

On-Line Supplemental Table 1. Inventory of number of cell parts and cell types for organisms with sequenced genomes

Species	Genome Size	No. ORFs	Cell Parts List	Cell Parts No.	Cell Types List	Cell Type No.	Ref
Prokaryotes							
<i>Aeropyrum pernix</i> K1	1669	2694	a b d i	4		1	[1]
<i>Agrobacterium tumefaciens</i> C58-Cereon	4915	4554	a b c d e	5		1	[2]
<i>Agrobacterium tumefaciens</i> C58-DuPont	4915	4661	a b c d e	5		1	[2]
<i>Aquifex aeolicus</i> VF5	1551	1522	a b c e	2		1	[1]
<i>Archaeoglobus fulgidus</i> DSM4304	2178	2407	a b d e	4		1	[1, 2]
<i>Bacillus anthracis</i> Ames	5227	5311	a b c f	4	Typical cell, endospore	2	[2, 3]
<i>Bacillus cereus</i> ATCC 14579	5411	5234	a b c e f	5	Typical cell, endospore	2	[2, 3]
<i>Bacillus halodurans</i> C-125	4202	4066	a b c e f	5	Typical cell, endospore	2	[2]
<i>Bacillus subtilis</i> 168	4214	4100	a b c e f	5	Typical cell, endospore	2	[2, 3]
<i>Bacteroides thetaiotaomicron</i> VPI-5482	6260	4778	a b c d j	5		1	[2, 4]

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<i>Bifidobacterium longum</i> NCC2705	2256	1729	a b c k	4		1	[2]
<i>Borrelia burgdorferi</i> B31	1230	850	a b c l m n	6		1	[2]
<i>Bradyrhizobium japonicum</i> USDA110	9105	8317	a b c d e o	6		1	[2]
<i>Brucella melitensis</i> 16M	3294	3198	a b c d	4		1	[2]
<i>Brucella melitensis</i> biovar suis 1330	3310	3264	a b c d	4		1	[2]
<i>Buchnera aphidicola</i> AP (Acyrthosiphon pisum)	640	564	a b c d	4		1	[5]
<i>Buchnera aphidicola</i> BP (Baizongia pistaciae)	618	505	a b c d	4		1	[5]
<i>Buchnera aphidicola</i> SG (chizaphis graminum)	641	545	a b c d	4		1	[5]
<i>Campylobacter jejuni</i> subsp. <i>Jejuni</i> NCTC 11168	1641	1654	a b c d e	5		1	[2]
<i>Caulobacter crescentus</i> CB15	4016	3737	a b c d e p q	7	Motile form, stalked form	2	[2]
<i>Chlamydia pneumoniae</i> AR39	1230	997	a b c d	4	Elementary bodies, reticulate bodies	2	[4]

Species	Genome Size	No. ORFs	Cell Parts List	Cell Parts No.	Cell Types List	Cell Type No.	Ref
<i>Chlamydophila pneumoniae</i> CWL029	1228	1052	a b c d	4	Elementary bodies, reticulate bodies	2	[4]
<i>Chlamydophila pneumoniae</i> j138	1069	1070	a b c d	4	Elementary bodies, reticulate bodies	2	[4]
<i>Chlamydia trachomatis</i> MoPn/Nigg	1069	818	a b c d	4	Elementary bodies, reticulate bodies	2	[4]
<i>Chlamydia trachomatis</i> D/UW-3/CX (Serovar D)	1042	894	a b c d	4	Elementary bodies, reticulate bodies	2	[4]
<i>Chlamydophila caviae</i> GPIC	1173	998	a b c d	4	Elementary bodies, reticulate bodies	2	[4]
<i>Chlorobium tepidum</i> TLS	2154	2252	a b c d r	5		1	[2]
<i>Clostridium acetobutylicum</i> ATCC 824D	4100	3672	a b c e f	5	Typical cell, endospore	2	[2, 3]
<i>Clostridium perfringens</i> 13	3031	2660	a b c e f	5	Typical cell, endospore	2	[2, 3]
<i>Clostridium tetani</i> Massachusetts E88	2799	2373	a b c e f	5	Typical cell, endospore	2	[2, 3]
<i>Corynebacterium efficiens</i> YS	3140	2950	a b c s	4		1	[2, 3]
<i>Corynebacterium glutamicum</i> ATCC-13032	3309	2993	a b c s	4		1	[2, 3]

