

Supplementary Figures

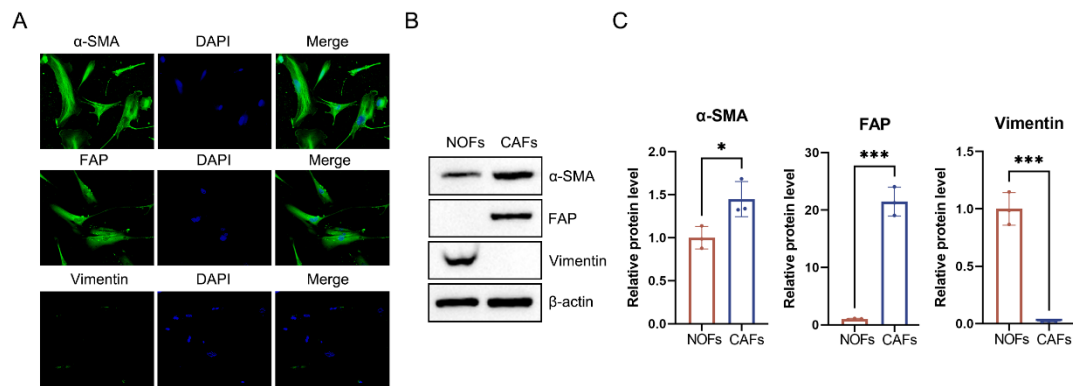


Figure S1. Characterization of isolated CAFs from osteosarcoma tissues. (A) Representative immunofluorescence images showing the expression of CAF-related markers α -SMA, FAP, and Vimentin in isolated CAFs. Nuclei were counterstained with DAPI. (B) Representative western blot images showing the protein expression of α -SMA, FAP, and Vimentin in NOFs and CAFs. β -actin was used as the loading control. (C) Quantitative analysis of α -SMA, FAP, and Vimentin protein levels in NOFs and CAFs. Data are presented as mean $\pm$ SD from three independent experiments. Statistical significance was determined using grouped *t*-test. * $P < 0.05$, *** $P < 0.001$.

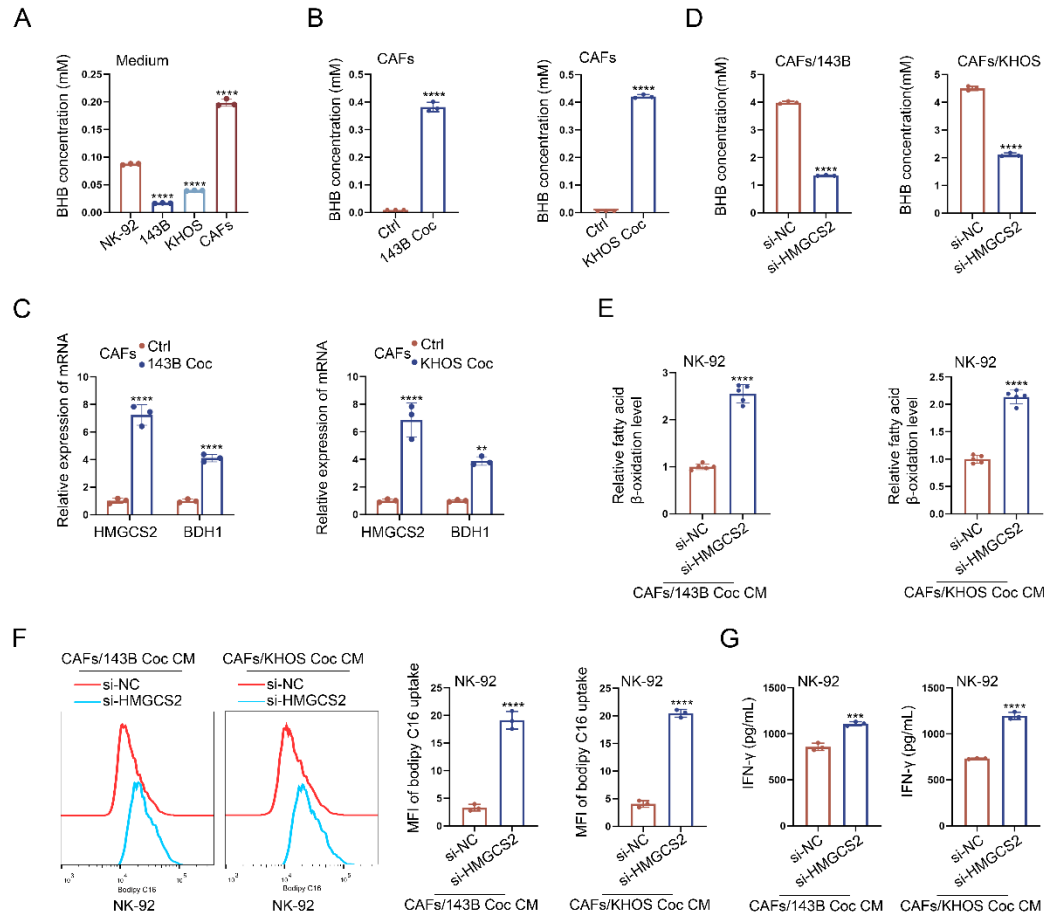


Figure S2. (A) Basal BHB levels in the supernatants of NK cells, osteosarcoma cells, and CAFs were measured by ELISA. Data are presented as mean $\pm$ SD ($n = 3$ independent experiments). **** $p < 0.0001$ by unpaired two-tailed Student's t -test. (B) BHB levels in the supernatants of CAFs after co-culture with osteosarcoma cells were measured by ELISA. Data are presented as mean $\pm$ SD ($n = 3$ independent experiments). **** $p < 0.0001$ by unpaired one-way ANOVA. (C) Expression levels of HMGCS2 and BDH1 in CAFs after co-culture with osteosarcoma cells were detected by RT-qPCR. Data are presented as mean $\pm$ SD ($n = 3$ independent experiments). ** $p < 0.01$, **** $p < 0.0001$ by unpaired one-way ANOVA. (D) After co-culture with osteosarcoma cells, CAFs were transfected with si-HMGCS2 or si-NC, and BHB levels in CAF supernatants were measured by ELISA. Data are presented as mean $\pm$ SD ($n = 3$ independent experiments). **** $p < 0.0001$ by

unpaired two-tailed Student's t-test. (E) NK cells were treated with supernatants from CAFs transfected with si-NC or si-HMGCS2, and fatty acid oxidation levels in NK cells were measured. Data are presented as mean $\pm$ SD (n = 3 independent experiments). ****p < 0.0001 by unpaired two-tailed Student's t-test. (F) NK cells were treated with supernatants from CAFs transfected with si-NC or si-HMGCS2, and lipid uptake capacity in NK cells was detected by flow cytometry. Data are presented as mean $\pm$ SD (n = 3 independent experiments). ****p < 0.0001 by unpaired two-tailed Student's t-test. (G) NK cells were treated with supernatants from CAFs transfected with si-NC or si-HMGCS2, and IFN- γ secretion levels in NK cells were measured by ELISA. Data are presented as mean $\pm$ SD (n = 3 independent experiments). ***p < 0.001, ****p < 0.0001 by unpaired two-tailed Student's t-test.