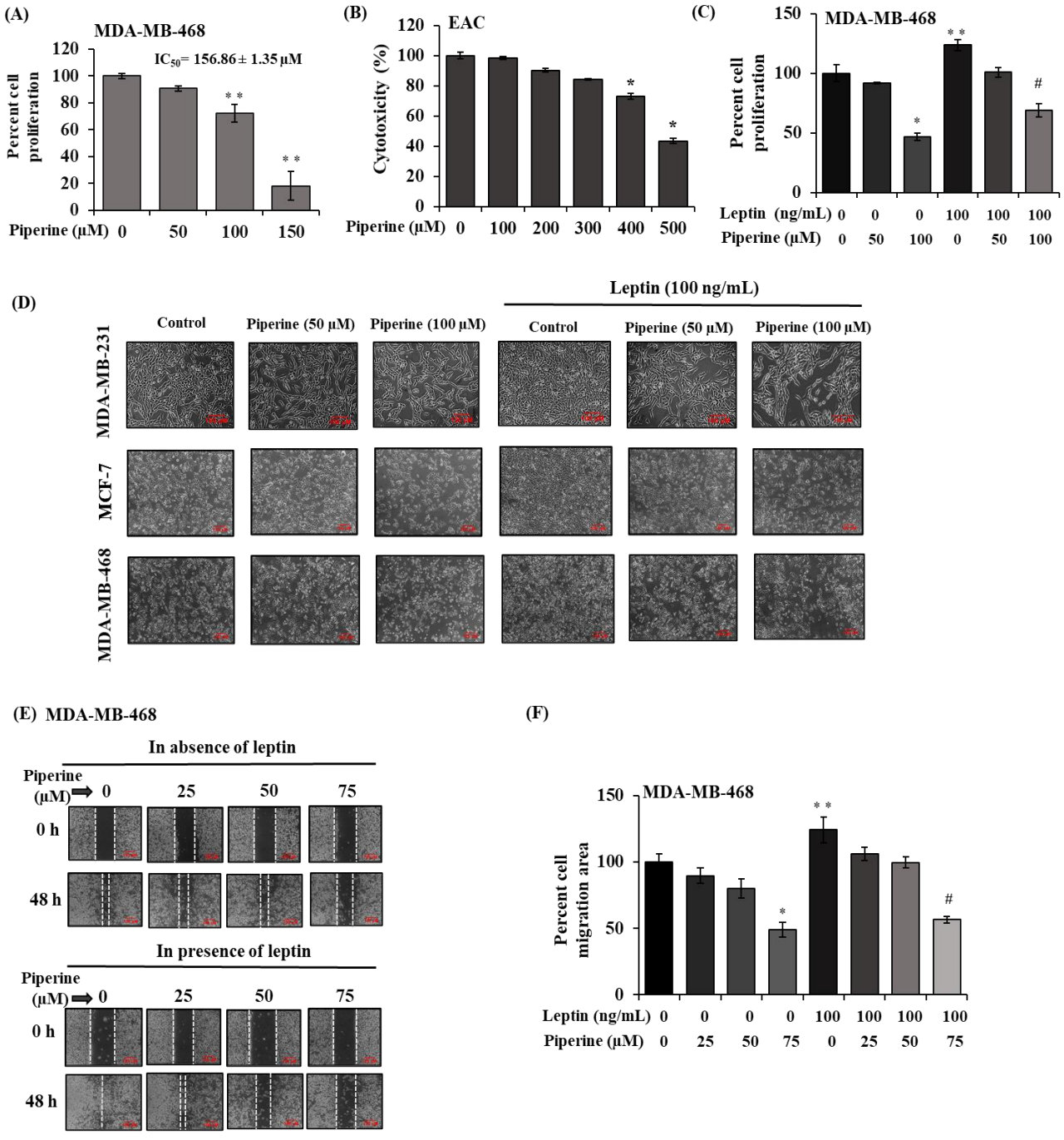
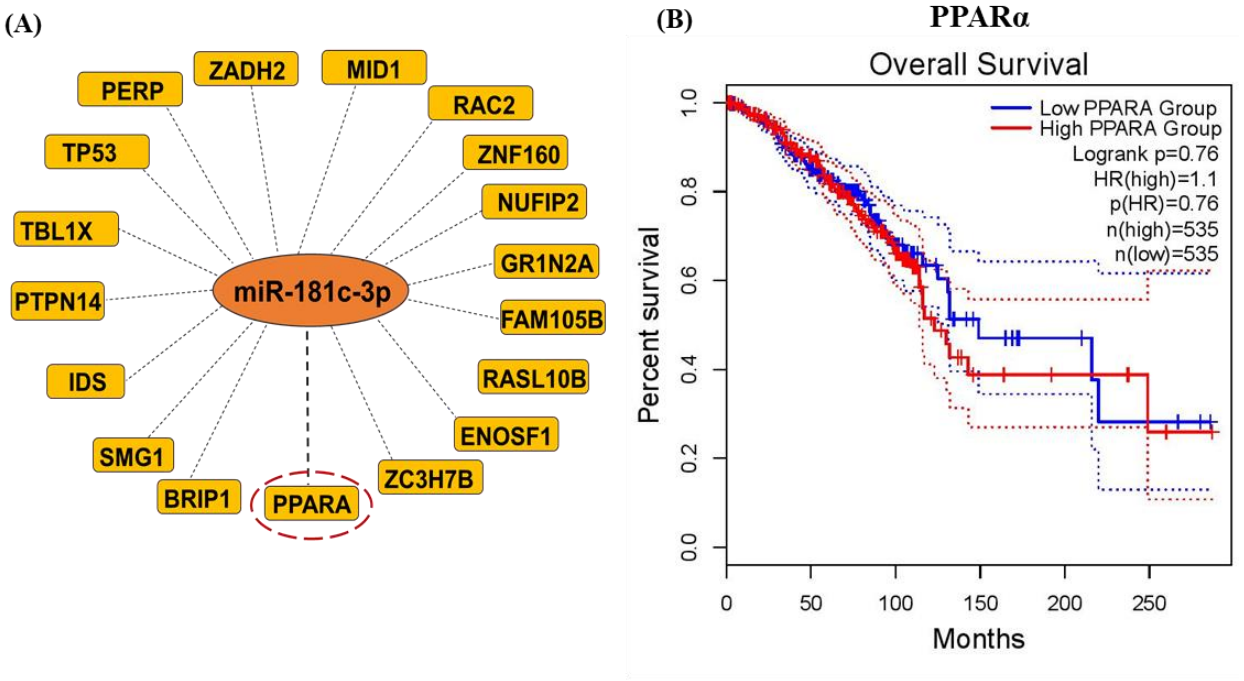
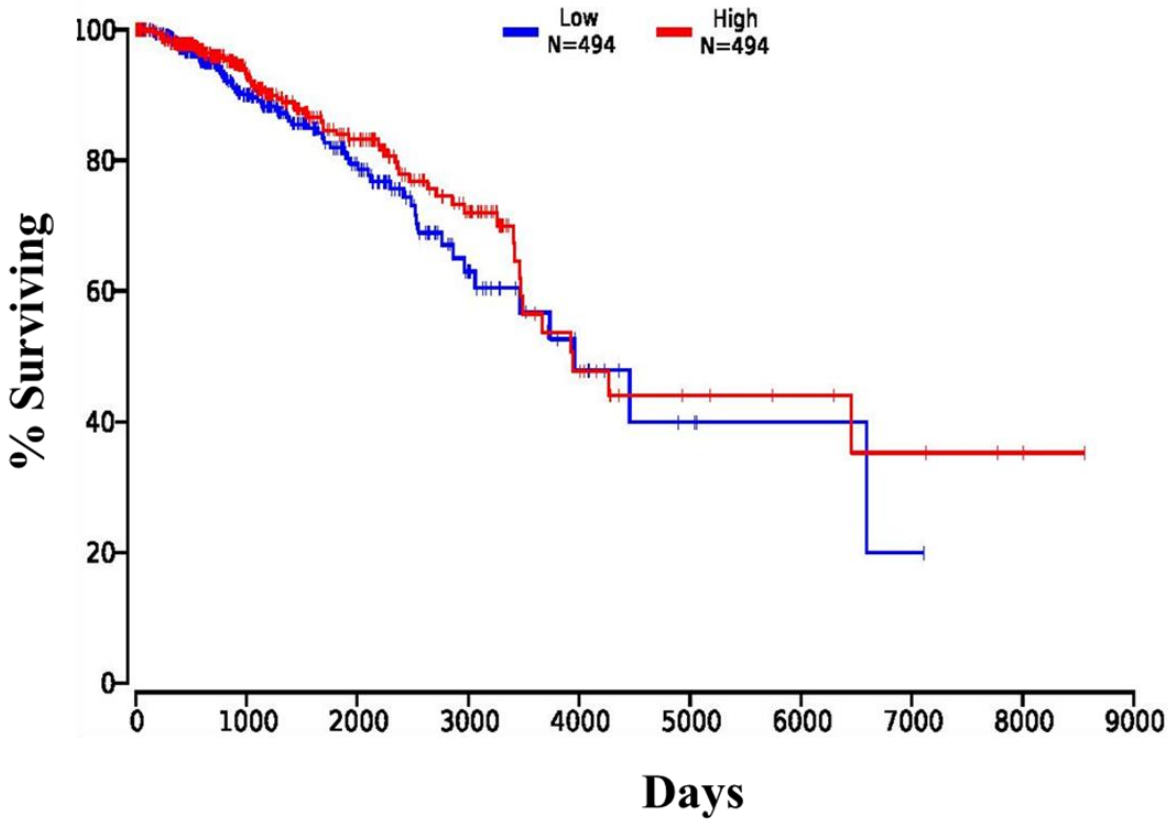
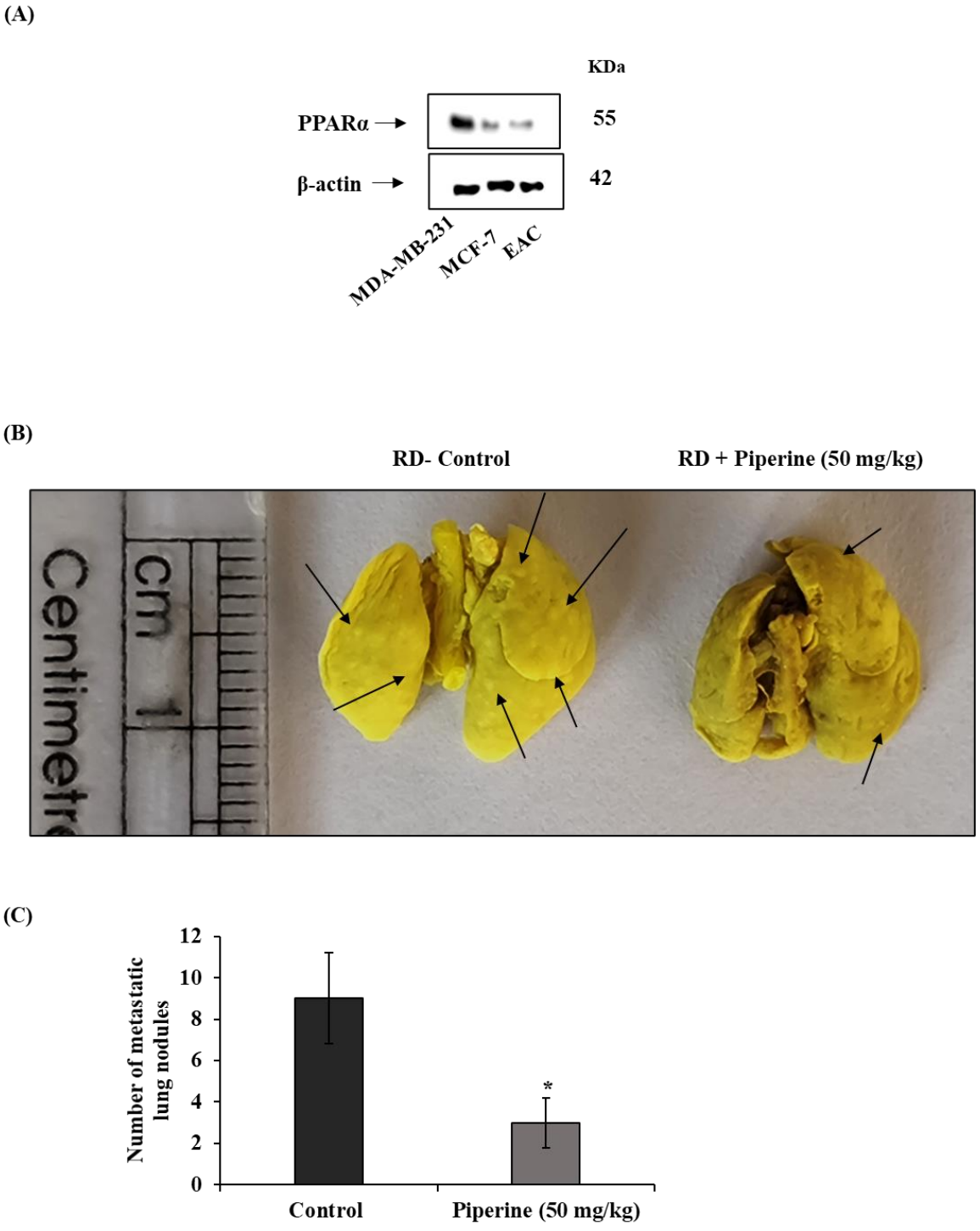


Supporting Information Figure S1. (A) MDA-MB-468 cells were treated with piperine as indicated in cell proliferation assay section and processed for MTT assay after 48 h. (B) The *in vitro* cytotoxicity of piperine in EAC cells was determined by trypan blue exclusion. (C) Piperine inhibits leptin-induced cell proliferation of MDA-MB-468 cells. (D) Morphological observations associated with leptin induction are shown in phase-contrast images. (E and F) Piperine inhibits leptin-induced cell migration in MDA-MB-468 cells. Data are represented as the average of three replicates (mean ± SE). $^{*}P < 0.05$, $^{**}P < 0.01$, against control; $^{\#}P < 0.05$, against leptin-treatment.





Supporting Information Figure S2. Target prediction and survival analysis of miR-181c-3p and PPARα (A) Gene target prediction for miR-181c-3p. (B and C) TCGA survival data of PPARα and miR-181c-3p.



Supporting Information Figure S3. (A) PPARα expression in EAC cells compared to breast cancer cell lines (MDA-MB-231 and MCF-7). (B) Piperine inhibited the metastatic potential of EAC tumors *in vivo.* EAC cells were injected into the tail vein, and piperine was administered orally for 21 days. Lungs were excised from animals of each group at the termination of the experiment, stained in Bouin's solution and the (C) number of stained metastatic lung nodules were counted and displayed as an average number of lung nodules per lung in each group (n=6), mean±SD.