Supplementary Materials Table S2. GenBank Accession numbers corresponding to the nrSSU region of the sequences retrieved from the GenBank to build the phylogenetic tree.

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| Species | **Strain** | **Accession number** |
| *Calidiella californica* | BCP-EM2VF32 | KF693789 |
| *Calidiella epiphylla* | FACHB-2406 | MT006196 |
| *Chaetopeltis orbicularis* |  | U83125 |
| *Chloroidium angustoellipsoideum* | SAG 2041 | KM116463 |
| *Chloroidium ellipsoideum* | CCAP 211S33 | FR865666 |
| *Chloroidium ellipsoideum* | SAG 2111 | FM946017 |
| *Chloroidium ellipsoideum* | CCAP 211/76 | MH551500 |
| *Chloroidium ellipsoideum* | CCAP 211/101 | MH551504 |
| *Chloroidium engadinensis* | SAG 812-1 | FM946011 |
| *Chloroidium lichenum* | CCAP 211/108 | MG022723 |
| *Chloroidium lichenum* | FACHB-2421 | MT006210 |
| *Chloroidium lichenum* | BII/C-1 | MH551507 |
| *Chloroidium lichenum* | CCAP 464/1 | MH551516 |
| *Chloroidium saccharophilum* | SAG 211-1b | FM946005 |
| *Chloroidium saccharophilum* | FACHB-1796 | KX024689 |
| *Coccomyxa chodatii* | SAG 216-2 | FN597598 |
| *Coccomyxa dispar* | SAG 49.84 | HG972998 |
| *Coccomyxa viridis*  | CCAP 216/14 | MG022735 |
| *Elliptochloris bilobata* | SAG 245.80 | HG972969 |
| *Elliptochloris subsphaerica* | SAG 2117 | LT560351 |
| *Floydiella terrestris* | UTEX 1709 | D86498 |
| *Geminella interrupta* | SAG 9.97 | EU434023 |
| *Hemichloris antarctica* | SAG 62.90 | HG972970 |
| *Jaagichlorella africana* | FACHB-2418 | MT006207 |
| *Jaagichlorella colocana* | FACHB-2417 | MT006206 |
| *Jaagichlorella hainangensis* | SAG 2360 | MH780943 |
| *Jaagichlorella roystonensis* | SAG 2198 | MH780942 |
| *Kalinella bambusicola* | CAUP H 7901 | EU346910 |
| *Kalinella pachyderma* | FACHB-2410 | MT006200 |
| *Kalinella sinensis* | FACHB-2412 | MT006201 |
| *Lobosphaera incisa* | SAG 2466 | KM020046 |
| *Massjukichlorella epiphytica* | FACHB-2369 | MK799925 |
| *Massjukichlorella minus* | FACHB-2373 | MK799929 |
| *Myrmecia astigmatica* | IB T76 | Z47208 |
| *Myrmecia biatorellae* | UTEX 907 | Z28971 |
| *Mysteriochloris nanningensis* | FACHB-2402 | MN497250 |
| *Oedogonium cardiacum* |  | U83133 |
| *Parachloroidium laureanum* | CAUP H8501 | HF586459 |
| *Parietochloris alveolaris* | UTEX 836 | EU878373 |
| *Parietochloris pseudoalveolaris* |  | M63002 |
| *Phyllosiphon ari* | N8 | KU640390 |
| *Phyllosiphon coccidium* | FACHB-1786 | KT950842 |
| *Polulichloris henanensis* | FACHB-1765 | KM085345 |
| *Polulichloris maxima* | FACHB-2407 | MT006197 |
| *Symbiochloris ficusa* | FACHB-2404 | MT006193 |
| *Symbiochloris handae* | CCHU 5616 | Z47207 |
| *Symbiochloris irregularis* | SAG 2036 | GU017659 |
| *Symbiochloris pauciautosporica* | SAG 12.86 | GU017651 |
| *Symbiochloris reticulata* | SAG 53.87 | GU017650 |
| *Symbiochloris tropica* | CAUP H 8602 | GU017655 |
| *Symbiochloris tschermakiae* | SAG 46.85 | GU017654 |
| *Trebouxia aggregata* | SAG 219-1d | EU123942 |
| *Trebouxia aggregata* |  | MT901379 |
| *Trebouxia aggregata* | SAG 219-1d | EU123942 |
| *Trebouxia impressa* | UTEX 892 | Z21551 |
| *Trebouxia jamesii* | UBT-86.132E2 | Z68700 |
| *Trochisciopsis tetraspora* | SAG 19.95 | KM020112 |
| *Viridiella fridericiana* | SAG 10.92 | FM958481 |
| *Viridiella fridericiana* | 237 | AJ439401 |
| *Watanabea alpicola* | SAG 2580 | MH499913 |
| *Watanabea borysthenica* | SAG 2550 | MH499911 |
| *Watanabea pyrenoidosa* | ACSSI 014 | MG696555 |
| *Watanabea reniformis* | SAG 211-9b | X73991 |
| *Xerochlorella olmae* | UTEX B 2993 | MN267184 |