

Descriptions of Additional Supplementary Files

Supplementary Data 1

Description: Chlamydial MAGs and genome information.

Supplementary Data 2

Description: PVC reference dataset.

Supplementary Data 3

Description: Phylogenetic distance (PD) of known chlamydiae versus chlamydial MAGs in species tree, and phylogenetic gain (PG) by MAGs.

Supplementary Data 4

Description: Environmental origin of chlamydial genomes. Supplementary Data 5. Phylogenetic gain by GEM MAGs per environment.

Supplementary Data 6

Description: GTDB-Tk output for chlamydial genomes.

Supplementary Data 7

Description: Adjusted taxonomic affiliation of chlamydial genomes.

Supplementary Data 8

Description: EggNOG NOGs per genome of the dereplicated dataset.

Supplementary Data 9

Description: Presence of selected metabolic pathway in dereplicated chlamydial MAGs.

Supplementary Data 10

Description: Chemotaxis in chlamydiae.

Supplementary Data 11

Description: CRISPR-Cas systems in chlamydiae.

Supplementary Data 12

Description: Chlamydial hydrogenases. Supplementary Data 13. Relative abundance of chlamydiae in IMNGS samples.