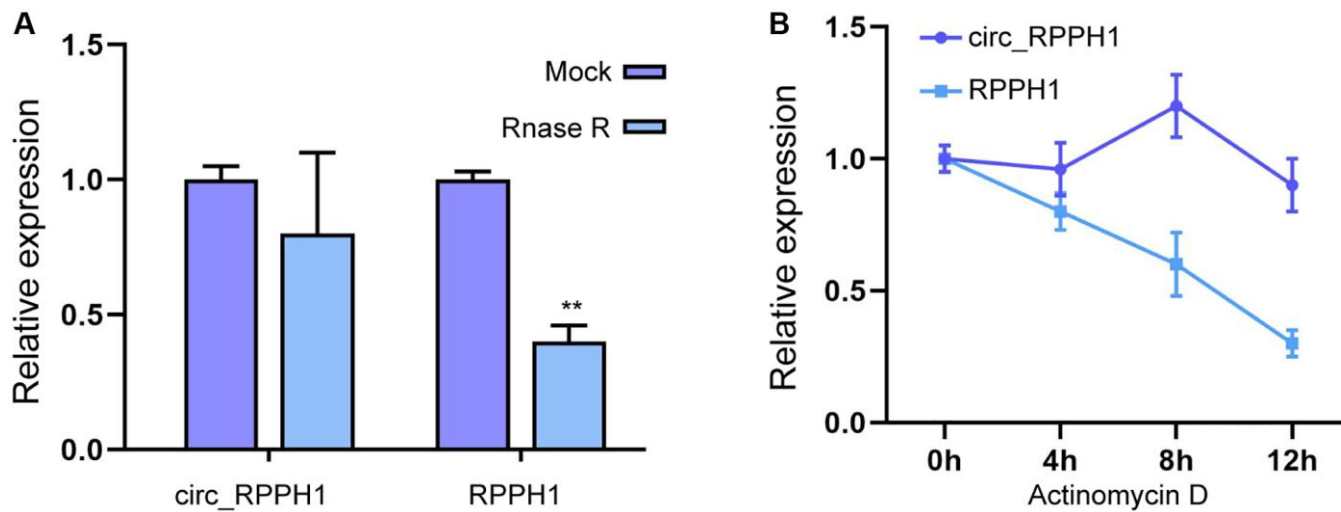
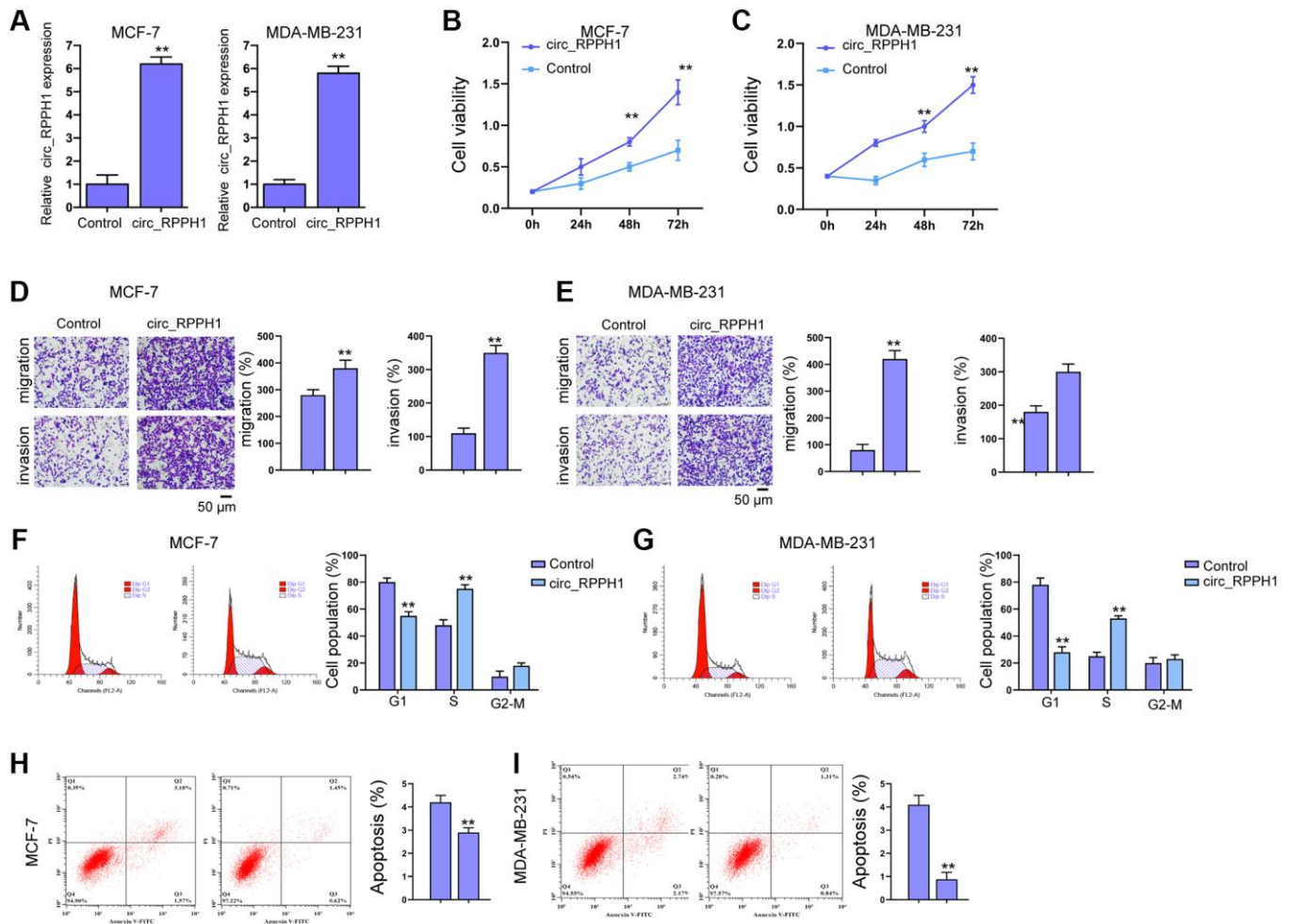


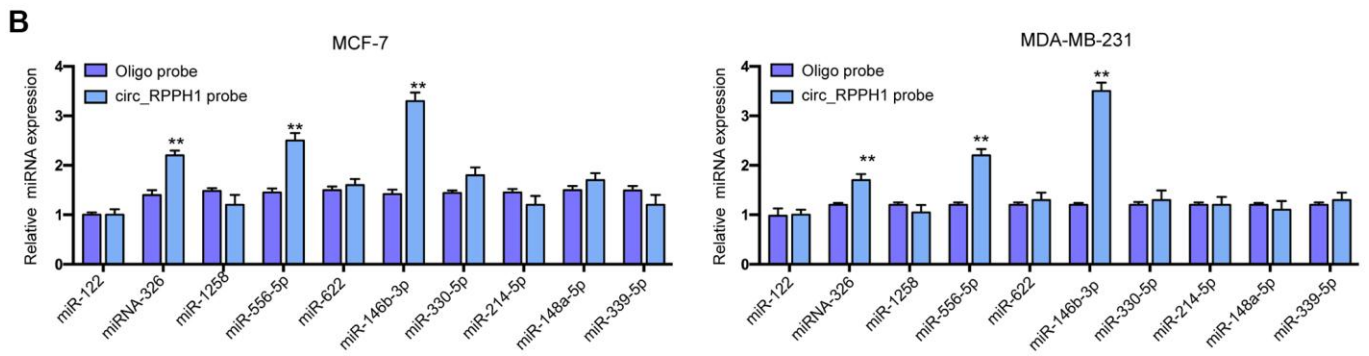
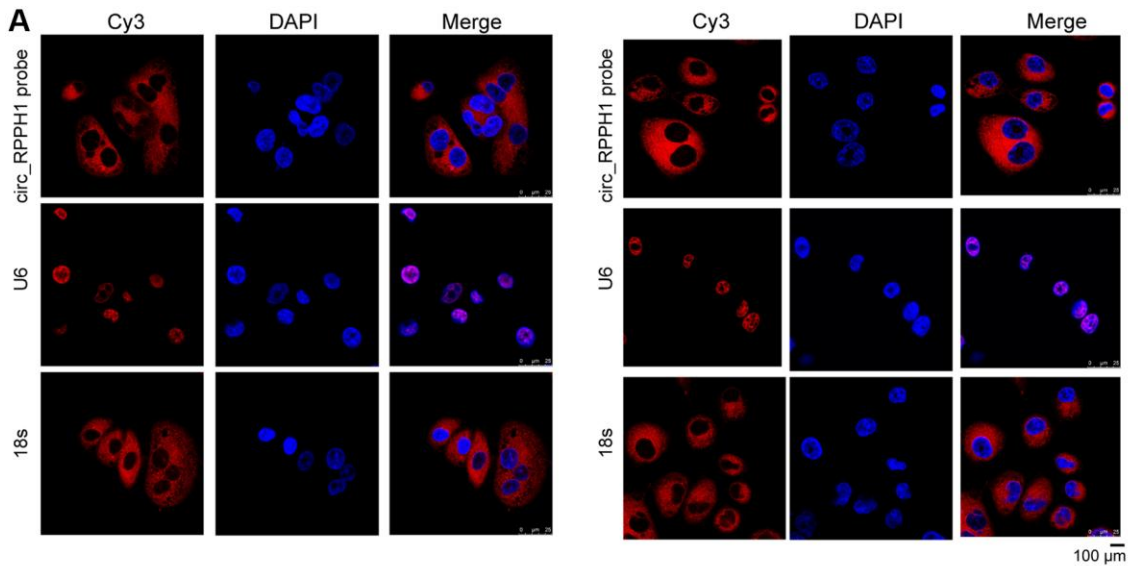
## SUPPLEMENTARY FIGURES



**Supplementary Figure 1. Characterization of circ\_RPPH1 in BC.** (A) qRT-PCR was used to detect the relative expression of circ\_RPPH1 in BC cells treated with RNase R. (B) qRT-PCR was used to detect the relative expression of circ\_RPPH1 in BC cells treated with Actinomycin D. \*\*indicates  $P < 0.01$ .



