

Supplementary Table 1: Genome sizes and accession numbers for the sequences used for the 18S rDNA tree. When necessary, the number of base pairs was estimated from the mass of DNA using: Base Pairs = DNA Mass (pg)*0.978 X 10⁹ (J. Dolezel, J. Bartos, H. Voglmayr, J. Greilhubner, *Cytometry* **51A**, 127 (2003)). Also, when multiple genome sizes were given from different cell types, the mean value was used.

Species	Accession Number	Genome Size (Base Pairs)	Source
<i>Fissidens taxifolius</i>	X95934.1	3.2E+08	Royal Botanic Gardens Kew
<i>Ceratodon purpureus</i>	Y08989.1	3.8E+08	Royal Botanic Gardens Kew
<i>Eurhynchium hians</i>	U18501.1	4.2E+08	Royal Botanic Gardens Kew
<i>Hypnum lindbergii</i>	AF229922.1	3.0E+08	Royal Botanic Gardens Kew
<i>Cratoneuron commutatum</i>	Y15482.1	3.0E+08	Royal Botanic Gardens Kew
<i>Mnium hornum</i>	X80985.1	8.6E+08	Royal Botanic Gardens Kew
<i>Plagiomnium affine</i>	AF023711.1	8.8E+08	Royal Botanic Gardens Kew
<i>Atrichum undulatum</i>	X85093.1	7.2E+08	Royal Botanic Gardens Kew
<i>Polytrichum formosum</i>	X80982.1	5.2E+08	Royal Botanic Gardens Kew
<i>Lygodium japonicum</i>	AB001538.1	1.1E+10	Royal Botanic Gardens Kew
<i>Dicksonia antarctica</i>	U18624.2	1.1E+10	Royal Botanic Gardens Kew
<i>Pteridium aquilinum</i>	U18628.1	6.3E+09	Royal Botanic Gardens Kew
<i>Angiopteris lygodiiifolia</i>	D85301.1	7.0E+09	Royal Botanic Gardens Kew
<i>Loranthus europaeus</i>	L24153.1	8.1E+09	Royal Botanic Gardens Kew
<i>Ranunculus sardous</i>	L24092.1	3.2E+09	Royal Botanic Gardens Kew
<i>Arabidopsis thaliana</i>	X16077.1	1.3E+08	Lynch and Conery, 2003
<i>Punica granatum</i>	U38311.1	7.1E+08	Royal Botanic Gardens Kew
<i>Bougainvillea glabra</i>	AF206873.1	4.0E+09	Royal Botanic Gardens Kew
<i>Oryza sativa</i>	AF069218.1	4.7E+08	Lynch and Conery, 2003
<i>Zea mays</i>	AF168884.1	2.7E+09	Royal Botanic Gardens Kew
<i>Tradescantia ohiensis</i>	AF069213.1	1.8E+10	Royal Botanic Gardens Kew
<i>Oncidium excavatum</i>	U42791.1	2.1E+09	Royal Botanic Gardens Kew
<i>Pistia stratiotes</i>	AF168869.1	3.2E+08	Royal Botanic Gardens Kew
<i>Chloranthus spicatus</i>	D29787.1	3.5E+09	Royal Botanic Gardens Kew
<i>Bulbine succulenta</i>	AF206876.1	1.1E+10	Royal Botanic Gardens Kew
<i>Welwitschia mirabilis</i>	AF207059.1	7.1E+09	Royal Botanic Gardens Kew
<i>Gnetum costatum</i>	AY755661.1	3.9E+09	Royal Botanic Gardens Kew
<i>Gnetum gnemon</i>	AY755660.1	3.8E+09	Royal Botanic Gardens Kew
<i>Cryptomeria japonica</i>	D85304.1	1.1E+10	Royal Botanic Gardens Kew
<i>Taiwania cryptomerioides</i>	D38250.1	1.9E+10	Royal Botanic Gardens Kew
<i>Phyllocladus trichomonoides</i>	D38244.1	9.8E+09	Royal Botanic Gardens Kew
<i>Lepidothamnus laxifolius</i>	AF342755.1	6.6E+09	Royal Botanic Gardens Kew
<i>Halocarpus biformis</i>	AF342762.1	1.1E+10	Royal Botanic Gardens Kew
<i>Lagarostrobos colensoi</i>	AF342753.1	1.4E+10	Royal Botanic Gardens Kew
<i>Pinus elliotii</i>	D38245.1	2.3E+10	Royal Botanic Gardens Kew
<i>Psilotum nudum</i>	X81963.1	7.1E+10	Royal Botanic Gardens Kew
<i>Equisetum hyemale</i>	U18500.1	1.2E+10	Royal Botanic Gardens Kew