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<i>Coxiella burnetii</i> RSA 493	2100	2009	a b c d	4		1	[4]
<i>Deinococcus radiodurans</i> R1	3284	2937	a b c	4		1	[2]
<i>Enterococcus faecalis</i> V583	3209	3113	a b c e	4		1	[2]
<i>Escherichia coli</i> UPEC-CFT073	5231	5379	a b c d e g	6		1	[2]
<i>Escherichia coli</i> 0157:H7 EDL933	4100	5349	a b c d,e g	6		1	[2]
<i>Escherichia coli</i> K-12_W3110	4641	4390	a b c d e g	6		1	[2]
<i>Escherichia coli</i> K12-MG1655	4639	4289	a b c d e g	6		1	[2]
<i>Escherichia coli</i> 0157:H7 Sakai	5594	5361	a b c d e g	6		1	[2]
<i>Fusobacterium nucleatum</i> ATCC 25586	2170	2068	a b c d	4		1	[2, 4]
<i>Wigglesworthia (Glossina) brevipalpis</i> P-endosymbiont	697	654	a b c d	4		1	[6]
<i>Haemophilus influenzae</i> KW20	1830	1709	a b c d	4		1	[2, 4]
<i>Halobacterium species</i> NRC1	2014	2058	a b c e t	5		1	[1,2, 4]
<i>Helicobacter pylori</i> 26695	1667	1566	a b c d e	5		1	[2]
<i>Helicobacter pylori</i> J99	1643	1491	a b c d e	5		1	[2]

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<i>Lactobacillus plantarum</i> WCFS1	3308	3051	a b c e	4		1	[2]
<i>Lactococcus lactis</i> subsp. <i>Lactis</i> ILI403	2365	2266	a b c	3		1	[2]
<i>Leptospira interrogans</i> serovar lai 56601	3011	4727	a b c m n	5		1	[2]
<i>Listeria innocua</i> Clip11262, rhamnose-negative	2944	2981	a b c e	4		1	[2]
<i>Listeria monocytogenes</i> EGD-e	4691	2855	a b c e	4		1	[2]
<i>Mesorhizobium loti</i> MAFF303099	7596	6752	a b c d e o	6		1	[2]
<i>Methanobacterium thermoautotrophicum</i> delta-H	1751	1869	a b c	3		1	[1, 2]
<i>Methanococcus jannaschii</i> DSM2661	1664	1715	a b c e	4		1	[1, 2]
<i>Methanopyrus kandleri</i> AV19	1694	1691	a b c l2	5		1	[1, 2]
<i>Methanosarcina acetivorans</i> C2A	5751	4540	a b c	3	Typical cells, cysts with common cell walls	2	[1, 2]
<i>Methanosarcina mazei</i> GOE1	4096	3371	a b c	3	Typical cells, cysts with common cell walls	2	[1, 2]

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Species	Genome Size	No. ORFs	Cell Parts List	Cell Parts No.	Cell Types List	Cell Type No.	Ref
<i>Mycobacterium tuberculosis</i> CDC1551	4403	4187	a b c k	4		1	[2, 3]
<i>Mycobacterium tuberculosis</i> H37Rv (lab strain)	4411	3918	a b c k	4		1	[2, 3]
<i>Mycobacterium leprae</i> TN	3268	2720	a b c k	4		1	[2, 3]
<i>Mycoplasma genitalium</i> G-37	580	480	a b	2		1	[2]
<i>Mycoplasma gallisepticum</i> R	996	726	a b	2		1	[2]
<i>Mycoplasma penetrans</i> HF-2	1358	1037	a b	2		1	[2]
<i>Mycoplasma pneumoniae</i> M129	816	677	a b	2		1	[2]
<i>Mycoplasma pulmonis</i> UAB CTIP	963	782	a b	2		1	[2]
<i>Neisseria meningitidis</i> MC58 (Serogroup B)	2272	2025	a b c d g h	6		1	[2]
<i>Neisseria meningitidis</i> Z2491 (Serogroup A)	2184	2121	a b c d g h	6		1	[2]
<i>Nitrosomonas europaea</i> ATCC 19718	2812	2574	a b c d e u	6		1	[2]
<i>Nostoc (Anabaena)</i> sp. PCC 7120	6413	5366	a b c d u v w	7	Hormogonia trichomes, heterocysts, and thallus trichomes	3	[2]

