

Supplementary Information

Supplementary Figure S1

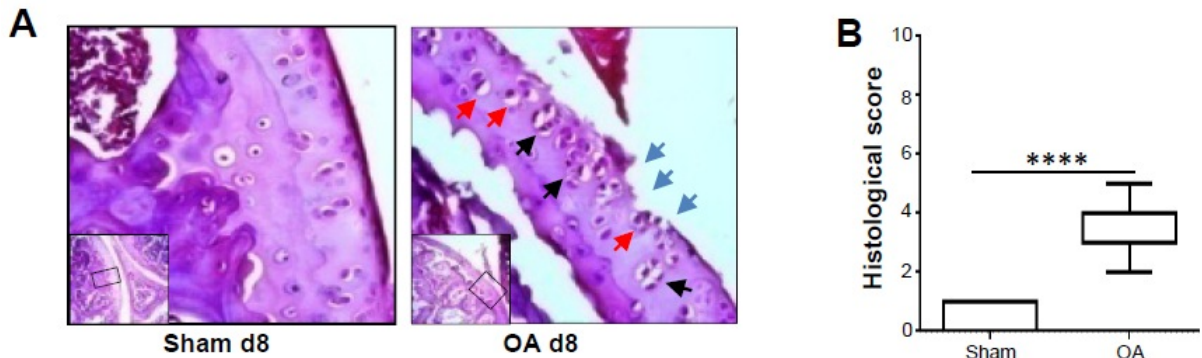


FIGURE S1. Cartilage degeneration in mouse model of human OA. Sham and ACL transected mice were sacrificed at day 8 post-surgery and examined for various OA changes in articular cartilage. H&E stained knee joint sections were evaluated for cartilage articulation, zonation and cell phenotype, Magnification, 40x (A). OARSI score for evaluation of histological sections is represented as Box-and-Whisker plot (B). Data are pooled from three independent experiments and are presented as mean \pm SEM of 10–14 mice per group. Significance was calculated by a one-way ANOVA with a post hoc Tukey's multiple comparisons test between sham and OA groups. **** $p < 0.0001$ for OA versus sham.

Supplementary Figure S2

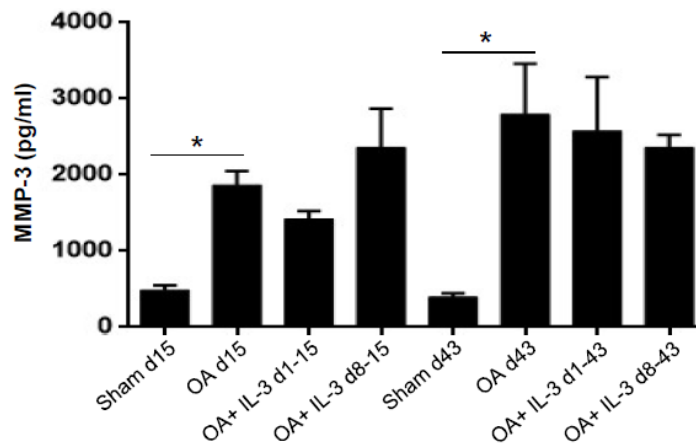


FIGURE S2. Effect of IL-3 on *in vivo* MMP-3 levels in OA mice. Tissue lysates of whole knee joints from sham, OA mice and IL-3 treated OA mice sacrificed on day 15 and 43 were assessed for the expression of MMP-3 using total MMP-3 ELISA. * $p < 0.05$ for OA versus sham. Data is generated from 4 mice in each group and are presented as mean \pm SEM.

