

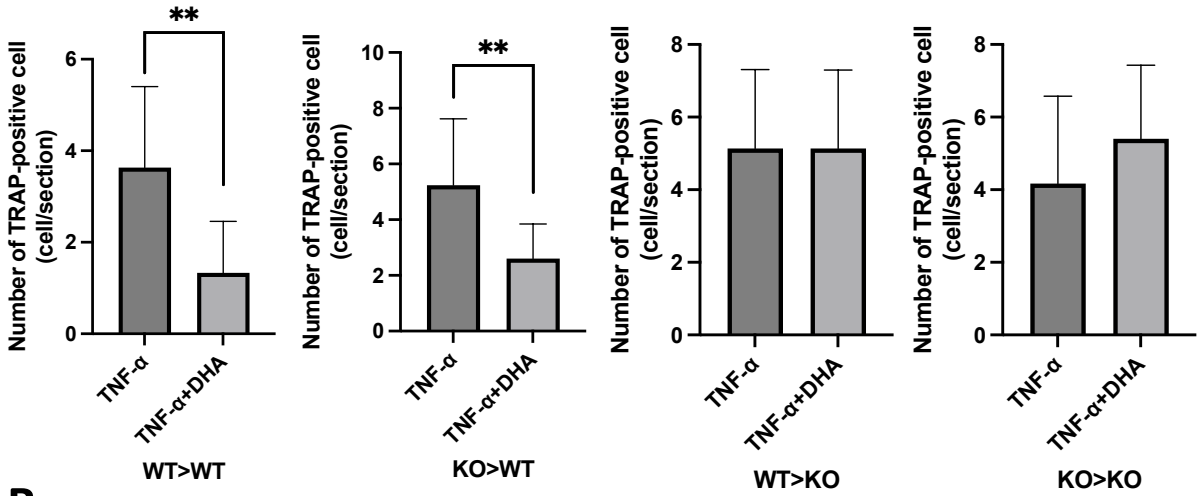
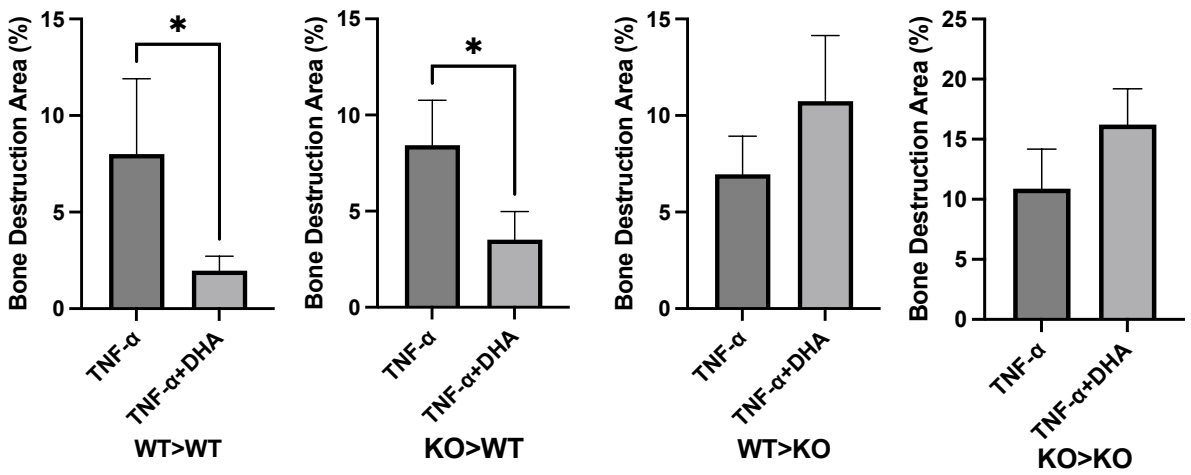
**A****B**

Figure S1. Comparison between TNF- $\alpha$  single administration and TNF- $\alpha$  and DHA co-administration groups, in (A) the number of TRAP-positive cells and (B) the percentage of bone resorption in the sagittal suture. DHA significantly decreases the osteoclast formation and bone resorption in WT>WT and KO>WT groups but not in WT>KO or KO>KO groups. The bars are expressed as means and the error bars represent SD. The statistical significance of differences was determined with T tests. (\* P < 0.05, \*\* P < 0.01; n = 4).