Species	Genome Size	No. ORFs	Cell Parts List	Cell Parts No.	Cell Types List	Cell Type No.	Ref
<i>Oceanobacillus iheyensis</i> HTE831	3630	3496	a b c e f	5	Typical cell, endospore	2	[7]
<i>Pasteurella multocida</i> Pm70	2250	2014	a b c d	4		1	[2]
<i>Pseudomonas aeruginosa</i> PAO1	6264	5565	a b c d e	5		1	[2]
<i>Pseudomonas putida</i> KT2440	6100	5350	a b c d e	5		1	[2]
<i>Pseudomonas syringae</i> pv. Tomato DC3000	6397	5471	a b c d e	5		1	[2]
<i>Pyrobaculum aerophilum</i> IM2	2222	2605	a b c e	4		1	[1, 2]
<i>Pyrococcus abyssi</i> GE5	1765	1765	a b c e	4		1	[1, 2]
<i>Pyrococcus furiosus</i> DSM3638	1908	2065	a b c e	4		1	[1, 2]
<i>Pyrococcus horikoshii</i> OT3	1738	2064	a b c e	4		1	[1, 2]
<i>Ralstonia solanacearum</i> GMI1000	5810	5120	a b c d e	5		1	[4]
<i>Rickettsia conorii</i> Malish 7	1268	1374	a b c d g w	6		1	[4]
<i>Rickettsia prowazekii</i> Madrid E	1111	834	a b c d g w	6		1	[4]
<i>Salmonella enterica</i> Typhi Ty2	4791	4332	a b c d e	5		1	[2]
<i>Salmonella typhi</i> CT18	4809	4600	a b c d e	5		1	[2]

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<i>Salmonella typhimurium</i> , LT2 SGSC1412	4857	4451	a b c d e	5		1	[2]
<i>Shewanella oneidensis</i> (<i>putrefaciens</i>) MR-1 ATCC700550	4969	4630	a b c d e	5		1	[8]
<i>Shigella flexneri</i> serotype 2a 2457T	4599	4073	a b c d	4		1	[2]
<i>Shigella flexneri</i> , 2a 201	4607	4434	a b c d	4		1	[2]
<i>Sinorhizobium meliloti</i> 1021	6690	6205	a b c d e	5		1	[2]
<i>Staphylococcus aureus</i> Mu50 (VRSA)	2878	2697	a b c	3		1	[2, 3]
<i>Staphylococcus aureus</i> N315 (MRSA)	2820	2595	a b c	3		1	[2, 3]
<i>Staphylococcus aureus</i> subsp. Aureus MW2	2813	2632	a b c	3		1	[2, 3]
<i>Staphylococcus epidermidis</i> ATCC 12228	2499	2419	a b c	3		1	[2, 3]
<i>Streptococcus agalactiae</i> NEM316	2160	2134	a b c g	4		1	[2, 3]
<i>Streptococcus mutans</i> UA159	2030	1960	a b c	3		1	[2, 3]
<i>Streptococcus pneumoniae</i> TiGR4 ATCC-BAA-334	2160	2094	a b c g	4		1	[2, 3]
<i>Streptococcus pyrogenes</i> MGAS315	1900	1865	a b c g	4		1	[2, 3]

Species	Genome Size	No. ORFs	Cell Parts List	Cell Parts No.	Cell Types List	Cell Type No.	Ref
<i>Streptococcus pyrogenes</i> MGAS8232	1895	1845	a b c g	4		1	[2, 3]
<i>Streptomyces avermitilis</i> MA-4680	9025	7575	a b c k u	5	Mycelium spores	2	[2, 9]
<i>Streptomyces coelicolor</i> A3(2)	8667	7567	a b c k u	5	Mycelium spores	2	[2, 9]
<i>Sulfolobus solfataricus</i> P2	2992	2977	a b c d e	5		1	[1, 2]
<i>Sulfolobus tokodaii</i> 7	2694	2826	a b c d e	5		1	[1, 2]
<i>Synechocystis sp.</i> PCC6803	3573	3169	a b c d y	5		1	[1, 2]
<i>Thermoanaerobacter tengcongensis</i> MB4T	2689	2588	a b c e	4		1	[2]
<i>Thermoplasma acidophilum</i> DSM1728	1564	1478	a b e	3		1	[1, 2]
<i>Thermoplasma volcanium</i> GSS1	1584	1499	a b e	3		1	[1, 2]
<i>Thermosynechococcus elongatus</i> BP-1	2600	2475	a b c d e y	6		1	[2]
<i>Thermotoga maritima</i> MSB8	1860	1846	a b c d e z	6		1	[2]
<i>Treponema pallidum</i> subsp. <i>Pallidum</i> Nichols	1138	1031	b c l m n	5		1	[2]
<i>Tropheryma whippeli</i> TW08/27	925	784	a b c d x	5	Intracellular and extracellular forms	2	[10]

