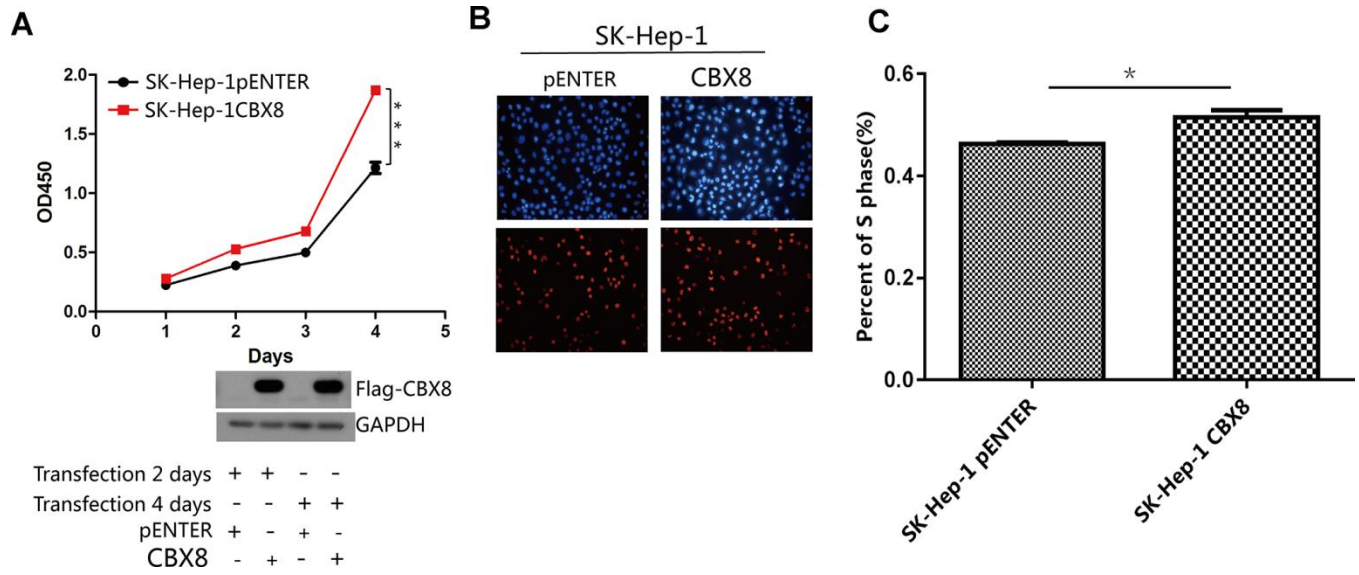# SUPPLEMENTARY FIGURES

A

Supplementary Figure 1. CBX8 positively correlates with the cell cycle signaling pathway. (**A**) Cell cycle-related gene mRNA levels in CBX8-knockdown Huh7 cells, as detected by q-RT-PCR.


Supplementary Figure 2. CBX8 interact with YBX1. (**A–C**) Correlation between CBX8 mRNA and ILF3, TFCP2 and UBE2S mRNA in TCGA cohort. (**D**) Huh7 Cells were transfected with Flag-CBX8 overexpression vector for 48 h. An IP assay, using anti-Flag antibody, was used to detect the binding of CBX8 and ILF3, TFCP2, UBE2S.

A

SK-Hep-1

pENTER	+	-	+	-
CBX8	-	+	-	+
Scramble	+	+	-	-
si-YBX-1	-	-	+	+

Flag-CBX8

YBX-1(50KDa)

CyclinD1 (38KDa)

GAPDH(37KDa)

B

SK-Hep-1

pENTER	+	-	+	-
CBX8	-	+	-	+
Scramble	+	+	-	-
si-YBX-1	-	-	+	+

C

Huh7

Scramble	+	-	+	-
siCBX8	-	+	-	+
Flag-Vector	+	+	-	-
Flag-YBX-1	-	-	+	+

CBX8(43KDa)

Flag-YBX-1

CyclinD1 (38KDa)

GAPDH(37KDa)

