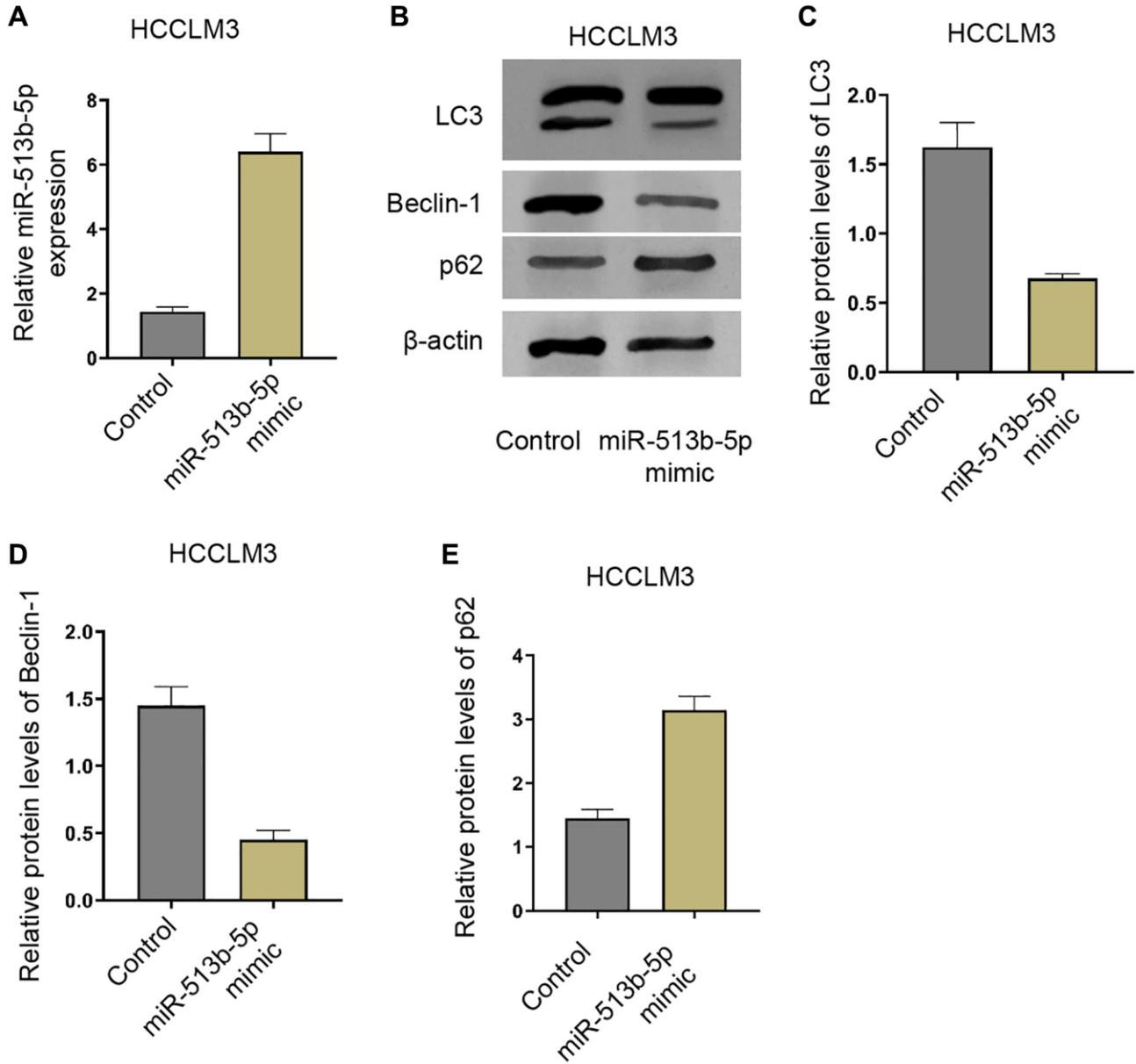
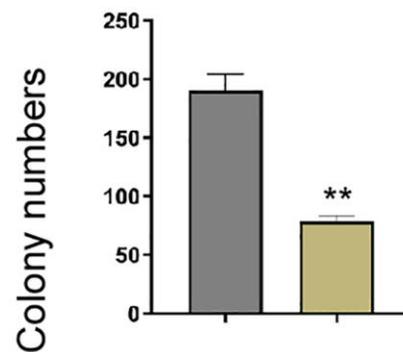
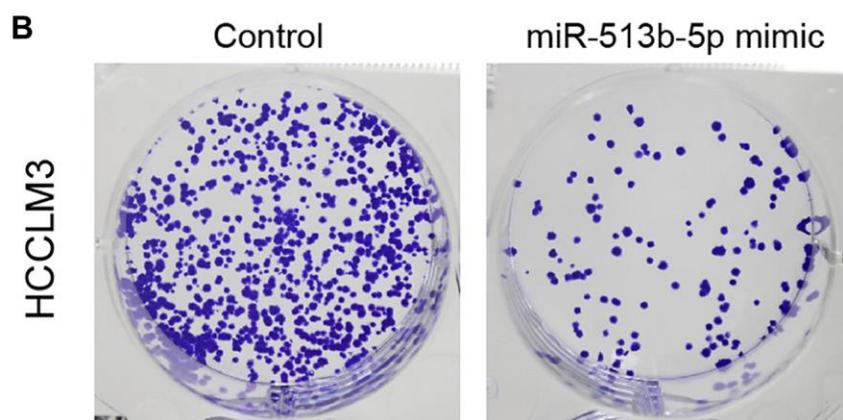
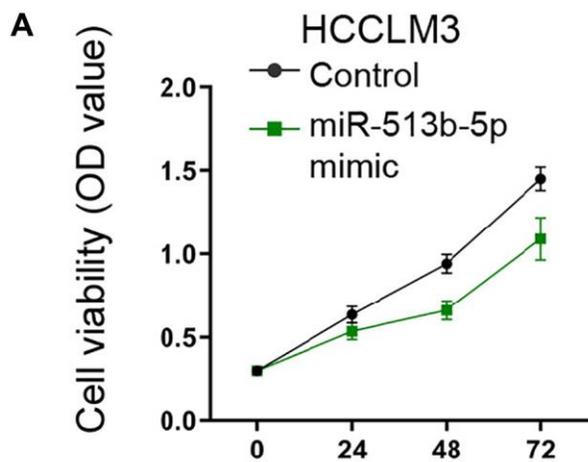


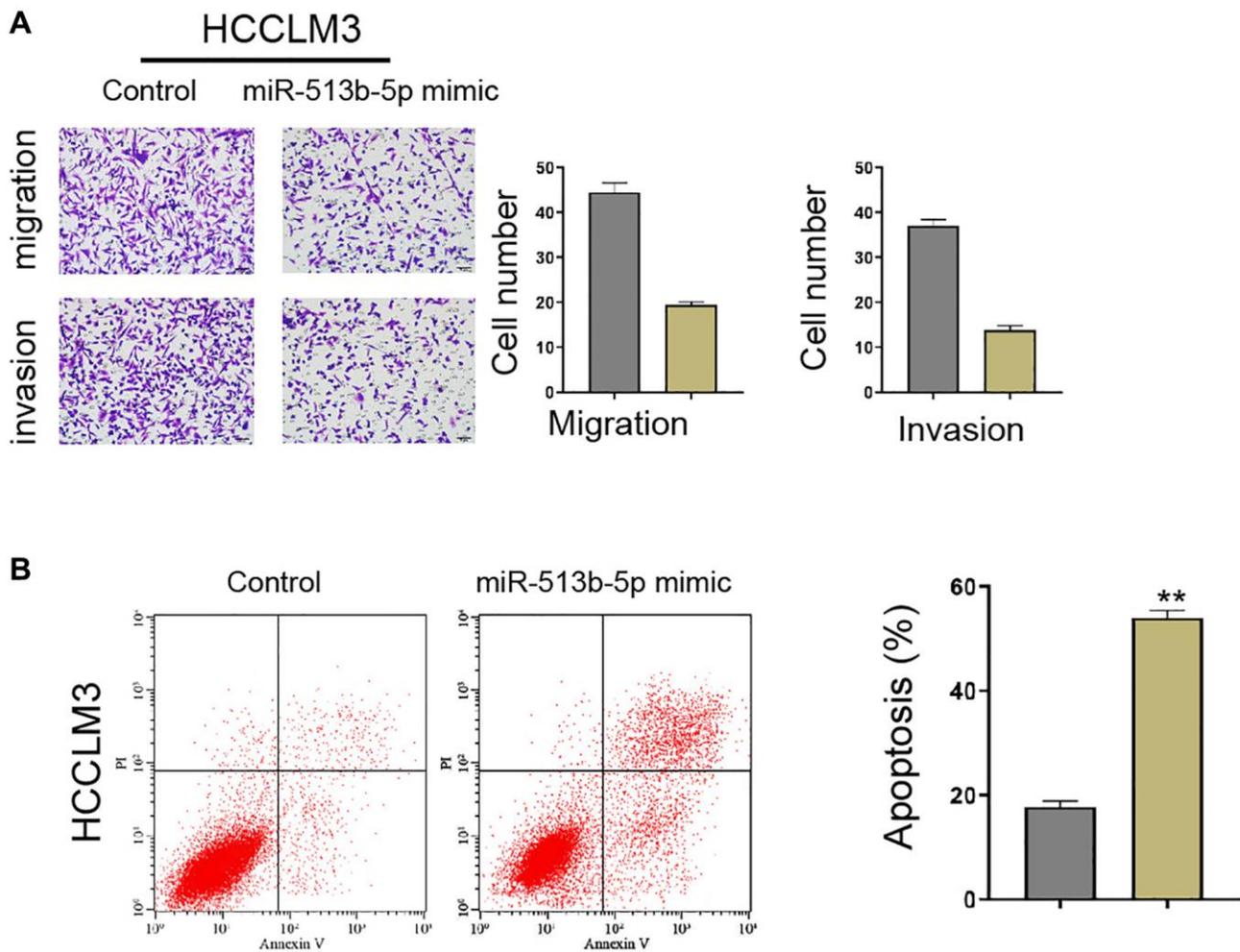
