

## **Description of Additional Supplementary Files**

File Name: Supplementary Data 1

Description: Operational Taxonomic Units, Bacterial 16S and 18S.

File Name: Supplementary Data 2

Description: Metagenome-assembled-genomes (MAGs) – GTDB classification, abundances, quality, relationships to Kulunda MAGs.

File Name: Supplementary Data 3

Description: Full length 16S rRNA gene sequences associated with MAGs.

File Name: Supplementary Data 4

Description: Co-occurrences of nearly identical variants of MAGs, showing no evidence for competitive exclusion.

File Name: Supplementary Data 5

Description: Evidence for diversifying evolution among some core genes of sets of MAG variants.

File Name: Supplementary Data 6

Description: Expression data for signature genes of different metabolic pathways (Figure 3).