Supplementary Figure 3. CBX8 increase levels of CyclinD1 through YBX1. (**A–B**) Both protein and mRNA levels of CyclinD1 in CBX8-overexpressing or YBX1-knock-down SK-Hep1 cells, as detected by western blotting and q-RT-PCR. (**C**) Protein levels of CyclinD1 in CBX8-knock-down or YBX1-overexpressing Huh7 cells as detected by western blotting.
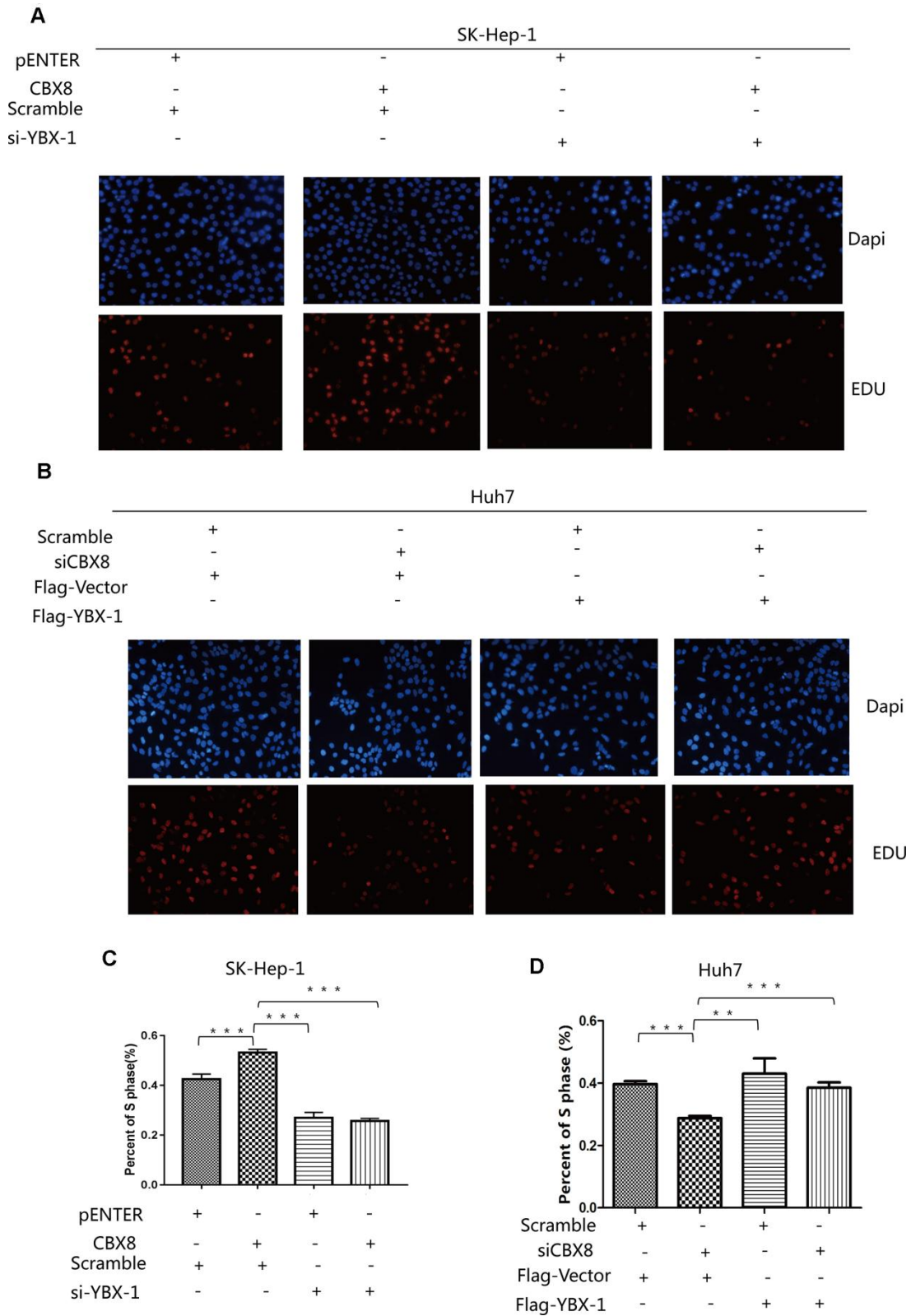