**SUPPLEMENTARY FIGURES**



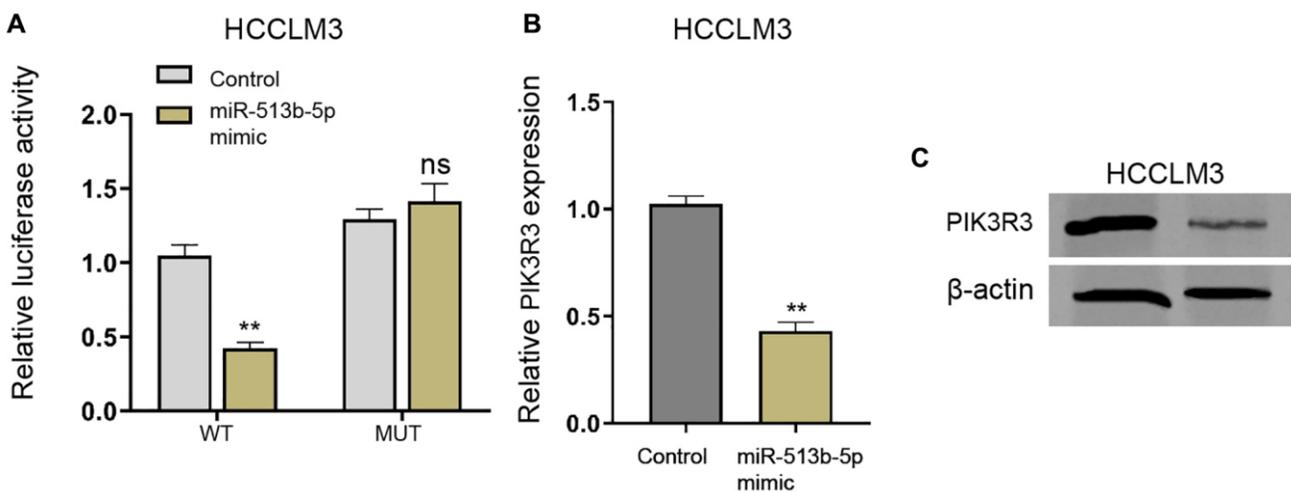
**Supplementary Figure 1. MiR-513b-5p inhibits autophagy in liver cancer cells.** (A–E) The HCCLM3 cells were treated with miR-513b-5p mimic. (A) The measurement of miR-513b-5p expression using qPCR. (B–E) The detection of LC3, beclin1, and p62 expression using Western blot analysis.



