

Figure S1. FARSB knockdown suppresses the proliferation and migration of Huh7 cells. (A-B) CCK-8 (A) and EDU (B) showed that knockdown of FARSB suppressed the proliferation of Huh7 cells, scale: 100μm. Fluorescent images showing EdU positive cells nuclei (green) and total nuclei in the samples (Hoechst, blue). (C-D) Transwell (C) and wound-healing assay (D) showed that knockdown of FARSB suppressed cell migration of Huh7 cells. Scale: 100μm. (E) Colony formation assay showed that the colony formation ability of FARSB knockdown Huh7 cells decreased. *** : $P < 0.001$.

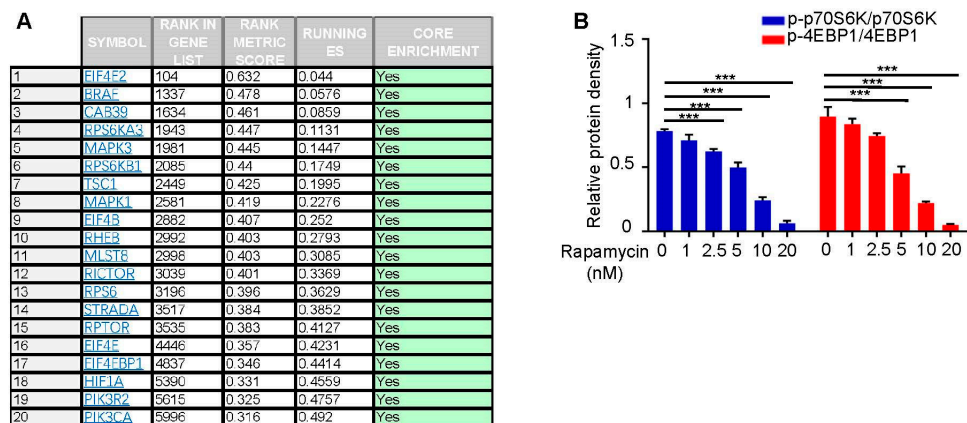


Figure S2. (A) Using the TCGA-LIHC data set, GSEA performed Kegg enrichment analysis, and the core molecules of the mTOR signaling pathway were significantly enriched in the FARSF high expression group. (B) The activation level of mTORC1 in MHCC97H cells treated with rapamycin at a gradient concentration for 24 h. *** : $P < 0.001$.