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<i>Tropheryma whippeli</i> Twist	927	808	a b c d x	5	Intracellular and extracellular forms	2	[10]
<i>Ureaplasma urealyticum</i> (parvum) serovar 3	751	611	a b	2		1	[2]
<i>Vibrio cholerae</i> serotype 01, Biotype El Tor, strain N16961	4000	3828	a b c d e z	6		1	[2]
<i>Vibrio parahaemolyticus</i> RIMD 2210633	5165	4832	a b c d e z	6		1	[2]
<i>Vibrio vulnificus</i> CMCP6	5211	4537	a b c d e z	6		1	[2]
<i>Xanthomonas axonopodis</i> pv. Citri 306	5273	4312	a b c d e	5		1	[2]
<i>Xanthomonas campestris</i> pv. Campestris ATCC 33913	5076	4181	a b c d e	5		1	[2]
<i>Xylella fastidiosa</i> CVC 8.1.b clone 9.a.5.c	2679	2766	a b c d	4		1	[2]
<i>Xylella fastidiosa</i> -grape Temecula1	2519	2034	a b c d	4		1	[2]
<i>Yersinia pestis</i> CO-92 (Biovar Orientalis)	4653	4008	a b c d	4		1	[2]
<i>Yersinia pestis</i> KIM5 P12 (Biovar Mediavalis)	4600	4090	a b c d	4		1	[2]

Species	Genome Size	No. ORFs	Cell Parts List	Cell Parts No.	Cell Types List	Cell Type No.	Ref
Eukaryotes							
<i>Anopheles gambiae</i>	278000	14000	ND	ND	See ref.	55	[11]
<i>Arabidopsis thaliana</i>	115428	25498	ND	ND	See ref.	30	[12]
<i>Ashbya</i>	9000	4700	ND	ND	See ref.	6	[13]
<i>Caenorhabditis elegans</i>	97000	19099	ND	ND	See ref.	50	[12]
<i>Ciona intestinalis</i>	160000	15852	ND	ND	See ref.	55	[11]
<i>Drosophila melanogaster</i>	137000	14100	ND	ND	See ref.	50	[12]
<i>Encephalitozoon cuniculi</i>	2500	1997	ND	ND	See ref.	5	[14]
<i>Fugu</i>	365000	31000	ND	ND	See ref.	120	[11]
<i>Guillardia theta nucleomorph</i>	551	464	ND	ND	See ref.	1	[15]
<i>Homo sapiens</i>	3200000	32000	ND	ND	See ref.	120	[12]
<i>Mus musculus</i>	2500000	30000	ND	ND	See ref.	120	[11]
<i>Neurospora crassa</i>	43000	10082	ND	ND	See ref.	5	[16]
<i>Oryza sativa L. ssp indica</i>	420000	50000	ND	ND	See ref.	30	[11]
<i>Oryza sativa L. ssp japonica</i>	420000	50000	ND	ND	See ref.	30	[11]
<i>Plasmodium yoelii yoelii</i>	23100	5878	ND	ND	See ref.	8	[17]
<i>Plasmodium falciparum 3D7</i>	22900	5268	ND	ND	See ref.	8	[17]
<i>Saccharomyces cerevisiae S288C</i>	12069	6294	ND	ND	See ref.	3	[12]
<i>Schizosaccharomyces pombe</i>	97000	14000	ND	ND	See ref.	4	[18]



ND=not done
a = cytosol
b = cytoplasmic membrane
c = cell wall
c2= multilayered layer cell wall
d = envelope
e = flagella
f = endospore coat
g = capsule
h = fimbriae
i = pilli-like appendages
j = prominent vacuoles
k = cells branched (branched cells were considered to have one more part (“joins”)
 than unbranched cells)
l = surface layer
l2= multilayered surface coat
m = outer membrane
n = periplasmic flagella
o =prominent granules of poly- β -hydroxybutyrate
p = prostheca
q = holdfast
r = chlorosomes
s = metachromatic granules of polymetaphosphate
t = prominent gas vacuoles
u = prominent vesicles
v = heterocyst coat
w = mucilage or slime layer
x = secreted extracellular matrix
y = thylacoids
z= sheath

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