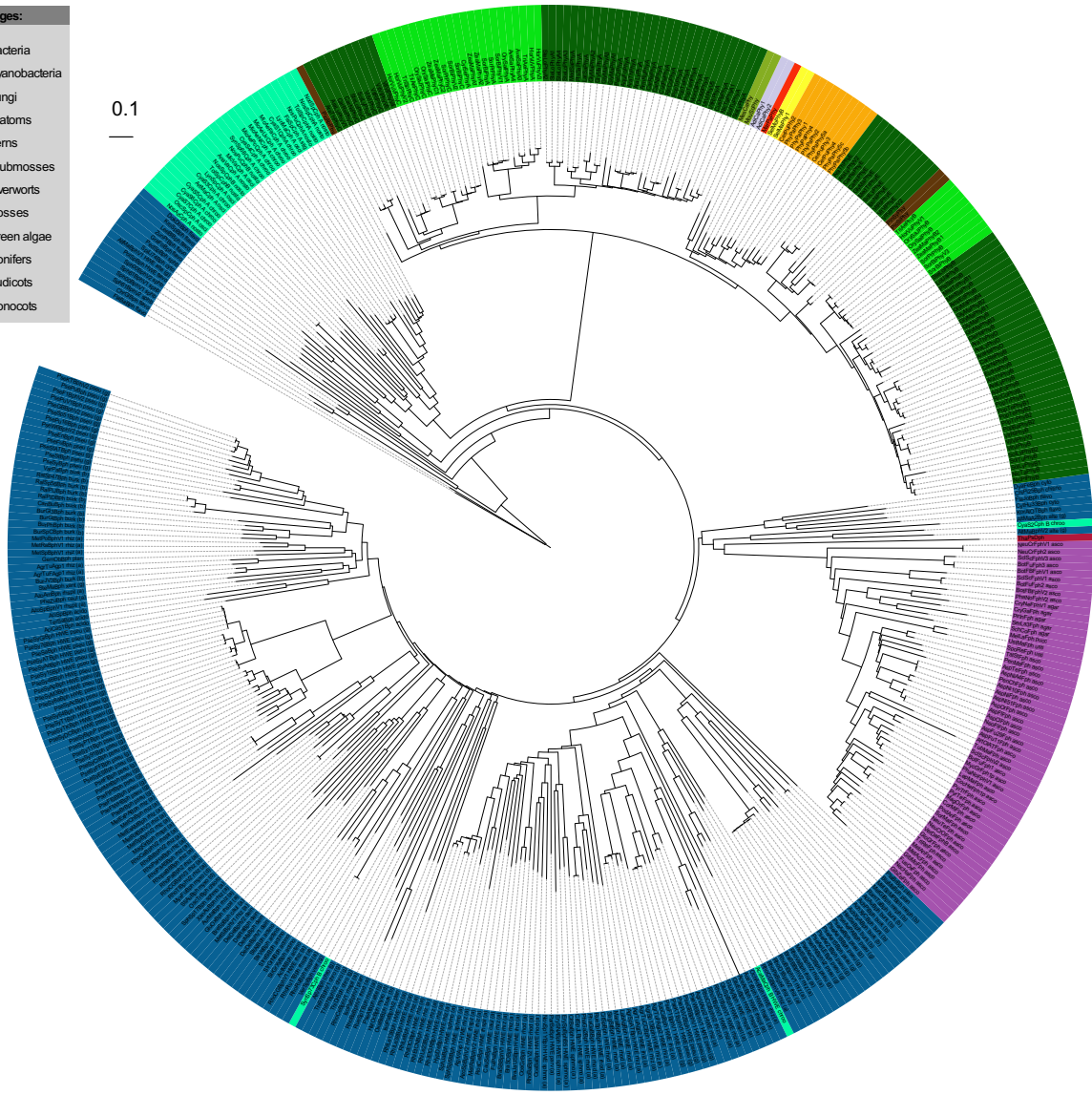
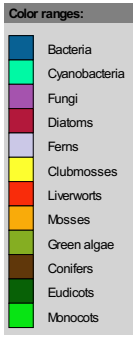
