

Table 1. Genomes used in this study. The selection was mainly based on Bowers et al. with modifications. We deliberately selected genomes to represent different kingdoms.

Taxonomy id	Name	Lineage
2190	<i>Methanocaldococcus jannaschii</i>	Archaea
2234	<i>Archaeoglobus fulgidus</i>	Archaea
2287	<i>Sulfolobus solfataricus</i>	Archaea
2303	<i>Thermoplasma acidophilum</i>	Archaea
29292	<i>Pyrococcus abyssi</i>	Archaea
50339	<i>Thermoplasma volcanium</i>	Archaea
53953	<i>Pyrococcus horikoshii</i>	Archaea
56636	<i>Aeropyrum pernix</i>	Archaea
64091	<i>Halobacterium sp. NRC-1</i>	Archaea
145262	<i>Methanothermobacter thermautotrophicus</i>	Archaea
139	<i>Borrelia burgdorferi</i>	Bacteria
158	<i>Treponema denticola</i>	Bacteria
160	<i>Treponema pallidum</i>	Bacteria
197	<i>Campylobacter jejuni</i>	Bacteria
287	<i>Pseudomonas aeruginosa</i>	Bacteria
303	<i>Pseudomonas putida</i>	Bacteria
358	<i>Agrobacterium tumefaciens</i>	Bacteria
382	<i>Sinorhizobium meliloti</i>	Bacteria
520	<i>Bordetella pertussis</i>	Bacteria
601	<i>Salmonella typhi</i>	Bacteria
632	<i>Yersinia pestis</i>	Bacteria
666	<i>Vibrio cholerae</i>	Bacteria
747	<i>Pasteurella multocida</i>	Bacteria
782	<i>Rickettsia prowazekii</i>	Bacteria
837	<i>Porphyromonas gingivalis</i>	Bacteria
881	<i>Desulfovibrio vulgaris</i>	Bacteria
956	<i>Wolbachia sp.</i>	Bacteria
1097	<i>Chlorobium tepidum</i>	Bacteria
1148	<i>Synechocystis sp. PCC 6803</i>	Bacteria
1299	<i>Deinococcus radiodurans</i>	Bacteria
1309	<i>Streptococcus mutans</i>	Bacteria
1313	<i>Streptococcus pneumoniae</i>	Bacteria
1314	<i>Streptococcus pyogenes</i>	Bacteria
1351	<i>Enterococcus faecalis</i>	Bacteria
1360	<i>Lactococcus lactis subsp. Lactis</i>	Bacteria
1392	<i>Bacillus anthracis</i>	Bacteria
1423	<i>Bacillus subtilis</i>	Bacteria
1488	<i>Clostridium acetobutylicum</i>	Bacteria
1717	<i>Corynebacterium diphtheriae</i>	Bacteria
1764	<i>Mycobacterium avium</i>	Bacteria
1769	<i>Mycobacterium leprae</i>	Bacteria
1773	<i>Mycobacterium tuberculosis</i>	Bacteria
2097	<i>Mycoplasma genitalium</i>	Bacteria
2104	<i>Mycoplasma pneumoniae</i>	Bacteria

2107	<i>Mycoplasma pulmonis</i>	Bacteria
2130	<i>Ureaplasma urealyticum</i>	Bacteria
2336	<i>Thermotoga maritime</i>	Bacteria
2371	<i>Xylella fastidiosa</i>	Bacteria
35554	<i>Geobacter sulfurreducens</i>	Bacteria
63363	<i>Aquifex aeolicus</i>	Bacteria
71421	<i>Haemophilus influenzae Rd KW20</i>	Bacteria
83331	<i>Mycobacterium tuberculosis CDC1551</i>	Bacteria
83333	<i>Escherichia coli K12</i>	Bacteria
83334	<i>Escherichia coli O157:H7</i>	Bacteria
83560	<i>Chlamydia muridarum</i>	Bacteria
85962	<i>Helicobacter pylori 26695</i>	Bacteria
85963	<i>Helicobacter pylori J99</i>	Bacteria
86665	<i>Bacillus halodurans</i>	Bacteria
107806	<i>Buchnera aphidicola str. APS</i>	Bacteria
115711	<i>Chlamydophila pneumoniae AR39</i>	Bacteria
115713	<i>Chlamydophila pneumoniae CWL029</i>	Bacteria
122586	<i>Neisseria meningitidis MC58</i>	Bacteria
122587	<i>Neisseria meningitidis Z2491</i>	Bacteria
138677	<i>Chlamydophila pneumoniae J138</i>	Bacteria
155864	<i>Escherichia coli O157:H7 EDL933</i>	Bacteria
158878	<i>Staphylococcus aureus subsp. aureus Mu50</i>	Bacteria
158879	<i>Staphylococcus aureus subsp. aureus N315</i>	Bacteria
3702	<i>Arabidopsis thaliana</i>	Eukaryota
4932	<i>Saccharomyces cerevisiae</i>	Eukaryota
6239	<i>Caenorhabditis elegans</i>	Eukaryota
7227	<i>Drosophila melanogaster</i>	Eukaryota