**Figure legends** 



**Fig S1. NAT10 expression is upregulated in hepatoblastoma, promoting HB cell proliferation and metastasis. (A)** qRT-PCR detected the expression of NAT10 with knockdown in HB cell lines. (B) Western blot detected the protein expression of NAT10 with knockdown in HB cell lines.



**Fig S2. NAT10 upregulates the pentose phosphate pathway (PPP) in HB cells.** (A) Kit detection of NADPH level and production capacity in NAT10-deficient HB cells. (B) Kit detection of GSH production level in NAT10-deficient HB cells. (C) Bodipy detection of lipid synthesis level in NAT10-deficient HB cells. (D) EDU assay for measuring the proliferation capacity of NAT10-deficient HB cells. (E-F) CCK-8 assay for assessing cell viability level after addition of Nuc and Nac.



**Fig S3. NAT10 mediates ac4C modification to upregulate G6PD expression**. (A) acRIPqRT-PCR detection of G6PD ac4C modification level after NAT10 knockdown. (B) Correlation analysis of NAT10 and G6PD expression in the TCGA database and tissue samples. (C) Dual-luciferase assay detected fluorescence intensity after NAT10 knockdown in HepG2 cell.



**Fig S4. NAT10 promotes malignant progression of HB by upregulating the G6PDdependent PPP pathway**. (A-D) Cell proliferation and invasion experiments assessing the proliferation and migration capabilities of G6PD-deficient HB cells. (E-F) Kits detected NADPH content and generation and GSH generation levels in G6PD-deficient HB cells. (G) The Transwell assay showed that knocking down G6PD could inhibit the increase in migration ability induced by NAT10 overexpression.(H-J) Detection of ROS levels, NADPH content and generation levels, and GSH generation levels in HepT1 cells using kits.



**Fig S5. YAP1 regulates NAT10 expression and activates PPP, thereby promoting malignant progression of HB.** (A-B) Cell proliferation assays detected the proliferative capacity of YAP1-deficient HB cells. (C) The wound healing assay assessed the migration level of YAP1-deficient HB cells. (D-E) Kit assays assessed NADPH content and generation and GSH generation levels in YAP1-deficient HB cells.(F) Transwell assays showed that NAT10 knockdown inhibited the enhancement of invasion induced by YAP1 overexpression.(G-I) Kit assays detected ROS levels, NADPH content and generation levels, and GSH generation levels in HepT1 cells.



**Fig S6. The NAT10 inhibitor Remodelin effectively inhibits the malignant progression of HB**. (A-B) The EDU assay showed that Remodelin inhibited proliferation capacity. (C-D) Kit assays detected NADPH content and generation and GSH generation levels in HB cells treated with Remodelin. (E) Effect of Remodelin on cell viability measured by MTT assay.