Supplementary Figure S3

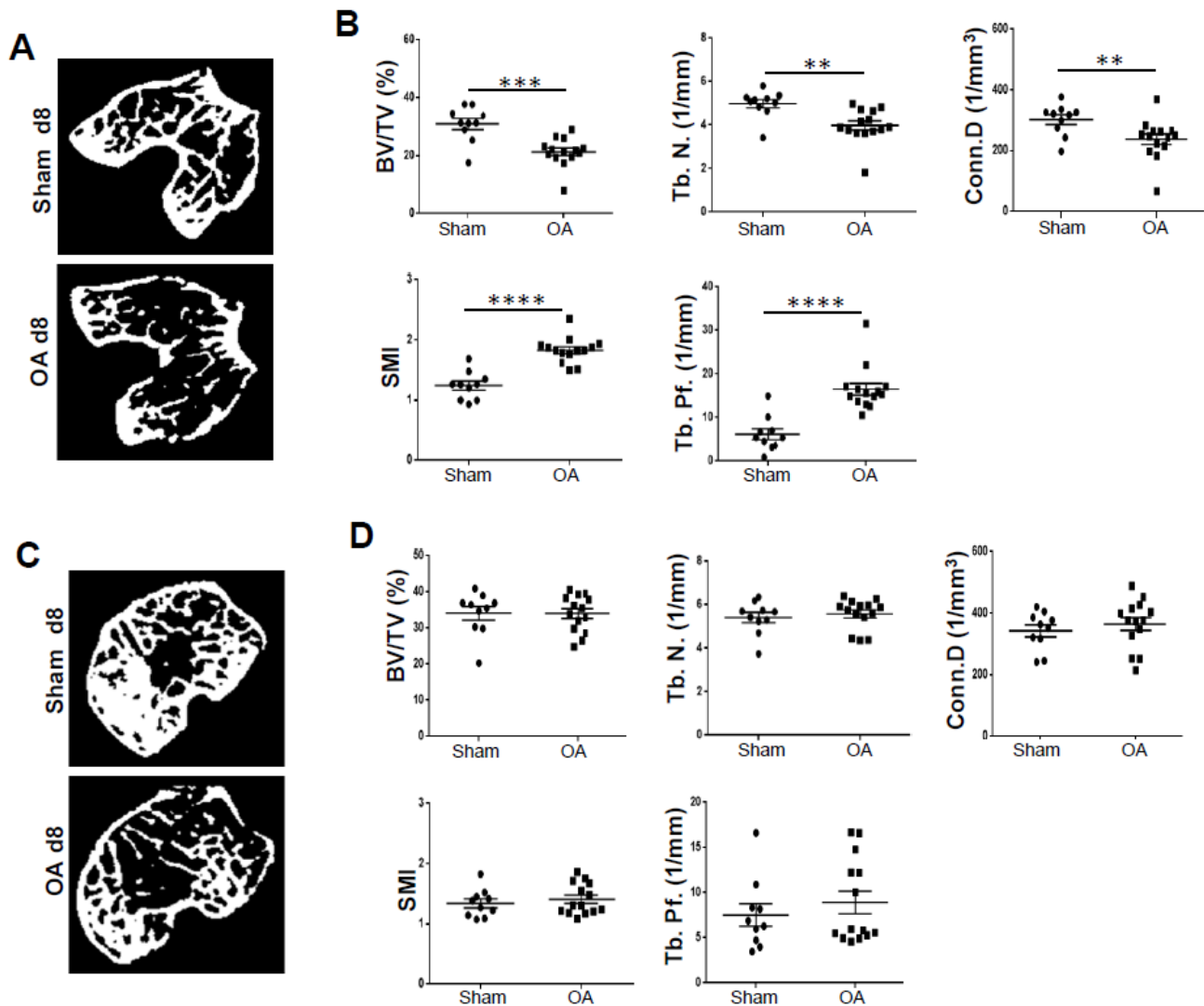


FIGURE S3. Degeneration of subchondral bone in mouse model of human OA. Sham and ACL transected mice were sacrificed at day 8 post-surgery and examined for various OA changes in subchondral bone. Representative binary images of transaxial radiographs generated by μ -CT for femoral (A) and tibial (C) subchondral bones of sham and OA mice at day 8. Various trabecular bone indices reflecting the quality of subchondral bone and topological parameters including BV/TV, Tb. N., Conn.D, SMI and Tb. Pf. were quantified at day 8 for both femoral (B) and tibial (D) subchondral bones using μ -CT reconstructions. Data are pooled from three independent experiments and are presented as mean \pm SEM of 10–14 mice per group. Significance was calculated by a one-way ANOVA with a post hoc Tukey's multiple comparisons test between sham and OA groups. ** $p < 0.01$ or *** $p < 0.001$ or **** $p < 0.0001$ for OA versus sham.

