

# 論文要約

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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## Objective

Periodontal disease is a chronic disease that causes damage of the gums. The major pathogenic bacteria is *Porphyromonas gingivalis*, a gram-negative bacterium produces variety of pathogenic factors to induce inflammation in host. *Eucommia ulmoides* is a plant from China, which has the effects of reducing blood pressure, weight loss and anti-inflammatory. Geniposidic acid (GPA) is the major component of *Eucommia ulmoides*. This study was to investigate the effect of GPA on *P. gingivalis* induced periodontitis.

## Materials & Methods

In order to investigate the anti-inflammatory effect of GPA, the IL-6 mRNA expression by real-time-PCR and production of IL-6 by ELISA in gingival epithelial cell (HGEC) with or without *P. gingivalis* stimulation

and GPA addition were determined. The suppressive effect of GPA in *P. gingivalis*-induced mouse periodontitis model was analyzed.

## **Results**

The addition of GPA showed the suppressive effect of IL-6 mRNA induction and IL-6 production in HGEC stimulated by *P. gingivalis*. GPA also suppressed *P. gingivalis*-induced TLR2 induction in HGEC. The inoculation of GPA showed the inhibitory effect of *P. gingivalis*-induced alveolar bone resorption in mouse via suppressing IL-6 production in serum and gingival tissue. Furthermore, osteoclast differentiation of bone marrow cells by M-CSF and sRANKL of mouse was suppressed in the presence of GPA.

## **Conclusion**

GPA had the anti-inflammatory effect in periodontal tissue and showed to be effective in preventing periodontal disease.