Supplementary Figure 4. CBX8 overexpression promotes cell proliferation. (**A**) Cell proliferation was evaluated by the CCK-8 assay. (**B–C**) Effect of CBX8 on cell proliferation, as measured by EDU assays *$P < 0.05$; **$P < 0.01$; ***$P < 0.001$.
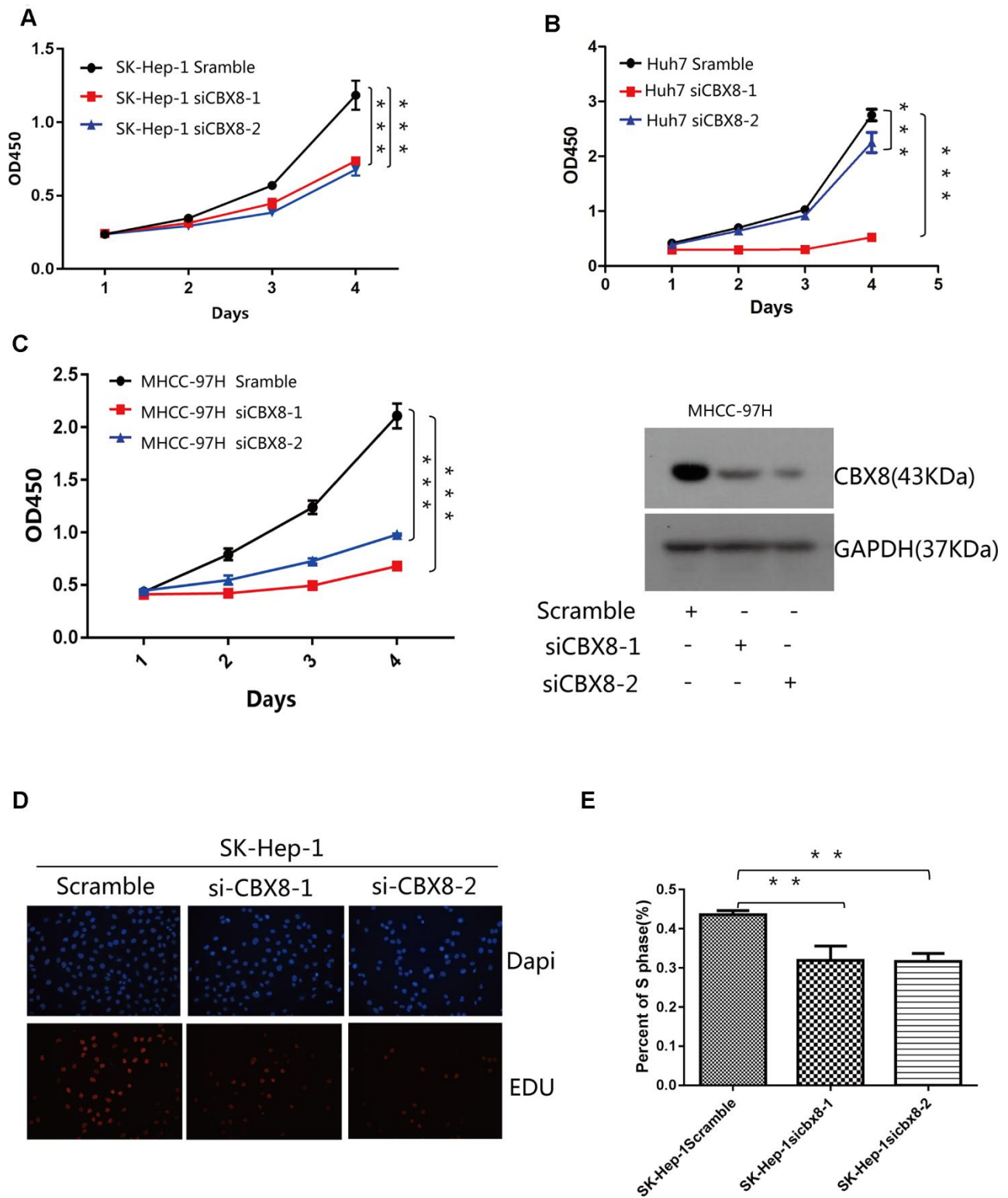
Supplementary Figure 5. Knockdown of CBX8 dramatically decreases cell proliferation in vitro. (**A–C**) Cell