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### Isolation and Characterization of lipopolysaccharide on interleukin-6-receptor complex in human cells

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The purpose of this study was to examine the effects of lipopolysaccharide (LPS) from *Prevotella intermedia*, a major cause of inflammatory periodontal disease, on the production of interleukin-6 (IL-6) and expression of IL-6 receptor complex in the human gingival fibroblasts. LPS from *P. intermedia* ATCC 25611 was prepared by the standard hot phenol-water method. Cultures of gingival fibroblasts were established from gingival biopsies obtained from healthy individuals. The amounts of IL-6 in the supernatant were measured by enzyme-linked immunosorbent assay (ELISA). The expression of mRNA for IL-6, IL-6R, and gp130 was assessed using the reverse transcription-polymerase chain reaction (RT-PCR). We found that *P. intermedia* LPS can stimulate the release of IL-6, in cultured fibroblasts, in time- and concentration-dependent manners. In addition, *P. intermedia* LPS significantly increased the levels of mRNAs encoding IL-6 and IL-6R in cultured fibroblasts. gp130 mRNA was constitutively present in gingival fibroblasts and its abundance was not affected by *P. intermedia* LPS. The results indicate that *P. intermedia* LPS-induced IL-6 production in gingival fibroblasts is regulated at the transcriptional level and CD14-dependent

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### *Drosophila* homolog of mammalian AQP, *big brain* gene is regulated by DRE/DREF system and involved in cell proliferation of the adult gut

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*big brain* (*bib*) is a neurogenic gene that encodes a protein Big Brain (BIB) with sequence to known the major intrinsic protein (MIP) family which includes the water- and ion-conducting aquaporin (AQP) channels. AQP are involved in many physiological processes such as renal water conservation, neuro-homeostasis, digestion, body temperature regulation and intestinal water absorption. Recently, expression of AQP is associated strongly with intestinal carcinogenesis. However, the regulatory mechanisms of AQP expression remain largely unknown. Here, we show that *big brain*, a *Drosophila* homolog of mammalian AQP, is regulated by a DNA replication-related element (DRE; 5'-TATCGATA)-binding factor (DREF) system which is a key regulator of proliferation-related genes. In addition, we demonstrated that *big brain* is involved in positive regulation of epithelial cell proliferation of the adult gut. Our data support the idea that multiple AQP expression may be advantageous to tumorigenesis.