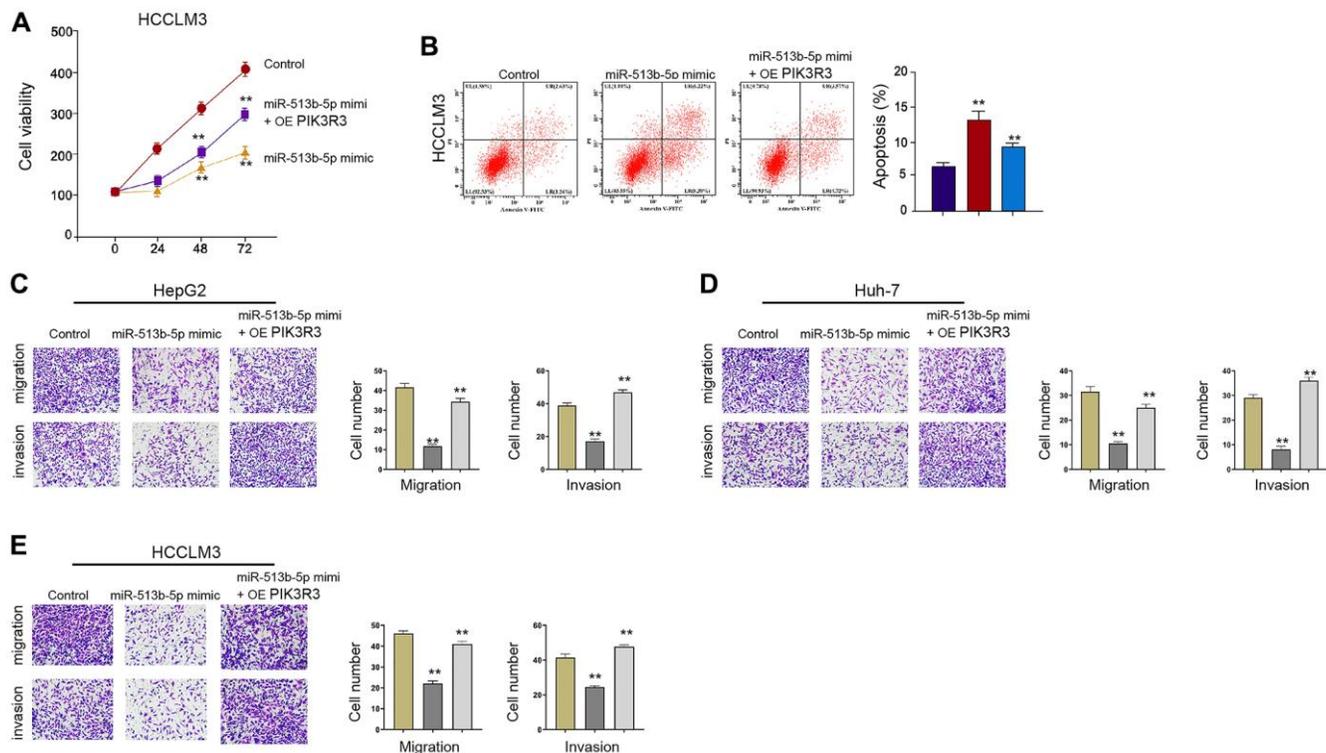
**Supplementary Figure 2. MiR-513b-5p represses liver cancer cell proliferation *in vitro*.** (A and B) The HCCLM3 cells were treated with miR-513b-5p mimic. (A) The analysis of cell proliferation using MTT assays. (B) The analysis of cell proliferation using colony formation assays.



