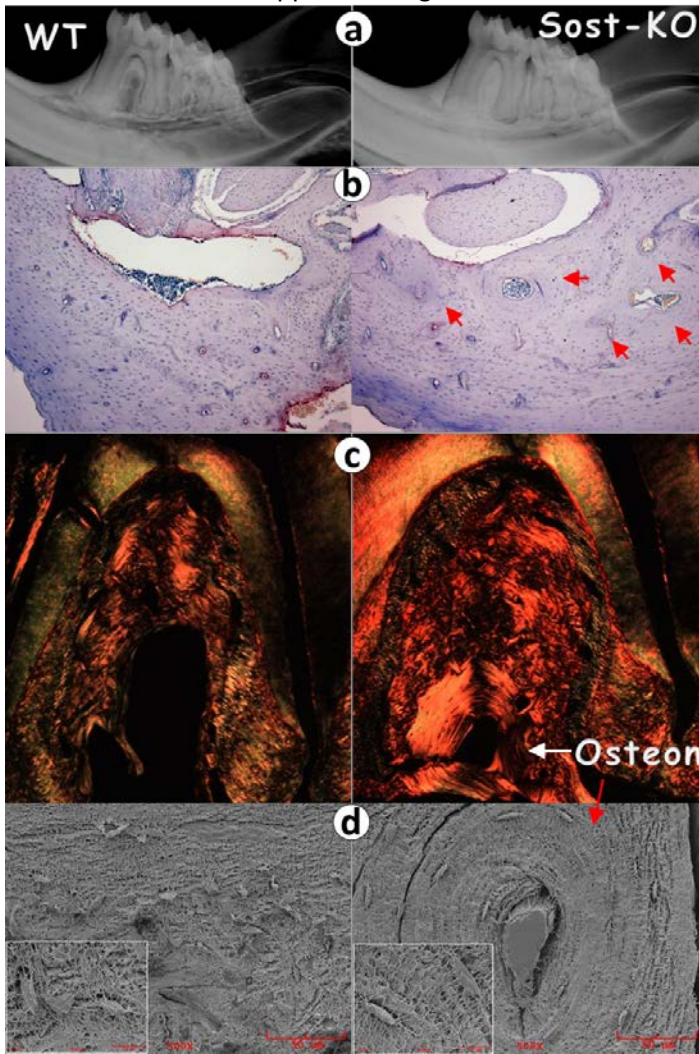


Supplement Fig 1



Supplementary Fig 1 An increased bone volume in the *Sost* KO mandibula is linked to development of osteons, the basic unit in the large mammalian bone. **a.** The X-ray images showed an increase in bone volume in the KO jawbone; **b.** The H&E images displayed numerous osteons (arrows); **c.** The polarized light image revealed an osteon-like collagen distribution; and **d.** The acid etched SEM images confirmed the osteocyte distributions in the osteon structure from the *Sost* KO bone.

Supplementary Fig 2 A loss of PDL fibers in periostin KO (PKO) and a partial restoration of PDL fibers in *Sost* KO-*periostin* KO (DKO) mandibular bone-PDL complexes in the first molar at age of 3-months using the Micro XCT™ technique. The following 3 movies (please see attached video files 1-3, correlating to WT, PKO, DKO), which were made of the high resolution scanning images from the buccale plane to the lingual plane (including the entire alveolar bone-PDL complexes), provide a virtual view of changes of PDL fibers in different condition. **a.** The left panel displayed the cropped image from the movie on WT; **b.** The middle panel showed the cropped image from the movie on PKO; and **c.** The right panel revealed the cropped image from the movie on DKO.

Supplement Fig 2

