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Osteoclastogenic and inflammatory activation of lipoteichoic acid of *Filifactor alocis* as a chronic periodontitis related pathogen**Sung-Hoon Lee**

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Filifactor alocis was recently detected in chronic periodontitis patients and is the only Gram-positive bacterium in the gingival pocket. Lipoteichoic Acid (LTA) is known to be a immune stimulator. The purpose of this study was investigated the effects of LTA of *Filifactor alocis* on chronic periodontitis related factors. *Filifactor alocis* ATCC 35896 was used in this study and cultivated columbia broth including arginine and cysteine. LTA from *Filifactor alocis* was extracted by butanol extraction followed by HPLC. The extracted LTA was validated with CHO/CD14/TLR2 and CHO/CD14/TLR4 cell. Human gingival fibroblast were treated with the LTA or Lipopolysaccharide (LPS) from *Porphyromonas gingivalis*, *Tannerella forsythia*, and osteoprotegerin (OPG, a osteoclastogenesis inhibitory factor), RANKL (osteoclastogenesis activation factor) and inflammatory cytokines were analyzed by real-time RT-PCR and ELISA after purifying RNA and collecting conditioned media. The LTA stimulated CHO/CD14/TLR2 cells but did not CHO/CD14/TLR4. The LTA induced higher levels of TNF- α , IL-1 β , and IL-6 than LPS from *Porphyromonas gingivalis* and *Tannerella forsythia*. Furthermore, OPG/RANKL ratio were decreased more by LTA from *Filifactor alocis* than by the LPS. In the conclusion, LTA of *Filifactor alocis* may be more related with chronic periodontitis than the virulence factor of other periodontopathogens.

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