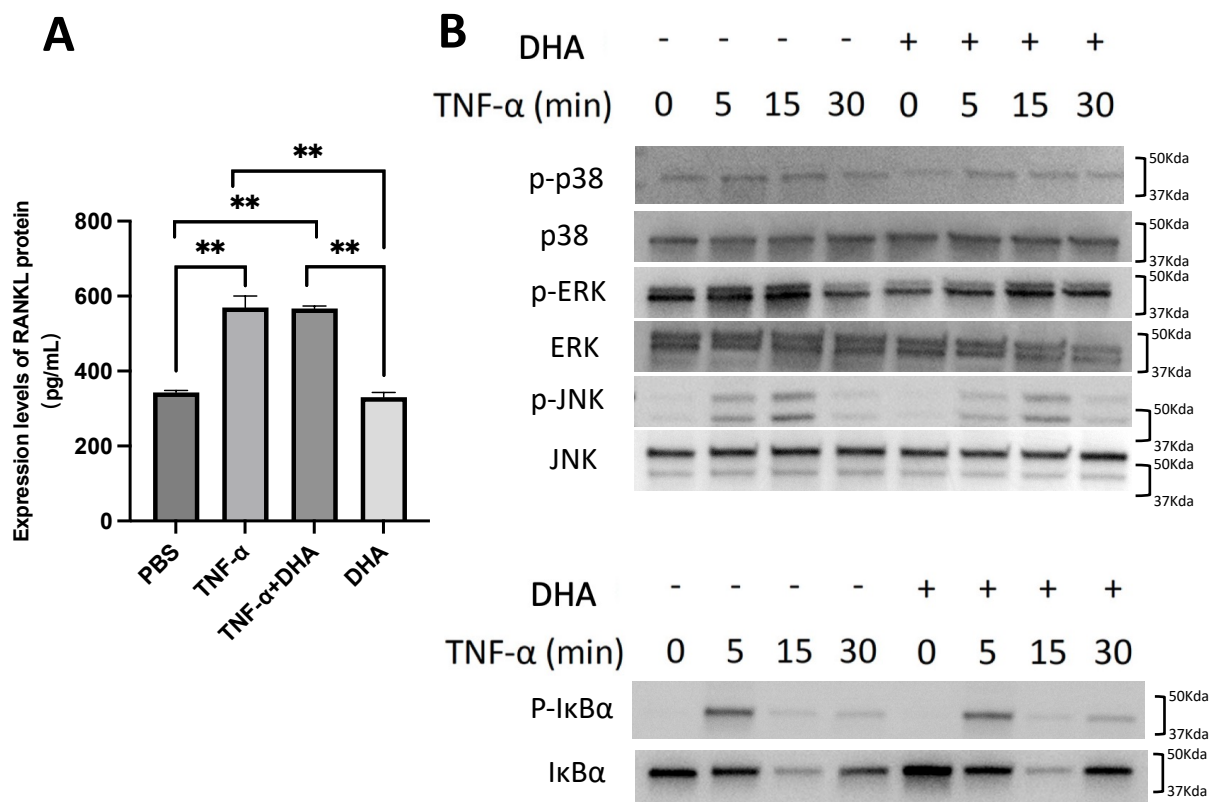


Figure S2. DHA does not suppress TNF- $\alpha$  triggered osteoblast related RANKL expression in GPR120-KO osteoblasts. DHA did not exert obvious effects on TNF- $\alpha$ -induced MAPKs and I $\kappa$ B activation in GPR120-KO osteoblasts. (A) The expression level of RANKL protein in GPR120-KO osteoblast was detected by ELISA. (B) Osteoblasts were incubated with TNF- $\alpha$  (100 ng/mL) with DHA (100 ng/mL) or TNF- $\alpha$  (100 ng/mL) only. Osteoblasts were lysed and then analyzed by Western blotting using p38, phospho-p38, ERK1/2, phospho-ERK1/2, JNK, phospho-JNK ;I $\kappa$ B and phospho-I $\kappa$ B antibodies. The bars are expressed as means and error bars represent SD. The statistical significance of differences was determined with Scheffé's tests. (\*  $P < 0.05$ , \*\*  $P < 0.01$ ;  $n = 4$ ).