proliferation was evaluated by the CCK-8 assay. (**D–E**) Effect of CBX8 on cell proliferation, as measured by EdU assays *$P < 0.05$; **$P < 0.01$; ***$P < 0.001$.
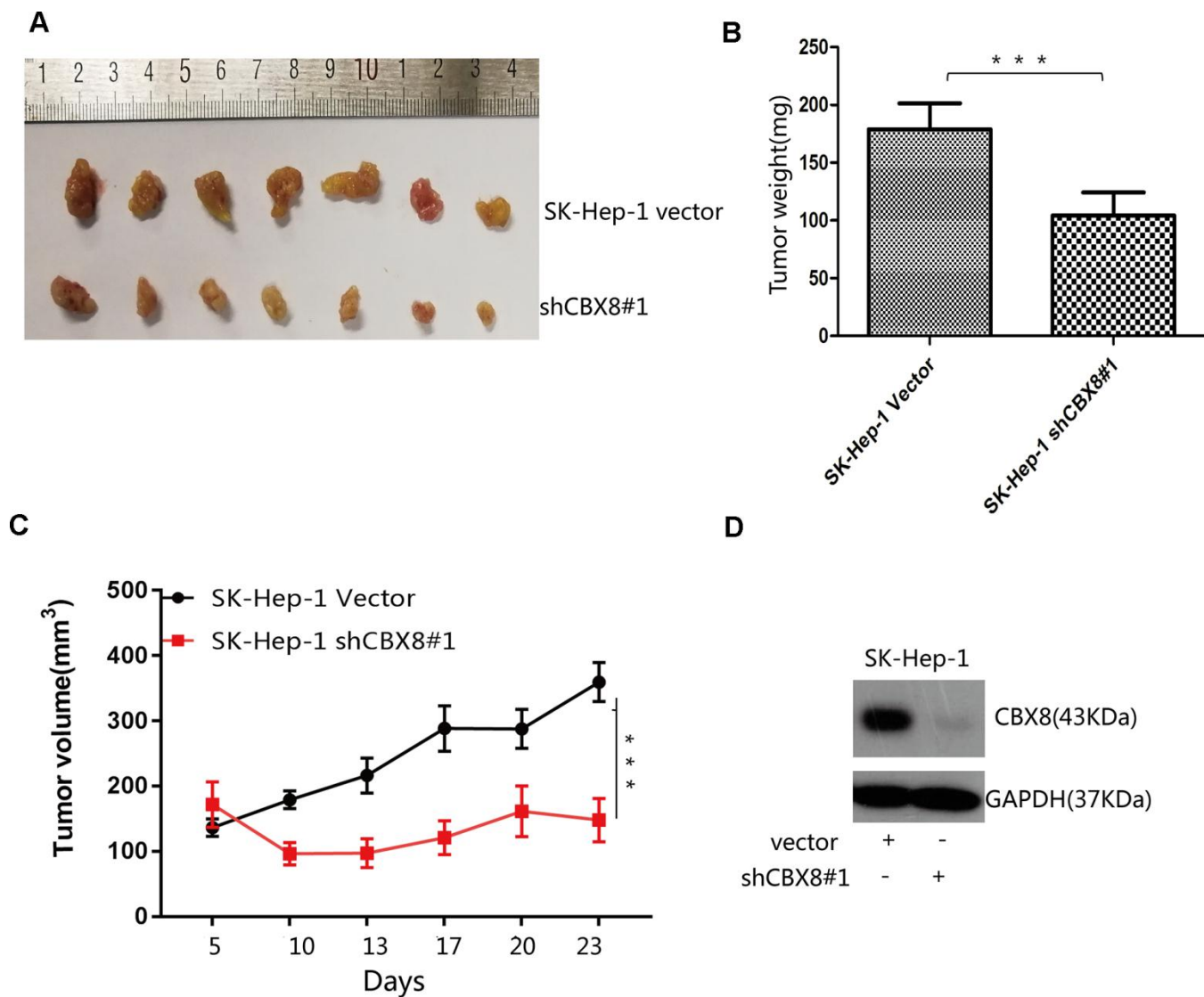
Supplementary Figure 6. Knockdown of CBX8 dramatically decreases cell proliferation in vivo (**A**) Representative images of tumors formed in nude mice injected subcutaneously with