

0636 Baicalin Inhibits the Expression of PGE₂ and MMP-3 in Human Periodontal Ligament Cells

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Baicalin is an extract from the dry roots of *Scutellaria baicalensis* (Huangqin, a traditionally used Chinese medicinal herb). Objective: To evaluate the biologic effect of baicalin on the expression of PGE₂ and MMP-3 by cultured periodontal ligament cells (PDL cells) stimulated with IL-1 β . Methods: Human PDL cells were obtained from the periodontal membrane of first premolars extracted for orthodontic purpose and they were cultured with DMEM following routine protocol. PGE₂ level in cell culture fluid was measured by ELISA. MMP-3 expression was measured using immunohistochemistry and quantitative image analysis system. Monensin was used as a positive control for inhibition of MMP-3 release by the PDL cells. Results: PGE₂ level in culture fluid significantly increased from 15.00 \pm 0.82 pg/ml at baseline to 84.50 \pm 2.38 pg/ml (p<0.01) when the PDL cells were stimulated with 1.0 ng/ml of IL-1 β for 24 h. When the cells were stimulated with IL-1 β (1.0 ng/ml) and treated with baicalin (0.1 μ g/ml) for 24 h, PGE₂ level decreased significantly from 84.50 \pm 2.38 to 32.40 \pm 4.38 pg/ml (p<0.01). At baseline, no expression of MMP-3 was observed in PDL cells, while positive expression was found when the cells were stimulated with IL-1 β in a dose-dependent manner. When the cells were stimulated with IL-1 β (1.0 ng/ml) for 12 h and subsequently treated with baicalin (0.1 μ g/ml) or monensin 5.0 μ M for 12 h, consistent expression of MMP-3 was observed at 12 h and 24 h. In contrast, MMP-3 expression was detected in those cells stimulated with IL-1 β (1.0 ng/ml) for 12 h, while no expression was observed when these cells were stimulated for an additional 12 h. Conclusion: Baicalin may have an inhibitory effect on the expression of PGE₂ and release of MMP-3 from human periodontal ligament cells. Supported by Science & Technology Grants, Hubei, China.

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