

## Supplementary Figure 6

### Archaea (23)

Crenarchaeota (4)  
Euryarchaeota (18)

Thermoprotei (4)  
Thermoplasmata (4)

Thermoplasmatales (4)  
Thermococcales (3)  
Methanomicrobia (4)  
Methanosarcinales (4)

*Thermococci* (3)  
*Pyrococcus* (3)  
*Methanosarcina* (3)

### Bacteria (291)

Proteobacteria (147)

Gammaproteobacteria (76)

Vibrionales (5)  
Xanthomonadales (7)  
Pasteurellales (12)  
Pseudomonadales (10)  
Enterobacteriales (37)

*Vibrio* (4)  
*Xylella* (4)  
*Haemophilus* (5)  
*Pseudomonas* (7)  
*Buchnera* (3)  
*Escherichia* (7)  
*Salmonella* (8)  
*Shigella* (4)  
*Yersinia* (7)

Alphaproteobacteria (28)

Rhodospirillales (3)  
Rhodobacterales (3)  
Rhizobiales (11)  
Rickettsiales (9)

*Brucella* (3)  
*Rickettsia* (5)  
*Wolbachia* (3)  
*Neisseria* (5)  
*Burkholderia* (7)  
*Bordetella* (4)

Betaproteobacteria (24)

Neisseriales (6)  
Burkholderiales (15)

*Campylobacter* (5)  
*Helicobacter* (4)

Deltaproteobacteria (8)  
Epsilonproteobacteria (10)

Desulfuromonadales (3)  
Campylobacteriales (10)

Cyanobacteria (14)

n. a. (13)

Chroococcales (5)  
Nostocales (3)  
Prochlorales (4)

*Prochlorococcus* (4)

Deinococcus-Thermus (3)  
Actinobacteria (25)

Deinococci (3)  
Actinobacteria (class) (25)

Actinomycetales (21)

*Corynebacterium* (3)  
*Mycobacterium* (8)  
*Streptomyces* (3)

Spirochaetes (6)  
Chlamydiae (9)  
Fusobacteria (3)  
Bacteroidetes (5)  
Firmicutes (72)

Spirochaetes (class) (6)  
Chlamydiae (class) (9)  
Fusobacteria (class) (3)  
Bacteroides (class) (4)  
Clostridia (9)  
Mollicutes (9)  
Bacilli (54)

Spirochaetales (6)  
Chlamydiales (9)  
Fusobacteriales (3)  
Bacteroidales (4)  
Clostridiales (7)  
Mycoplasmatales (6)  
Bacillales (26)

*Chlamydomphila* (6)  
*Fusobacterium* (3)  
*Bacteroides* (3)  
*Clostridium* (6)  
*Mycoplasma* (5)  
*Staphylococcus* (7)  
*Bacillus* (10)  
*Listeria* (5)

Lactobacillales (28)

*Streptococcus* (17)  
*Lactobacillus* (4)

### Eukaryota (26)

Ascomycota (6)  
Arthropoda (4)  
Chordata (9)

Sordariomycetes (3)  
Insecta (4)  
Mammalia (5)  
Actinopterygii (3)

Diptera (3)

**Supplementary Figure 6.** Clades at different depths of the phylogenetic tree that are sufficiently represented by genomes of the 340 organisms for composition-based modeling.