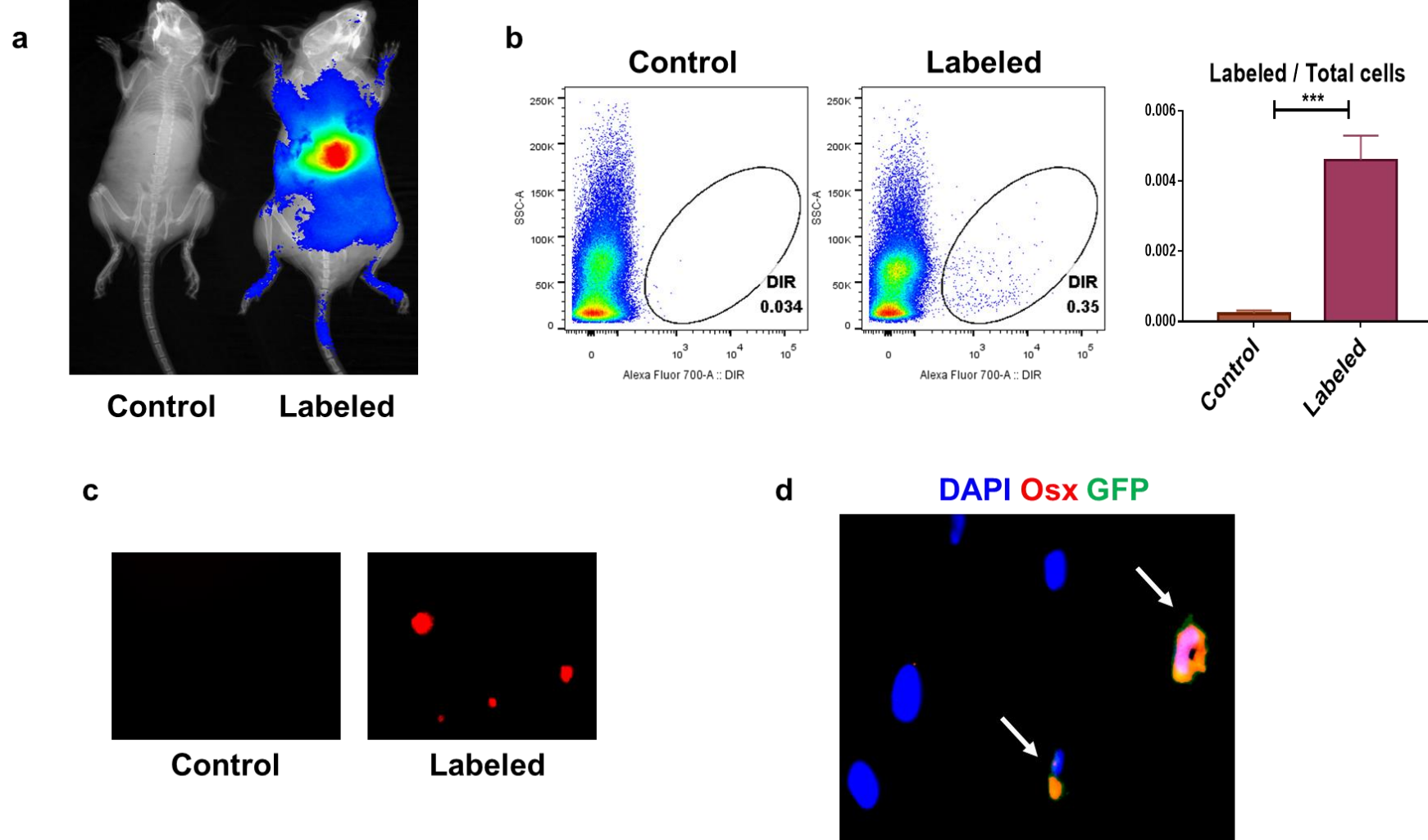


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Supplemental Information

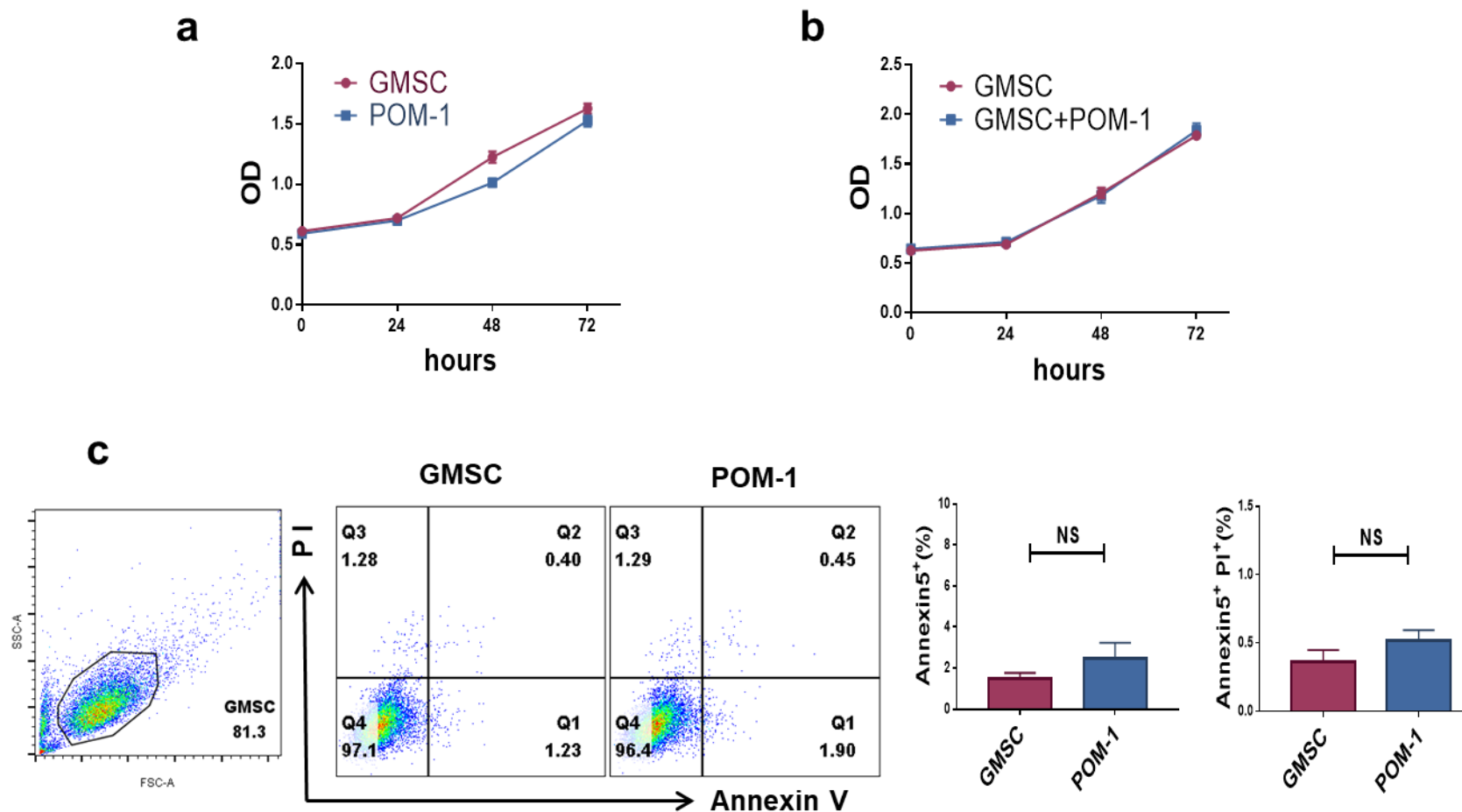
CD39 Produced from Human GMSCs Regulates the Balance of Osteoclasts and Osteoblasts through the Wnt/ β -Catenin Pathway in Osteoporosis

