

Description of Additional Supplementary Files

File Name: Supplementary Data 1

Description: Sample metadata for the publicly available subgingival plaque shotgun metagenomic datasets included in the integrated analysis.

File Name: Supplementary Data 2

Description: Relative abundance ratios of *P. gingivalis* to *F. alocis* in publicly available subgingival plaque metagenomic samples.

File Name: Supplementary Data 3

Description: Annotation and relative abundance profiles of all metabolites identified by untargeted intracellular metabolomic analysis of *P. gingivalis* and *F. alocis* monocultures and cocultures with or without arginine.

File Name: Supplementary Data 4

Description: Annotation and relative abundance profiles of all metabolites identified by untargeted metabolomic analysis of uninoculated media and *F. alocis* culture supernatants.

File Name: Supplementary Data 5

Description: Annotation and relative abundance profiles of all metabolites identified by targeted amino acid metabolomics analysis of uninoculated media and *F. alocis* culture supernatants.