

P-141**Anti-Inflammatory Activity of Selected Edible Herbs and Spices on Cultured Human Gingival Fibroblasts**

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The aims of the study were to determine the in-vitro cytotoxicity and anti-inflammatory activities of common edible herbs and spices on cultured human gingival fibroblasts (HGFs). *Piper betle* L. (betel leaf), *P.sarmentosum* Roxb. (wild betel / kadok leaf), *P.nigrum* L. (black pepper seed), *Eugenia caryophyllata* L. (clove bud) and *Cinnamomum zeylanicum* Blume (cinnamon bark). Essential oils were extracted using steam distillation technique and analysed using gas chromatography (GC) and gas chromatography – mass spectrometry (GC-MS). The HGFs were exposed to essential oils at 5 - 0.04 µg/mL in less than 1% dimethylsulfoxide and the number of viable cells was counted to assess cytotoxicity effect. Anti-inflammatory action was determined via the inhibitory action of Interleukin-6 (IL-6), a major pro-inflammatory cytokine in the periodontal tissue inflammation. Treatment of fibroblasts with essential oils resulted in > 70% cell viability. The oils from black pepper seed, clove bud and cinnamon bark showed dose-dependent inhibitory action on IL-6 on cultured bacterial Lipopolysaccharide (LPS)-induced human gingival fibroblasts. Of all the oils, cinnamon bark oil showed the most prominent action comparable to acetylsalicylic acid.

Conclusion: Essential oils of selected herbs and spices retained compatibility with gingival fibroblasts in culture and showed inhibitory activity on IL-6 released by LPS-induced HGFs. These findings suggest therapeutic potential for application of assay in the management of periodontal disease.

Keywords: Anti-inflammatory, periodontal, Piperaceae, *Eugenia caryophyllata*, *Cinammomun zeylanicum*.