CBX8–silenced SK-Hep-1 cells. (**B**) Tumor weights (***P <0.001). (**C**) Tumors induced by CBX8 silencing in SK-Hep-1 cells (***P <0.001) showed markedly lower growth rates than control cells.
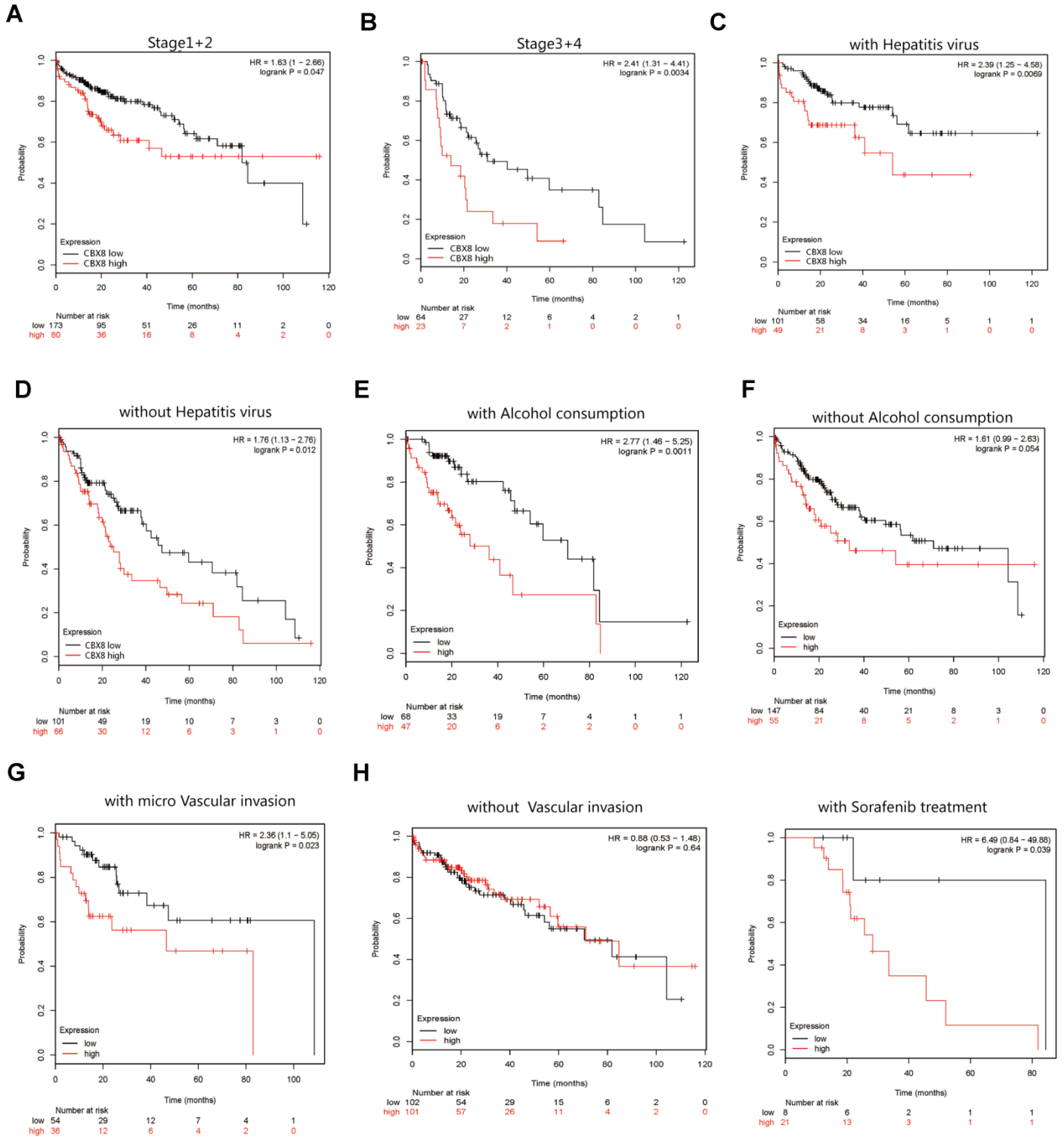
Supplementary Figure 7. CBX8 promotes HCC cell proliferation through YBX1. (**A–D**) Cell proliferation, as detected by EdU assays
**$P < 0.01$; ***$P < 0.001$.