<i>Pycnococcus sp. 1</i>	AF122889.1	4.0E+08	Veldhuis et al, 1997
<i>Pycnococcus sp. 2</i>	AY425305.1	1.5E+08	Veldhuis et al, 1997
unidentified prasinophyte	AJ010406.1	4.3E+08	Veldhuis et al, 1997

<i>Nannochloris atomus</i>	AB080303.1	1.2E+08	Veldhuis et al, 1997
<i>Prototheca zopfii</i>	X63519.1	6.7E+07	Shuter et al, 1983
<i>Ulva rigida</i>	AJ005414.1	1.5E+08	Royal Botanic Gardens Kew
<i>Cladophora sericea</i>	Z35320.1	2.9E+08	Royal Botanic Gardens Kew
<i>Anadyomene stellata</i>	AF510147.1	1.3E+09	Royal Botanic Gardens Kew
<i>Cladophoropsis macromeres</i>	AF510144.1	2.0E+09	Royal Botanic Gardens Kew
<i>Acetabularia major</i>	Z33462.1	1.2E+09	Royal Botanic Gardens Kew
<i>Parvocaulis parvula</i>	Z33471.1	4.4E+08	Veldhuis et al, 1997
<i>Halicoryne wrightii</i>	AY165786.1	9.3E+08	Royal Botanic Gardens Kew
Coccoid green alga 1	U40921.1	6.2E+07	Veldhuis et al, 1997
<i>Pyramimonas parkeae</i>	AB017124.3	6.7E+09	Veldhuis et al, 1997
<i>Micromonas pusilla</i>	AY425320.1	1.1E+08	Veldhuis et al, 1997
<i>Mantoniella squamata</i>	X73999.1	6.6E+08	Veldhuis et al, 1997
<i>Micromonas</i> sp.	AJ010408.1	1.2E+08	Veldhuis et al, 1997
<i>Prasinococcus</i> sp. 1	AF203403.1	4.5E+08	Veldhuis et al, 1997
<i>Prasinococcus capsulatus</i>	AB058384.1	1.1E+08	Veldhuis et al, 1997
Coccoid green alga 2	U40919.1	2.6E+08	Veldhuis et al, 1997
<i>Prasinococcus</i> sp. 2	AF203401.1	5.1E+08	Veldhuis et al, 1997
Coccoid prasinophyte 1	AF203402.1	7.2E+07	Veldhuis et al, 1997
Coccoid prasinophyte 2	AF203399.1	9.9E+07	Veldhuis et al, 1997
<i>Storeatula major</i>	U53130.1	5.0E+09	Veldhuis et al, 1997
<i>Rhodomonas</i> sp.	AB183594.1	1.7E+09	Veldhuis et al, 1997
<i>Proteomonas sulcata</i>	AJ007285.1	3.0E+09	Veldhuis et al, 1997
<i>Hemiselmis rufescens</i>	AJ007283.1	4.8E+08	Veldhuis et al, 1997
<i>Akashiwo sanguinea</i>	AB183672.1	6.8E+10	Shuter et al, 1983
<i>Amphidinium carterae</i>	AF274251.1	1.1E+10	Veldhuis et al, 1997
<i>Scrippsiella sweeneyae</i>	AF274276.1	1.4E+10	Shuter et al, 1983
<i>Scrippsiella trochoidea</i>	AJ415515.1	1.6E+10	Shuter et al, 1983
<i>Heterocapsa niei</i>	AF274265.1	5.8E+10	Veldhuis et al, 1997
<i>Heterocapsa triquetra</i>	AF022198.1	2.2E+10	Veldhuis et al, 1997
<i>Prorocentrum minimum</i>	AJ415520.1	3.9E+10	Veldhuis et al, 1997
<i>Prorocentrum micans</i>	AJ415519.1	2.4E+11	Veldhuis et al, 1997
<i>Karena brevis</i>	AF352822.1	4.8E+10	Shuter et al, 1983
<i>Gonyaulax polyedra</i>	AJ415511.1	1.3E+11	Shuter et al, 1983
<i>Alexandrium catenella</i>	AJ535392.1	1.9E+11	Veldhuis et al, 1997
<i>Gymnodinium simplex</i>	U41086.1	5.0E+08	Shuter et al, 1983
<i>Navicula pelliculosa</i>	AY485454.1	6.8E+07	Shuter et al, 1983
<i>Phaeodactylum tricornutum</i>	AY485459.1	2.4E+08	Veldhuis et al, 1997
<i>Cylindrotheca fusiformis</i>	AY485457.1	4.1E+08	Shuter et al, 1983
<i>Thalassiosira eccentrica</i>	X85396.1	2.5E+10	Shuter et al, 1983
<i>Thalassiosira rotula</i>	AF462059.1	5.0E+09	Shuter et al, 1983
<i>Skeletonema costatum</i>	AY485473.1	3.2E+08	Shuter et al, 1983
<i>Thalassiosira pseudonana</i>	AY485452.1	3.8E+08	Veldhuis et al, 1997
