

### Supplementary Material

The first amplification utilized 200 ng of fecal DNA as a template, a 10  $\mu$ M mixture of the 6 forward and 6 reverse V4 16S primers, and the KAPA2G Robust polymerase chain reaction (PCR) kit (Sigma-Aldrich, Saint Louis, MO, USA). This first amplification ran at 95°C for 3 minutes; followed by 10 cycles of 95°C for 30 seconds, 50°C for 30 seconds, and 72°C for 30 seconds; with a final step at 72°C for 5 minutes. The bacterial 16S V4 library for sequencing was generated via a second amplification used 5  $\mu$ L of PCR product obtained and purified from the first step as a template, 10  $\mu$ M of the forward and reverse primers containing Illumina MiSeq adapter sequences a 12-base error-correcting Golay barcode specific for each sample, and the KAPA HiFi HotStart ReadyMix PCR kit (Roche, Basel, Switzerland). This second amplification ran at 95°C for 3 minutes; followed by 22 cycles of 95°C for 30 seconds, 56.1°C for 30 seconds, 72°C for 2 minutes; with a final step at 72°C for 5 minutes.