Title: Supplementary Video 1.

**Description:** Intravital multiphoton imaging of skull bone tissues from Col2.3-ECFP mice. Left: an original video; cyan: mOBs and SOVs; blue: bone tissue, second harmonic generation. Right: a schematic video; cyan: mOBs; yellow balls: SOVs. mOBs are releasing and taking up SOVs. Scale bar:  $5 \mu m$ . Playback speed =  $1800 \times$ .

**Title:** Supplementary Video 2.

**Description:** In vitro imaging of primary osteoblasts releasing SOVs. Cyan: mOBs and SOVs. mOBs are releasing SOVs. Scale bar:  $10 \mu m$ . Playback speed =  $600 \times$ .

**Title:** Supplementary Video 3.

**Description:** In vitro imaging of primary osteoblasts taking up SOVs. Cyan: mOBs and SOVs. mOBs are taking up SOVs. Scale bar:  $10 \mu m$ . Playback speed =  $600 \times$ .

Title: Supplementary Video 4.

**Description:** In vitro imaging of primary osteoblasts from Col2.3-ECFP mice treated with PKHlabeled SOVs. Cyan: mOBs; red: PKH-labeled SOVs. mOBs are taking up PKH-labeled SOVs. Scale bar: 10  $\mu$ m. Playback speed = 600×.

**Title:** Supplementary Video 5.

**Description:** In vitro imaging of primary osteoblasts from Col2.3-ECFP mice treated with PKHlabeled SOVs. Cyan: mOBs; red: PKH-labeled SOVs. mOBs are taking up PKH-labeled SOVs. Scale bar: 10  $\mu$ m. Playback speed = 600×.