

Porphyromonas gingivalis (Pg) is an oral pathogen implicated in periodontal disease that interacts with different commensal bacterial species, contributing to the dysbiosis that is associated with periodontal disease. We investigated the potential impacts of cross-species interactions on Pg interactions with host cells. Specifically, we were interested in understanding whether commensal bacteria impact pro-inflammatory cytokine (IL-6) release by innate immune cells in response to Pg. We hypothesized that when Pg is co-cultured with *Bacteroides thetaiotaomicron* there will be an increase in IL-6 secretion by immune cells, but when co-cultured with *Streptococcus gordonii* there will be no increase in IL-6 secretion. We measured the amounts of secreted IL-6 present in culture of MONO-MAC-6 cells that had been exposed to Pg, Bt, and their co-cultures using an enzyme-linked immunosorbent assay. In this experiment we also used transmission electron microscopy to visualize OMVs and bacterial morphology of Pg, Bt, Sg, Pg-Bt, and Pg-Sg. We additionally utilized bicinchoninic acid assay to quantify the OMVs in TEM images, and enzyme-linked immunosorbent assay to measure IL-6 secretion by host cells in response to Pg, Bt, and Pg-Bt co-cultures. We found that Pg-Bt induced the highest IL-6 secretion following a trend where Bt cultures trigger a higher immune response. Future studies will be conducted by using pathway inhibitors, before adding bacteria to cultures, to determine which pathways are used to secrete and change the amount of IL-6 released. Also, investigating the different types of cytokines released by immune cells can help us determine the effect they have on initiating periodontitis.