A
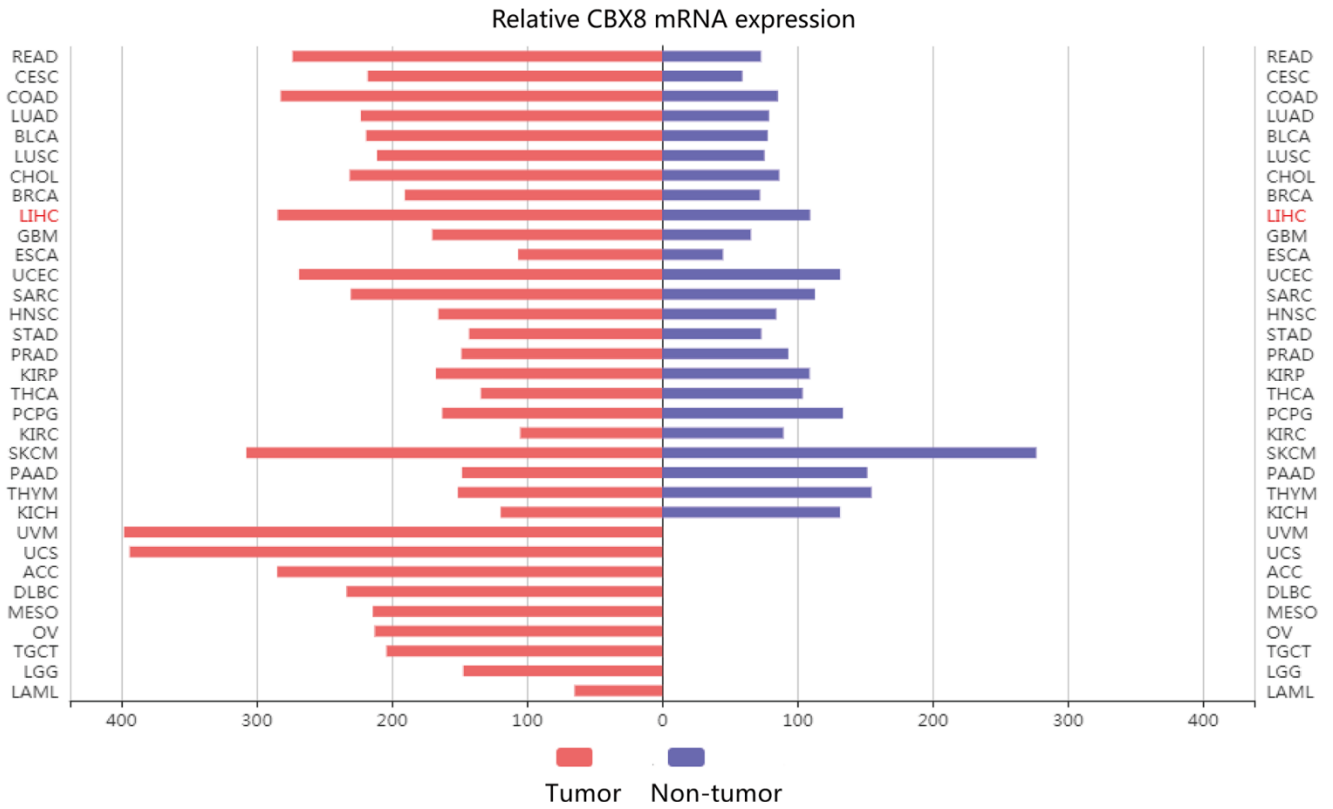
Supplementary Figure 8. CBX8 expression in human cancers (**A**) Relative CBX8 mRNA expression determined by RNA sequencing in human cancers from TCGA data (http://cancergenome.nih.gov/) using the GCBI website (https://www.gcbi.com.cn).
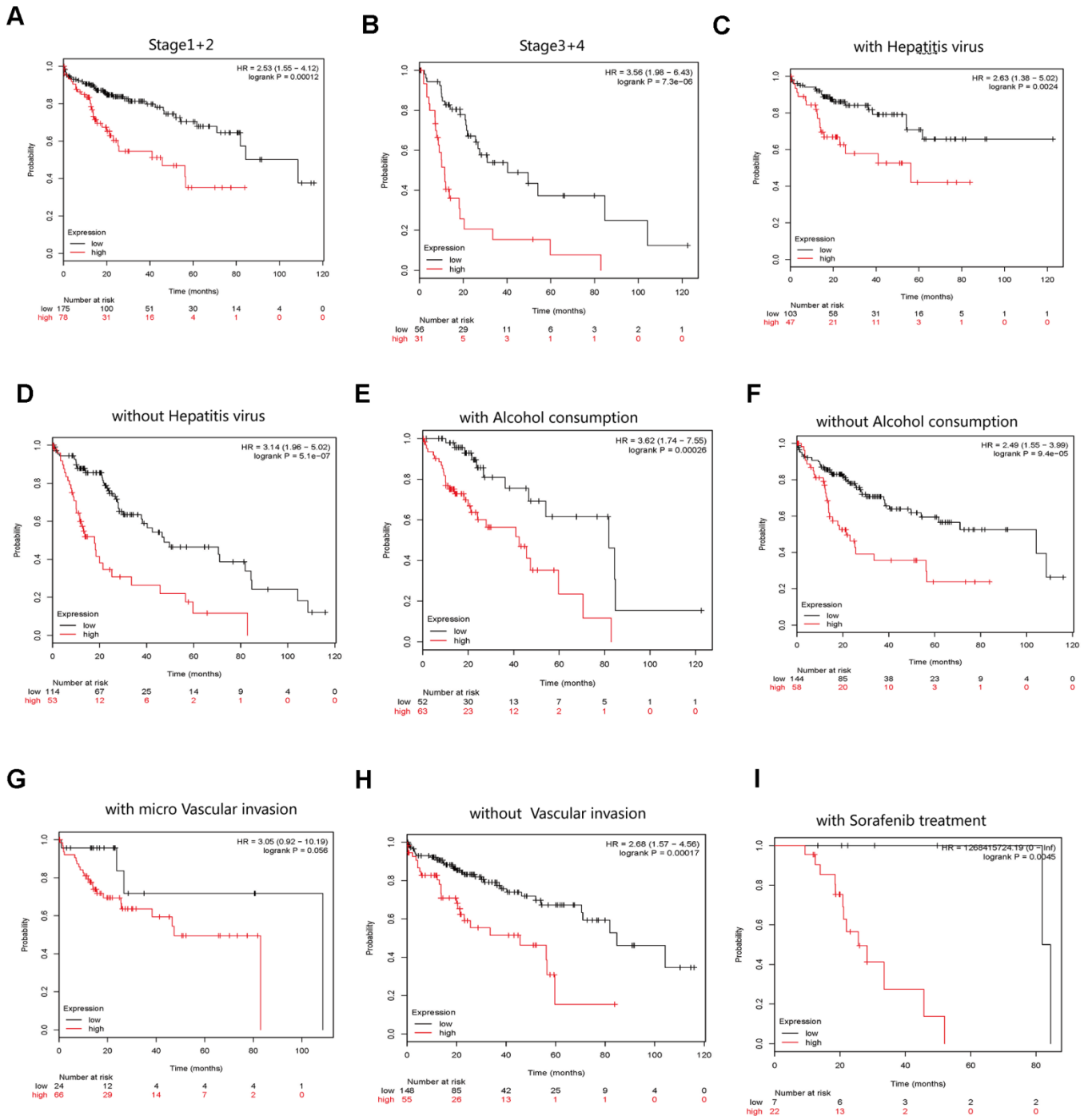
Supplementary Figure 9. The prognostic value of CBX8 in HCC. (**A–I**) Stratified