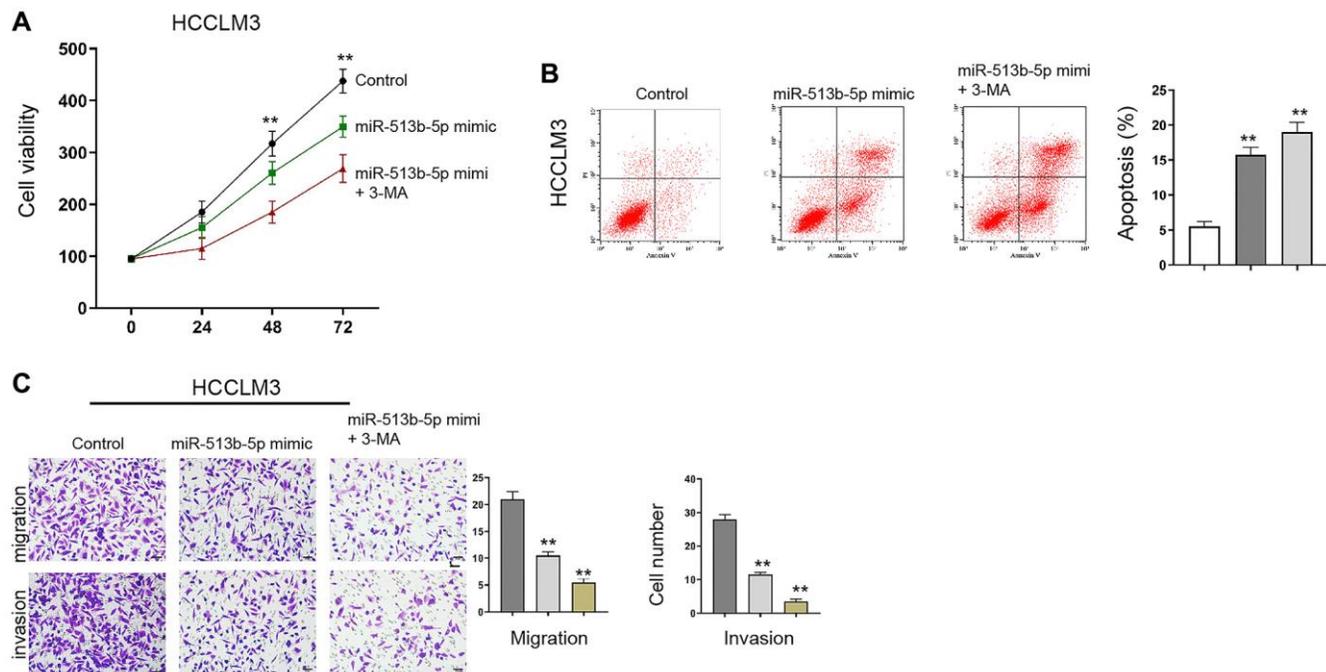
**Supplementary Figure 3. MiR-513b-5p suppresses migration/invasion and enhances apoptosis of liver cancer cells *in vitro*.** (A and B) The HCCLM3 cells were treated with miR-513b-5p mimic. (A) The analysis of cell migration/invasion using transwell assays. (B) The analysis of cell apoptosis using flow cytometry.



**Supplementary Figure 4. PIK3R3 is targeted by miR-513b-5p in liver cancer cells.** (A–C) The HCCLM3 cells were treated with miR-513b-5p mimic. (A) The analysis of luciferase activities using luciferase reporter gene assays. (B) The analysis of *PIK3R3* mRNA expression using qPCR. (C) The detection of *PIK3R3* expression using Western blot analysis.



**Supplementary Figure 5. *PIK3R3* is involved in miR-513b-5p-inhibited progression of liver cancer *in vitro*.** (A and B) The HCCLM3 cells were treated with miR-513b-5p mimic and pcDNA3.1- *PIK3R3*. (B) The analysis of cell apoptosis using flow cytometry. (C and D) The HepG2 and Huh-7 cells were treated with miR-513b-5p mimic and pcDNA3.1- *PIK3R3*. The analysis of cell migration/invasion using transwell assays. (E) The HCCLM3 cells were treated with miR-513b-5p mimic and pcDNA3.1- *PIK3R3*. The analysis of cell migration/invasion using transwell assays.



**Supplementary Figure 6. Autophagy inhibitor 3-MA reverses miR-513b-5p-mediated liver cancer progression *in vitro*.** (A–C) The HCCLM3 cells were treated with miR-513b-5p mimic and 3-MA (5 mM). (A) The analysis of cell proliferation using MTT assays. (B) The analysis of cell apoptosis using flow cytometry. (C) The analysis of cell migration/invasion using transwell assays.