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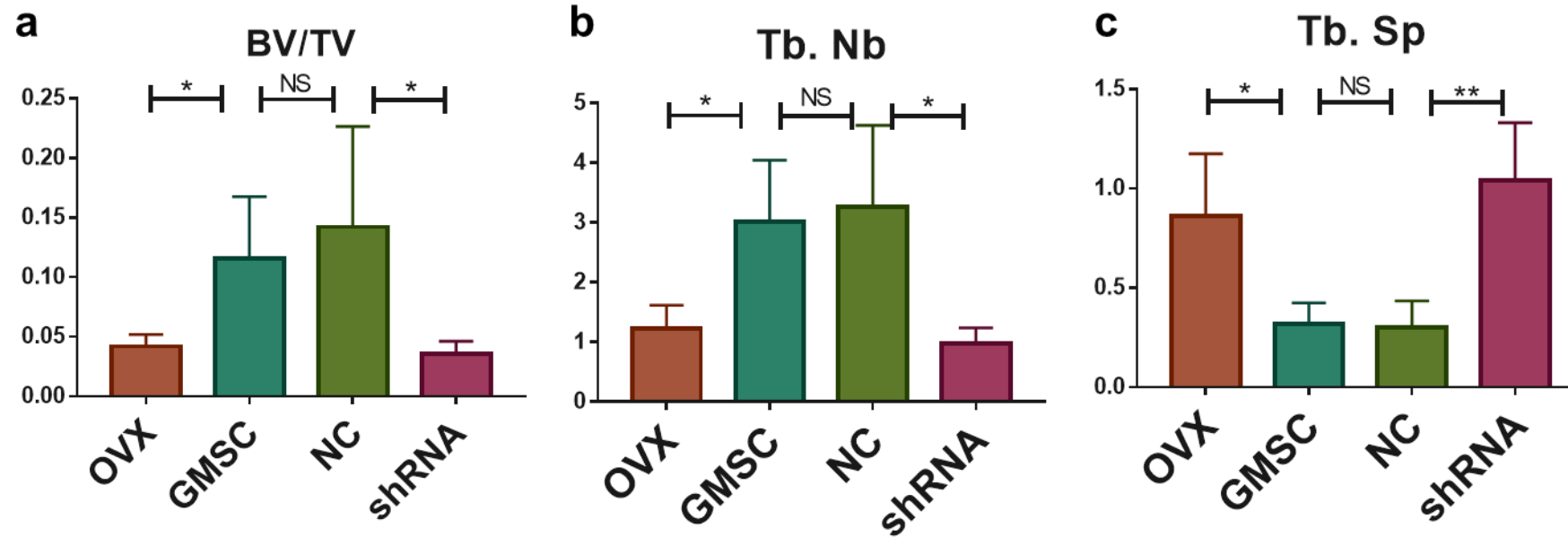
Supplementary figure 1

(a-c) 2×10^6 of GMSC were fluorescently labeled with DIR and adoptively infused into C57BL/6 mice, and mice were sacrificed on 3 days after injection. (a) Representative digital IVIS images were shown. (b) The labeled GMSC in bone marrow were determined by flow cytometry on 3 days after injection. (c) The labeled GMSC in bone marrow were detected by fluorescence microscope on 3 days after injection. (d) OVX mice were treated with transfected GMSC on 14 days after surgery, and mice were sacrificed on 56 days after injection. Osx and GFP expression in femur tissue sections was detected by immunofluorescence. The results represent three independent experiments (mean \pm SEM), * $P < 0.05$, ** $P < 0.01$, *** $p < 0.001$ by Mann-Whitney tests, t test or ANOVA test.



Supplementary figure 2

(a) GMSC were pretreated with CD39 inhibitor (POM1, 100 μ M) overnight and then cultured for 24h, 48h and 72h, the cell proliferation was detected using CCK8 assay. (b) GMSC were cultured for 24h, 48h and 72h in the presence of CD39 inhibitor (POM1, 100 μ M), the cell proliferation was detected using CCK8 assay. (c) GMSC were pretreated with CD39 inhibitor (POM1, 100 μ M) overnight, the apoptosis rate was determined by flow cytometry. The results represent three independent experiments (mean \pm SEM), * $P < 0.05$, ** $P < 0.01$, *** $p < 0.001$ by Mann-Whitney tests, t test or ANOVA test.



Supplementary figure 3

(a-c) OVX mice were treated with GMSC or transfected GMSC on 14 days after surgery, and mice were sacrificed on 56 days after injection. Corresponding parameters showing the treatment of osteoporosis by GMSC therapy. Abbreviations: BV/TV, bone volume / tissue volume; Tb.Nb, trabecular number; Tb.Sp, trabecular spacing. The results represent three independent experiments (mean \pm SEM), * $P < 0.05$, ** $P < 0.01$, *** $p < 0.001$ by Mann-Whitney tests, t test or ANOVA test.