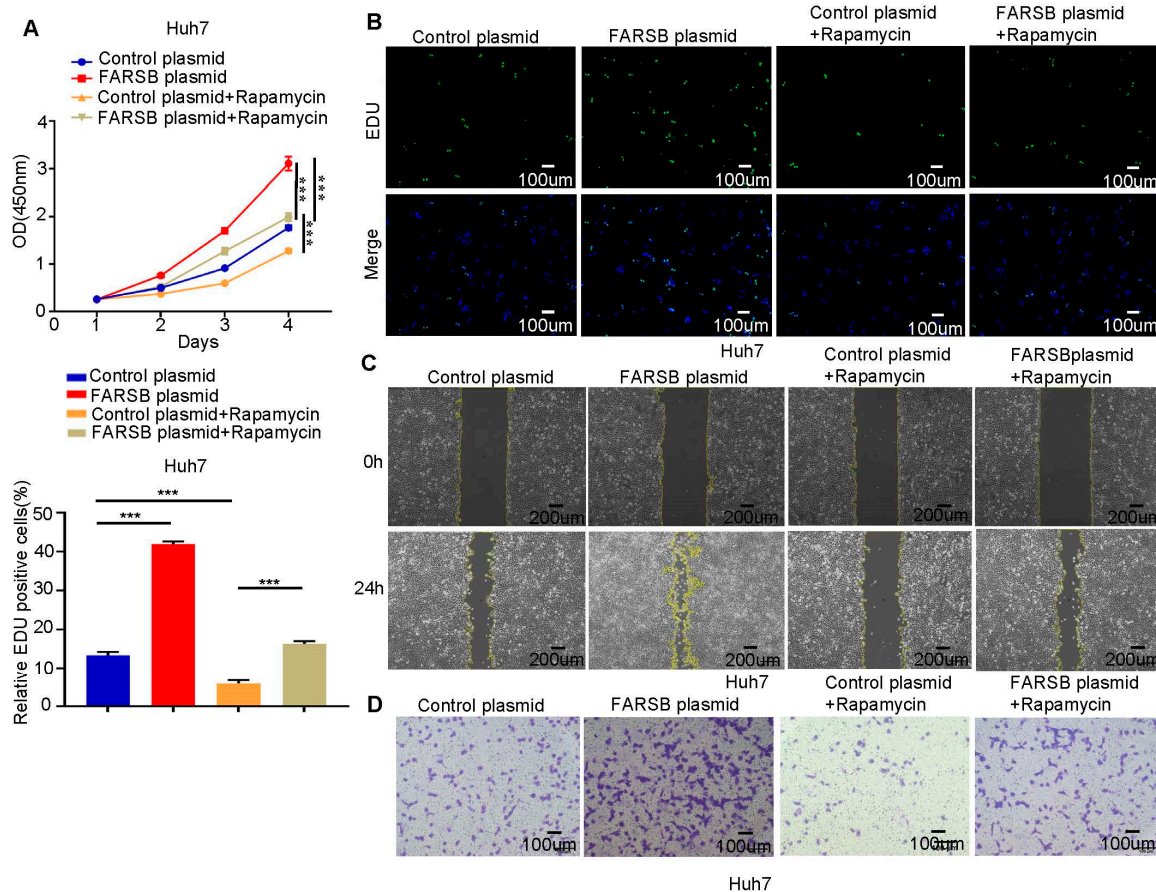


Figure S3. FARSF promotes the proliferation and migration of HCC cells by activating the mTORC1 signaling pathway. (A-D) Overexpression of FARSF and control group Huh7 cells were treated with 20 nM rapamycin for 48 h. CCK-8 (A) and EdU (B) were used to detect the proliferation of Huh7 cells. Fluorescent images showing EdU positive cells nuclei (green) and total nuclei in the samples (Hoechst, blue). Wound-healing assay (C) and Transwell assay (D) were used to detect the migration ability of Huh7 cells. *** : $P < 0.001$.

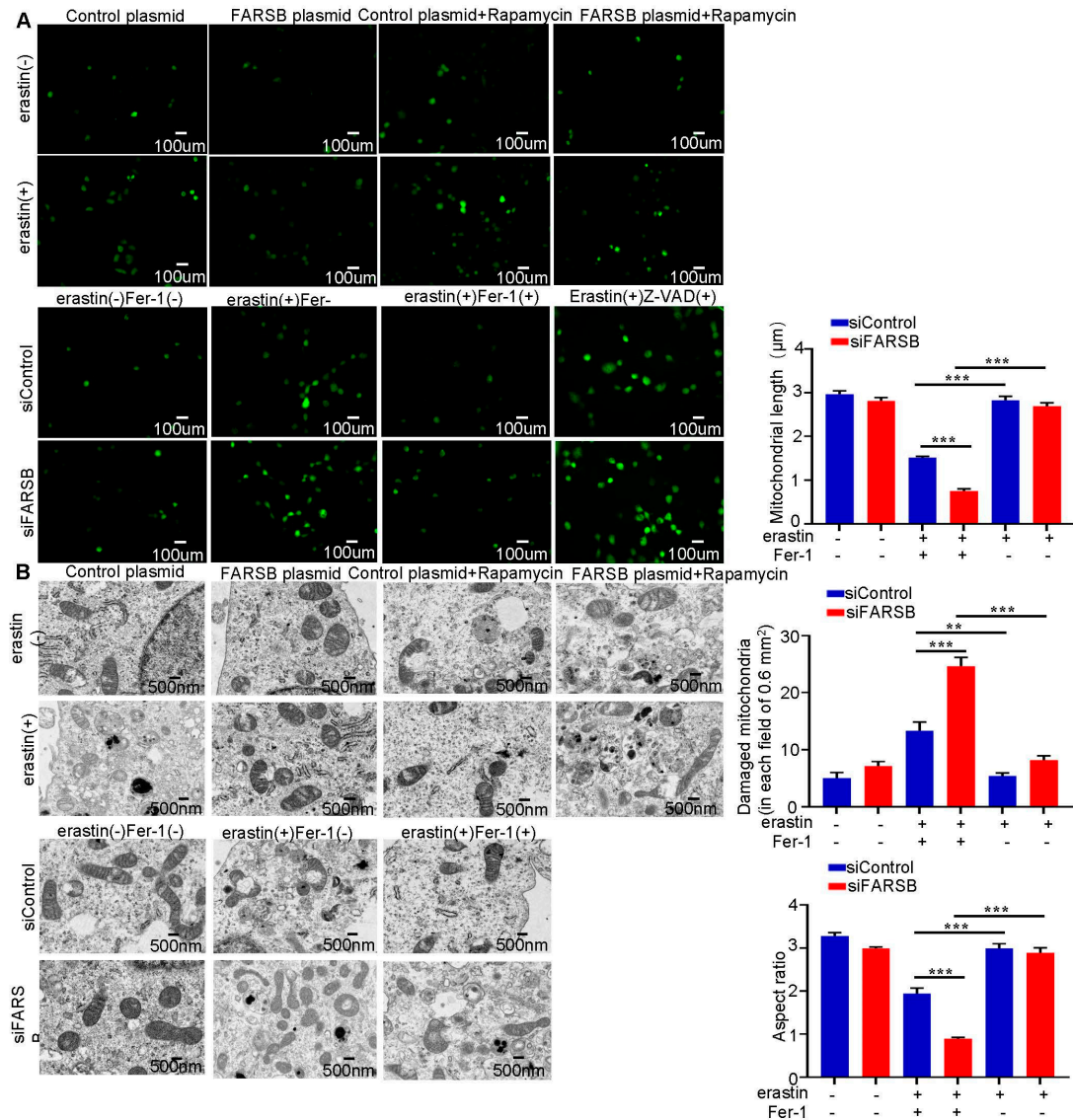


Figure S4. (A) MHCC97H cells with knockdown or overexpression of FARSB were treated with 10 µM erastin, and ROS was detected with or without ferrostatin-1 (2 µM), Z-VAD (10 µM) or rapamycin (20 nM). (B) (with or without 10µM erastin) Knockdown of FARSB (with or without 2µM ferrostatin-1), overexpression of FARSB (with or without 20nM rapamycin) and control group MHCC97H cells were observed under electron microscope. The morphology of mitochondria in each group was observed under the electron microscope, and the length of mitochondria, the number of mitochondrial damage and the aspect ratio were counted.** : $P < 0.01$, *** : $P < 0.001$.