**Supplementary Figure 2. Carcinogenic role of circ\_RPPH1 in BC.** (A). qRT-PCR was used to detect the relative expression of circ\_RPPH1 in BC cells treated with circ\_RPPH1 overexpressing plasmid. (B, C) CCK-8 test was used to detect the proliferation of BC cells transfected with treated with circ\_RPPH1 overexpressing plasmid. (D, E) Transwell test showed the invasion and migration of BC cells treated with circ\_RPPH1 overexpressing plasmid. Scale bars, 50  $\mu$ m. (F–I) The changes of cell cycle and apoptosis rate of BC cells treated with circ\_RPPH1 overexpressing plasmid were detected by flow cytometry. \*indicates  $P < 0.05$ ; \*\*indicates  $P < 0.01$ .



**Supplementary Figure 3. circ\_RPPH1 acts as miR-146b-3p sponge for regulation.** (A) Subcellular localization analysis using FISH assays of circ\_RPPH1 distribution in MCF-7 and MDA-MB-231 cells. Scale bars, 100  $\mu$ m. (B) RNA pull down was used to analyze the interaction of circ\_RPPH1 with the indicated miRNAs in MCF-7 and MDA-MB-231 cells. \*indicates  $P < 0.05$ ; \*\*indicates  $P < 0.01$ .