<i>Cyclotella meneghiniana</i>	AJ535172.1	1.2E+09	Veldhuis et al, 1997
<i>Thalassiosira weissflogii</i>	AY485445.1	5.5E+09	Veldhuis et al, 1997
<i>Minutocellus polymorphus</i>	AY485478.1	1.4E+09	Veldhuis et al, 1997
<i>Chaetoceros muelleri</i>	AY485453.1	5.7E+08	Veldhuis et al, 1997
<i>Ditylum brightwellii</i>	AY485444.1	1.2E+10	Veldhuis et al, 1997

<i>Nannochloropsis gaditana</i>	AF045039.1	1.6E+07	Veldhuis et al, 1997
<i>Nannochloropsis</i> sp.	U41094.1	1.8E+07	Veldhuis et al, 1997
<i>Ochromonas</i> sp. 1	U42382.1	4.8E+08	Veldhuis et al, 1997
<i>Ochromonas</i> sp. 2	U42381.1	5.4E+08	Veldhuis et al, 1997
<i>Heterosigma carterae</i>	U41650.1	5.5E+09	Veldhuis et al, 1997
<i>Aureoumbra lagunensis</i>	U40258.1	9.8E+07	Veldhuis et al, 1997
<i>Coccolid pelagophyte 1</i>	U40926.1	2.5E+08	Veldhuis et al, 1997
<i>Coccolid pelagophyte 2</i>	U40927.1	1.3E+08	Veldhuis et al, 1997
<i>Pelagococcus subviridis</i>	U14386.1	1.9E+08	Veldhuis et al, 1997
<i>Pelagomonas calceolata</i>	U14389.1	2.5E+08	Veldhuis et al, 1997
<i>Aureococcus anophagefferens</i>	AF117778.1	2.6E+08	Veldhuis et al, 1997
<i>Coccolid haptophyte</i>	U40924.1	3.5E+08	Veldhuis et al, 1997
<i>Emiliana huxleyi</i>	M87327.2	4.5E+08	Veldhuis et al, 1997
<i>Pleurochrysis carterae</i>	AJ544120.1	3.3E+09	Veldhuis et al, 1997
<i>Cruciplaccolithus neohelis</i>	AJ246262.1	7.9E+08	Veldhuis et al, 1997
<i>Phaeocystis globosa</i>	AF182110.1	1.1E+09	Veldhuis et al, 1997
<i>Phaeocystis</i> sp.	AJ278035.1	8.2E+08	Veldhuis et al, 1997
<i>Phaeocystis antarctica</i>	X77477.1	7.3E+08	Veldhuis et al, 1997
<i>Imantonia rotunda</i>	AJ246267.1	2.4E+08	Veldhuis et al, 1997
<i>Chrysochromulina kappa</i>	AJ246271.1	6.0E+08	Veldhuis et al, 1997
<i>Chrysochromulina</i>	AJ004868.1	5.9E+09	Veldhuis et al, 1997
<i>Pavlova lutheri</i>	AF106053.1	6.7E+08	Veldhuis et al, 1997
<i>Grateloupia luxurians</i>	U33132.1	2.0E+08	Royal Botanic Gardens Kew
<i>Gracilaria tikvahiae</i>	M33640.1	2.0E+08	Royal Botanic Gardens Kew
<i>Spongites yendoii</i>	U60948.1	1.5E+08	Royal Botanic Gardens Kew
<i>Saccharomyces cerevisiae</i>	AY790536.1	1.2E+07	Lynch and Conery, 2003
<i>Neurospora crassa</i>	AY046271.1	4.3E+07	Lynch and Conery, 2003
<i>Schizosaccharomyces pombe</i>	AY251644.1	1.4E+07	Lynch and Conery, 2003
<i>Oryctolagus cuniculus</i>	X06778.1	3.0E+09	Animal Genome Size Data Base
<i>Rattus norvegicus</i>	M11188.1	2.7E+09	Lynch and Conery, 2003
<i>Mus musculus</i>	X00686.1	2.5E+09	Lynch and Conery, 2003
<i>Equus caballus</i>	AJ311673.1	3.1E+09	Animal Genome Size Data Base
<i>Homo sapiens</i>	M10098.1	2.9E+09	Lynch and Conery, 2003
<i>Erinaceus europaeus</i>	AJ311675.1	3.5E+09	Animal Genome Size Data Base
<i>Vombatus ursinus</i>	AJ311678.1	3.8E+09	Animal Genome Size Data Base
<i>Didelphis virginiana</i>	AJ311677.1	4.0E+09	Animal Genome Size Data Base
<i>Ornithorhynchus anatinus</i>	AJ311679.1	2.9E+09	Animal Genome Size Data Base
<i>Struthio camelus</i>	AF173607.1	2.1E+09	Animal Genome Size Data Base
<i>Meleagris gallopavo</i>	AJ419877.1	1.5E+09	Animal Genome Size Data Base
