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2. Title
   Role of IL-33 in the Effects of Smoking on Periodontitis

3. Period
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4. Summary
   In this study, we investigated how IL-33, which is predicted to be released from damaged periodontal tissues during smoking, regulates the pathogenesis of periodontitis development in murine periodontitis model using IL-33 deficient mice. We found three main findings: 1) Gingival application of cigarette smoke condensate significantly induced IL-33 mRNA and protein expression in gingival tissues; 2) IL-33 deficiency significantly suppressed CD8 T cell activity and numbers in regional lymph nodes and attenuated alveolar bone resorption in the periodontitis model; and 3) Gingival application of cigarette smoke condensate significantly enhanced alveolar bone resorption in a periodontitis model, and the increase of alveolar bone resorption in wild type mice was greater than that in IL-33 deficient mice. These results suggest that cigarette smoke condensate exacerbates periodontitis in an IL-33 production-dependent manner. We would like to clarify the actual smoking-induced IL-33-dependent exacerbation of periodontitis by the analysis of the specimens from periodontitis patients.