

# 論 文 内 容 要 旨

The anti-inflammatory effect of geniposidic acid  
to *Porphyromonas gingivalis*-induced periodontitis

(*Porphyromonas gingivalis* によって誘発される歯周炎に  
対するゲニポシド酸の抗炎症作用)

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Periodontal disease (PD) is the inflammatory condition caused by the interaction between periodontopathogenic bacteria and immune response. *Porphyromonas gingivalis*, the major pathogenic bacteria and a gram-negative bacterium produces variety of pathogenic factors to induce inflammation in host. Geniposidic acid (GPA) is the major component of *Eucommia ulmoides*, has various pharmacological effects (anti-inflammation, anti-angiocardopathy and anti-neurodegeneration). However, the effect and mechanism of GPA on *Porphyromonas gingivalis* induced periodontitis have not been clear. Therefore, in this study, we investigated the effect of GPA on Pg infection in front-line gingival epithelial cells against periodontopathic bacteria and the effect of GPA on a mouse periodontitis model.

To determine the anti-inflammatory effect of GPA, the mRNA expression of IL-6 in gingival epithelial cell (HGEC) with or without *P.gingivalis* stimulation and Ga addition. The suppressive effect of GPA in *P.gingivalis*-induced mouse periodontitis model was analyzed.

The results showed the addition of GPA inhibited the production of IL-6 following the TLR2 in HGEC. GPA also showed the inhibitory effect of *P.gingivalis*-induced alveolar bone resorption in mouse via suppressing IL-6 production in serum and gingival tissue. In conclusion, the above results show that GPA had the anti-inflammatory effect in periodontal

tissue and showed to be effective in preventing periodontal disease.

**Keywords :** *Porphyromonas gingivalis*,

geniposidic acid,

bone resorption,

IL-6