<i>Anas platyrhynchos</i>	AF173614.1	1.3E+09	Animal Genome Size Data Base
<i>Melopsittacus undulatus</i>	AF173629.1	1.2E+09	Animal Genome Size Data Base
<i>Neophron percnopterus</i>	AF173633.1	1.5E+09	Animal Genome Size Data Base
<i>Columba livia</i>	AF173630.1	1.2E+09	Animal Genome Size Data Base
<i>Gallus gallus</i>	AF173612.1	1.2E+09	Animal Genome Size Data Base
<i>Crocodylus niloticus</i>	AJ311672.1	3.2E+09	Animal Genome Size Data Base
<i>Alligator mississippiensis</i>	AF173605.1	2.4E+09	Animal Genome Size Data Base
<i>Psammodromus algirus</i>	AY217918.1	2.1E+09	Animal Genome Size Data Base
<i>Eumeces inexpectatus</i>	AY217939.1	2.5E+09	Animal Genome Size Data Base

<i>Dalatias licha</i>	AY049827.1	8.7E+09	Animal Genome Size Data Base
<i>Squalus acanthias</i>	M91179.1	6.6E+09	Animal Genome Size Data Base
<i>Triakis semifasciata</i>	AF212180.2	4.6E+09	Animal Genome Size Data Base
<i>Galeocerdo cuvier</i>	AY049833.1	4.6E+09	Animal Genome Size Data Base
<i>Hemiscyllium ocellatum</i>	AY049835.1	5.2E+09	Animal Genome Size Data Base
<i>Latimeria chalumnae</i>	L11288.1	4.1E+09	Animal Genome Size Data Base
<i>Polyodon spathula</i>	AF188371.1	1.9E+09	Animal Genome Size Data Base
<i>Fundulus heteroclitus</i>	M91180.1	1.3E+09	Animal Genome Size Data Base
<i>Ictalurus punctatus</i>	AF021880.1	9.7E+08	Animal Genome Size Data Base
<i>Gadus morhua</i>	AF518205.1	6.3E+08	Animal Genome Size Data Base
<i>Gobius paganellus</i>	AF518189.1	4.0E+08	Animal Genome Size Data Base
<i>Dissostichus mawsoni</i>	AF518188.1	9.7E+08	Animal Genome Size Data Base
<i>Oncorhynchus kisutch</i>	AF030250.1	2.7E+09	Animal Genome Size Data Base
<i>Eptatretus stouti</i>	M97572.1	2.6E+09	Animal Genome Size Data Base
<i>Myxine glutinosa</i>	M97574.1	4.1E+09	Animal Genome Size Data Base
<i>Ciona intestinalis</i>	AB013017.1	1.6E+08	Lynch and Conery, 2003
<i>Strongylocentrotus purpuratus</i>	L28056.1	8.0E+08	Lynch and Conery, 2003
<i>Caenorhabditis elegans</i>	AY268117.1	1.0E+08	Lynch and Conery, 2003
<i>Tigriopus californicus</i>	AF363306.1	2.4E+08	Animal Genome Size Data Base
<i>Pagurus longicarpus</i>	AF436018.1	4.8E+09	Animal Genome Size Data Base
<i>Orconectes virilis</i>	AF235965.1	4.5E+09	Animal Genome Size Data Base
<i>Nephrops norvegicus</i>	Y14812.1	4.7E+09	Animal Genome Size Data Base
<i>Scyllarus arctus</i>	AF498677.1	1.9E+09	Animal Genome Size Data Base
<i>Palinurus elephas</i>	AF498678.1	4.1E+09	Animal Genome Size Data Base
<i>Scyllarides latus</i>	AF498669.1	6.7E+09	Animal Genome Size Data Base
<i>Squilla empusa</i>	L81946.1	5.7E+09	Animal Genome Size Data Base
<i>Locusta migratoria</i>	AF370793.1	5.6E+09	Animal Genome Size Data Base
<i>Blattella germanica</i>	AF220573.1	1.9E+09	Animal Genome Size Data Base
<i>Cassida rubiginosa</i>	AY676687.1	9.7E+08	Animal Genome Size Data Base
<i>Chrysolina affinis</i>	AJ622062.1	8.0E+08	Animal Genome Size Data Base
<i>Coccidula rufa</i>	AF427603.1	7.0E+08	Animal Genome Size Data Base
<i>Apis mellifera</i>	AY703484.1	2.1E+08	Animal Genome Size Data Base