

Table 1. Examples of the smallest reported genome size and gene number for free-living Bacteria, Archaea and Eukarya of a range of trophic modes from peer-reviewed literature. For comparison, values are provided for a range of Cyanobacteria.

trophic mode, organism	number of protein-coding genes	genome size (kbp)	references
chemoorganotrophic bacteria			
SAR11 (e.g. <i>Pelagibacter ubique</i>)	1357 – 1541	1237 – 1457	[13,14]
β -Proteobacterium HTCC2181	1338	1304	[15]
oxygenic photolithotrophic cyanobacteria			
<i>Prochlorococcus marinus</i>	1716 – 3022	1643 – 2683	[16]
<i>Raphidiopsis brookii</i>	3968	3890	[17]
<i>Cylindrospermopsis raciborskii</i>	3088	3200	[17]
<i>Nostoc punctiforme</i>	6501	8941	[17,18]
<i>Acaryochloris marina</i>	8528	8362	[19]
<i>Scytonema hofmannii</i>	12 356	12 073	[20]
anoxygenic photolithotrophic bacterium			
<i>Chlorobium tepidum</i> TLS	2288	2154	[21]
chemolithotrophic methanogenic archaeans			
<i>Methanococcus labreanum</i>	1828	1805	[22,23]
<i>Methanobacterium thermoautotrophicum</i>	1855	1751	[24]
chemoorganotrophic osmotrophic eukaryotes			
<i>Ashbya gossypii</i>	4718	9200	[25]
<i>Schizosaccharomyces pombe</i>	4824	13 800	[26]
chemoorganotrophic phagotrophic eukaryotes			
<i>Monosiga brevicollis</i>	9196	41 600	[27]
<i>Tetrahymena thermophila</i>	27 000	104 000	[28]
photolithotrophic eukaryotes			
<i>Cyanidioschyzon merolae</i>	5331	16 520	[29]
<i>Ostreococcus lucimarinus</i>	7651	13 200	[30]
<i>Ostreococcus tauri</i>	7892	12 699	[30,31]

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