Supplementary Figure S4

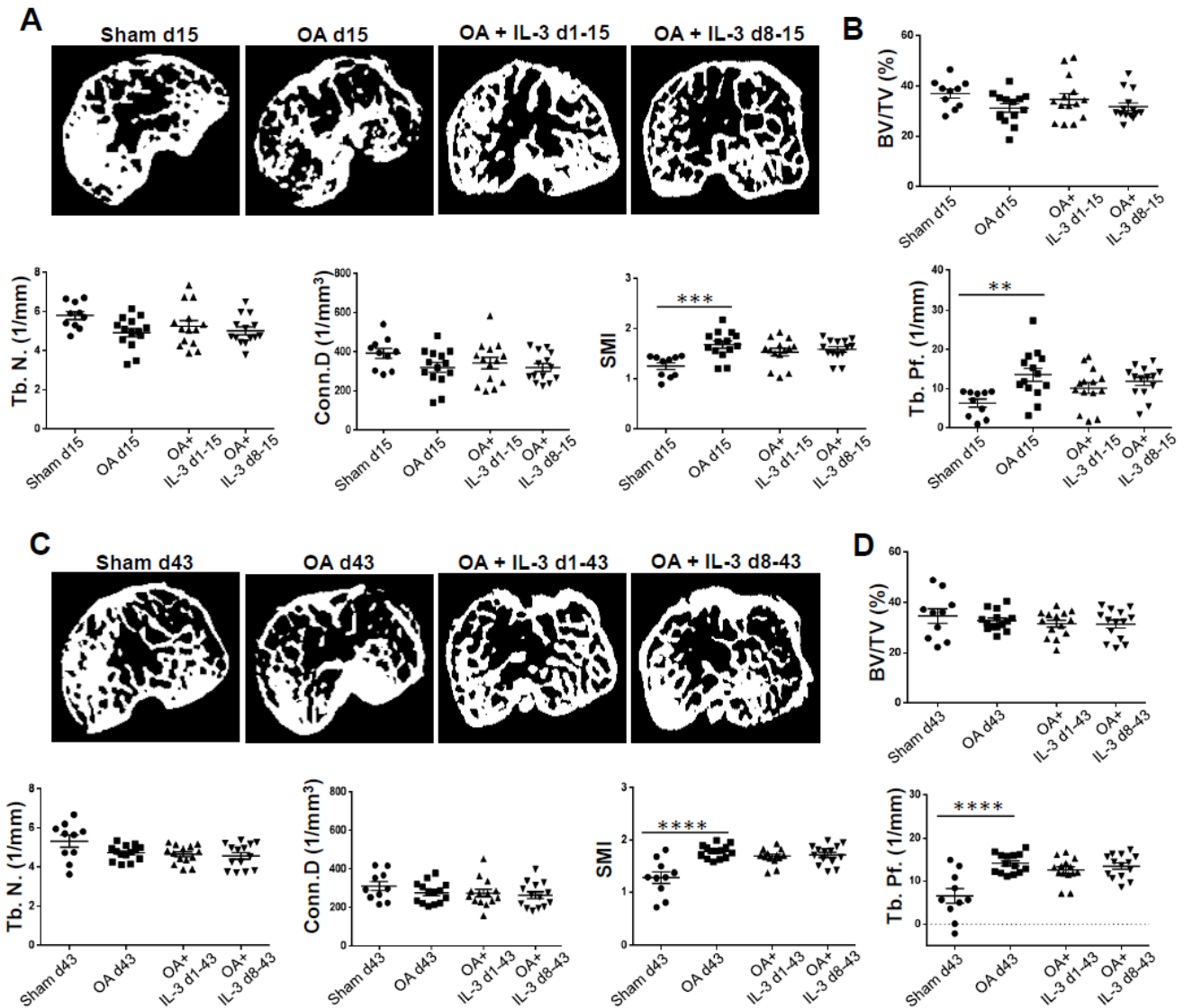


FIGURE S4. Effect of IL-3 on trabecular microarchitecture of tibial subchondral bone in OA mice. ACL-transected mice were injected intra-articularly with IL-3 (100 ng/day) using four different treatment regimens categorized into two types; the preventive treatments from day 1 to 15 and day 1 to 43 post-surgery, and the therapeutic treatments from day 8 to 15 and day 8 to 43 post-surgery. Whole knee joints were subjected to μ -CT for histomorphometric evaluation of tibial subchondral bone. Representative binary radiographs show the trabecular structure of various experimental groups at day 15 (**A**) and 43 (**C**). Various trabecular bone indices reflecting the quality of subchondral bone and topological parameters including BV/TV, Tb. N., Conn.D, SMI and Tb. Pf were quantified at day 15 (**B**) and 43 (**D**) using μ -CT reconstructions. Data are pooled from three independent experiments and are presented as mean \pm SEM of 10–14 mice per group. Significance was calculated by a one-way ANOVA with a post hoc Tukey's multiple comparisons test. ** $p < 0.01$ or *** $p < 0.001$ or **** $p < 0.0001$ for OA versus sham.