

Opsonized *Streptococcus mutans* influences maturation of human dendritic cells

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I. Objectives

It is reported that there are complements and immunoglobulins in serum from dental pulp in dentinal tubules, and it is thought that dental caries bacteria is opsonized by these serum ingredients, and it is presented by dendritic cells (DCs) in dental pulp. So, we examined whether a maturational difference of DCs occurred when *S. mutans* was opsonized.

II. Materials and Methods

PBMC was divided from normal human peripheral blood and collected CD14 positive cells by magnetic beads system. Adherent cells were incubated in 5% FCS-RPMI medium included GM-CSF, IL-4 for seven days. Then, after *S. mutans* were opsonized by treating with human serum, 10², 10³, 10⁴ bacteria / DC were stimulated. Cells were then harvested after 2, 4, 6, 8, 10, 12, 24hrs for CCR1, CCR7, IL-8 mRNA expression level using semi-quantitative RT-PCR, after 72h for CD86 expression using flow cytometry. After 24hrs culture supernatants were collected for IL-8, IL-12p40 protein concentration analysis using ELISA.

III. Results

As a result of RT-PCR, when compared the opsonized *S. mutans* with non-opsonized, its down-regulation of CCR1 and up-regulation of CCR7 and IL-8 appeared fast. As a result of ELISA, production of IL-8, IL-12p40 increased in opsonized *S. mutans* significantly.

IV. Conclusions

It is suggested that opsonized *S. mutans* may influence maturation of human DCs.

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