

Effect of Calcium Ion on Human Cultured PDL cell

*Phasuk K., Pobsook T., Pavasant P., Yongchaitrakul T. Department of Anatomy

Calcium ion is one of the important ions that influences both cellular and molecular mechanism of the body. In periodontal disease, high level of calcium ion in gingival crevicular fluid is found, resulting in the high calcium environment of PDL cell. This experiment concentrated on the effect of calcium ion on human cultured PDL cells. Cells were treated with different concentrations of calcium ion. The cell proliferation was studied by methylene blue assay and the MMP - 2 activation was assayed by zymography. At the concentration 0.1 mM of calcium ion, PDL cells significantly increased in number tested by one-way ANOVA ($p < 0.05$). In addition, at the concentration 1.0 mM of calcium ion, the active form of MMP -2 was detected. These results suggested that the level of calcium ion effected the behavior of PDL cells which reflexed the relation between the calcium ion and the mechanism of the periodontal disease.

Supported by Dental Research Fund, Dental research project 3205-312 # 43 / 2002 Faculty of Dentistry, Chulalongkorn University