

## SUPPLEMENTARY FIGURES

| Target Taxon (Probe Group)     | Species of Interest                     | NCBI RefSeq Accession                                                   |
|--------------------------------|-----------------------------------------|-------------------------------------------------------------------------|
| <b>Alistipes</b>               | <i>Alistipes finegoldii</i>             | NR_103154.1 NR_115300.1 NR_102944.1 NR_043064.1 NR_113150.1             |
|                                | <i>Alistipes onderdonkii</i>            | NR_043318.1 NR_113151.1                                                 |
|                                | <i>Alistipes putredinis</i>             | NR_113152.1 NR_025909.1                                                 |
| <b>Bacteroides-Phocaeicola</b> | <i>Bacteroides clarus</i>               | NR_113065.1 NR_112893.1                                                 |
|                                | <i>Bacteroides congdonensis</i>         | NR_179552.1                                                             |
|                                | <i>Bacteroides eggerthii</i>            | NR_040864.1 NR_112935.1                                                 |
|                                | <i>Bacteroides fragilis</i>             | NR_112936.1 NR_074784.2 NR_112141.1 NR_119164.1                         |
|                                | <i>Bacteroides intestinalis</i>         | NR_041307.1                                                             |
|                                | <i>Phocaeicola massiliensis</i>         | NR_042745.1 NR_112938.1                                                 |
|                                | <i>Bacteroides nordii</i>               | NR_043017.1 NR_112939.1                                                 |
|                                | <i>Bacteroides salyersiae</i>           | NR_043016.1 NR_112942.1                                                 |
|                                | <i>Bacteroides stercoris</i>            | NR_112943.1 NR_027196.1                                                 |
|                                | <i>Bacteroides thetaiotaomicron</i>     | NR_076197.1 NR_074277.1 NR_112944.1 NR_112142.1                         |
|                                | <i>Phocaeicola vulgatus</i>             | NR_076384.1 NR_074515.1 NR_112946.1 NR_112143.1                         |
|                                | <i>Butyricimonas virosa</i>             | NR_041691.1                                                             |
| <b>Butyricimonas</b>           |                                         |                                                                         |
|                                |                                         |                                                                         |
| <b>Campylobacter</b>           | <i>Campylobacter jejuni</i>             | NR_118520.1 NR_041834.1 NR_043599.1 NR_117760.1                         |
|                                | <i>Campylobacter rectus</i>             | NR_043606.1 NR_113247.1                                                 |
|                                | <i>Campylobacter showae</i>             | NR_118526.1 NR_043601.1 NR_118151.1                                     |
|                                | <i>Campylobacter ureolyticus</i>        | NR_117766.1 NR_118654.1                                                 |
| <b>Coprobacter</b>             | <i>Coprobacter fastidiosus</i>          | NR_118316.1                                                             |
| <b>Dialister</b>               | <i>Dialister invisus</i>                | NR_113355.1 NR_025680.1                                                 |
|                                | <i>Dialister pneumosintes</i>           | NR_026229.1                                                             |
| <b>Enterobacteriaceae</b>      | <i>Escherichia coli</i>                 | NR_114042.1 NR_112558.1 NR_024570.1                                     |
| <b>Fusobacterium</b>           | <i>Fusobacterium animalis</i>           | NR_113378.1 NR_117843.1 NR_117291.1 NR_026084.1                         |
|                                | <i>Fusobacterium nucleatum</i>          | NR_074412.1 NR_113198.1 NR_117287.1 NR_114702.1                         |
|                                | <i>Fusobacterium polymorphum</i>        | NR_041807.1 NR_117842.1 NR_113141.1 NR_117288.1                         |
| <b>Helicobacter</b>            | <i>Helicobacter pylori</i>              | NR_114587.1 NR_044761.1 NR_119304.1                                     |
| <b>Intestinimonas</b>          | <i>Intestinimonas butyriciproducens</i> | NR_118554.1                                                             |
| <b>Lachnospiraceae</b>         | <i>Hungatella hathewayi</i>             | NR_036928.1                                                             |
|                                | <i>Enterocloster asparagiforme</i>      | NR_042200.1                                                             |
|                                | <i>Enterocloster bolteae</i>            | NR_113410.1 NR_025567.1                                                 |
|                                | <i>Roseburia inulinivorans</i>          | NR_042007.1                                                             |
|                                | <i>Ruminococcus torques</i>             | NR_115502.1 NR_036777.1                                                 |
|                                | <i>Leptotrichia trevisanii</i>          | NR_028769.1                                                             |
| <b>Leptotrichia</b>            | <i>Leptotrichia wadei</i>               | NR_036844.1 NR_113229.1                                                 |
| <b>Neisseria</b>               | <i>Neisseria mucosa</i>                 | NR_117696.1 NR_117717.1                                                 |
| <b>Parabacteroides</b>         | <i>Parabacteroides distasonis</i>       | NR_074376.1 NR_041342.1                                                 |
|                                | <i>Parabacteroides merdae</i>           | NR_041343.1 NR_119166.1                                                 |
| <b>Parvimonas</b>              | <i>Parvimonas micra</i>                 | NR_114675.1 NR_114338.1 NR_036934.1                                     |
| <b>Peptostreptococcus</b>      | <i>Peptostreptococcus stomatis</i>      | NR_043589.1                                                             |
| <b>Porphyromonas</b>           | <i>Porphyromonas asaccharolytica</i>    | NR_076875.1 NR_116811.1 NR_074588.1 NR_044635.1 NR_113079.1             |
|                                | <i>Porphyromonas endodontalis</i>       | NR_042803.1 NR_113085.1                                                 |
|                                | <i>Porphyromonas gingivalis</i>         | NR_114574.1 NR_114638.1 NR_074234.1 NR_040838.1 NR_113086.1 NR_119038.1 |
| <b>Prevotellaceae</b>          | <i>Prevotella copri</i>                 | NR_040877.1 NR_113411.1                                                 |
|                                | <i>Prevotella intermedia</i>            | NR_114639.1 NR_116809.1 NR_113106.1 NR_113107.1 NR_026119.1             |
|                                | <i>Prevotella nigrescens</i>            | NR_114640.1 NR_113115.1 NR_113116.1 NR_044850.1                         |
|                                | <i>Prevotella stercorea</i>             | NR_041364.1                                                             |
| <b>Streptococcaceae</b>        | <i>Streptococcus anginosus</i>          | NR_121936.1 NR_118289.1 NR_118320.1 NR_041722.2 NR_117426.1 NR_112705.1 |
|                                |                                         | NR_118937.1                                                             |
|                                | <i>Streptococcus equinus</i>            | NR_114642.1 NR_113594.1 NR_042052.1                                     |
|                                | <i>Streptococcus gallolyticus</i>       | NR_044904.1                                                             |
|                                | <i>Streptococcus sanguinis</i>          | NR_115736.1 NR_076430.1 NR_113260.1 NR_024841.1 NR_111994.1             |
|                                | <i>Streptococcus vestibularis</i>       | NR_042777.1 NR_118942.1                                                 |

**Supplementary Table 1. NCBI RefSeq 16S rRNA sequence accessions used for probe design.** For each target taxon, species of interest and accession number(s) used for input for the custom probe design pipeline are listed.