Porphyromonas gingivalis is an anaerobic gram-negative bacterium that resides in the gums and is correlated with the progression of periodontal disease. P. gingivalis serves as a model organism for examining outer membrane vesicles (OMVs) due to their abundant production. Here, we focus on the modification of the Lipid A structure where preliminary data suggests C1 and C'4 phosphorylation affects P. gingivalis OMV cargo and its ability to disperse *Streptococcus gordonii* biofilm. We examined strains *WT33277* and l*px E/F* (lipid A C'1 and C'4 phosphatase double mutant). These strains produce similar quantities of OMVs but *WT33277* disperses biofilm while *Lpx E/F* does not. We hypothesized that differences in loading of gingipain proteases in OMVs from each strain could be responsible for the observed differences in biofilm dispersal. To test this hypothesis, we quantified gingipain activity using a fluorescent protease substrate with strains *WT33277*, l*px E/F*, and *Δgingi* as a negative control. Our results were inconsistent and suggested that the protease activity assay we were using was not appropriate for OMVs. We also hypothesized if fimbriae could modify biofilm dispersal by altering adhesion of OMVs to biofilms. Comparing an afimbriated strain, *MFB*, to fimbriated strains *WT33277* and *WT381*, equal amounts of OMVs, based on protein concentration, were introduced to *S. gordonii*. OMVs from *MFB* were able to cause biofilm dispersal, disproving our hypothesis. Understanding the mechanisms driving production of *P. gingivalis* OMVs and their roles in biofilm dispersal, future research could be directed toward OMV biogenesis, cessation, and progression of periodontal disease.