analysis showed the correlation of CBX8 expression and overall survival in indicated groups in HCC from TCGA data using the Kaplan Meier-plotter website (http://kmplot.com/analysis/).
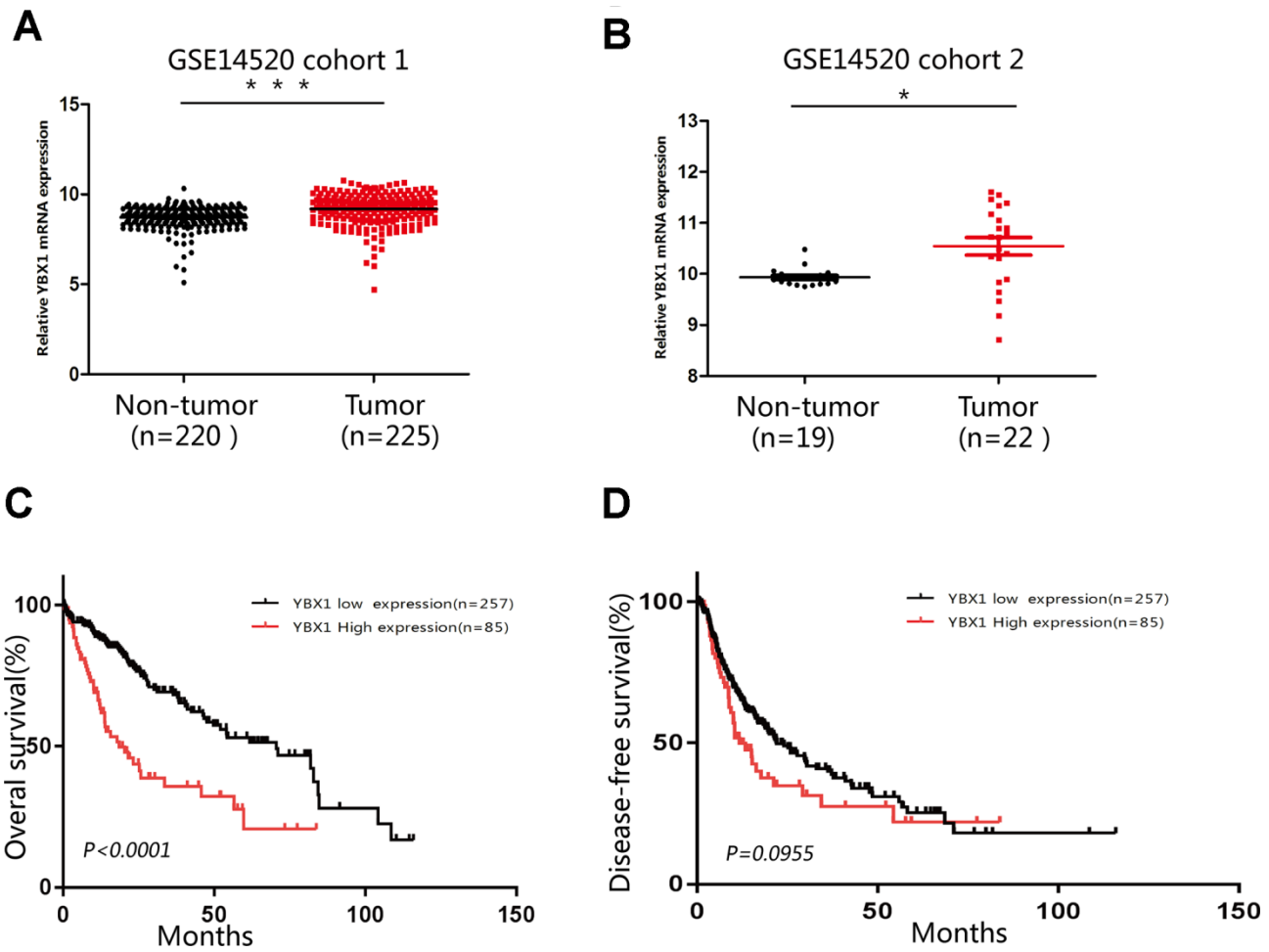
Supplementary Figure 10. YBX1 expression is up-regulated in HCC and is correlated with prognosis. (**A–B**) Expression of YBX1 in the GSE14520 cohort1 (*P* < 0.001) and GSE14520 cohort2 (*P* < 0.05). (**C, D**) Kaplan-Meier analysis of the overall and disease-free survival in the TCGA cohort based on YBX1 expression.

Supplementary Figure 11. The prognostic value of YBX1 in HCC. (**A–I**) Stratified analysis showed the correlation of YBX1 expression and overall survival in indicated groups in HCC from TCGA data using the Kaplan Meier-plotter website (http://kmplot.com/analysis/).