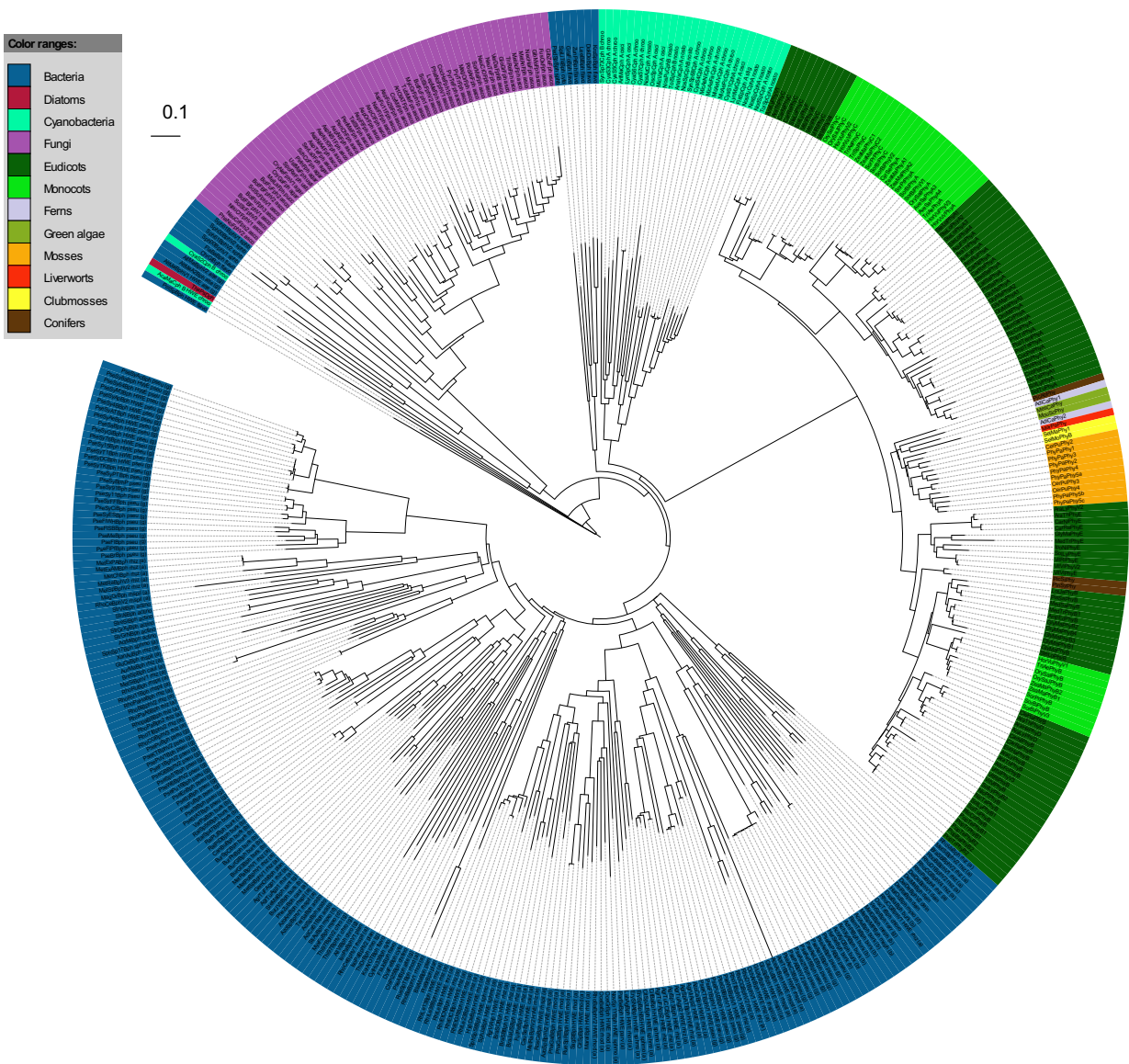


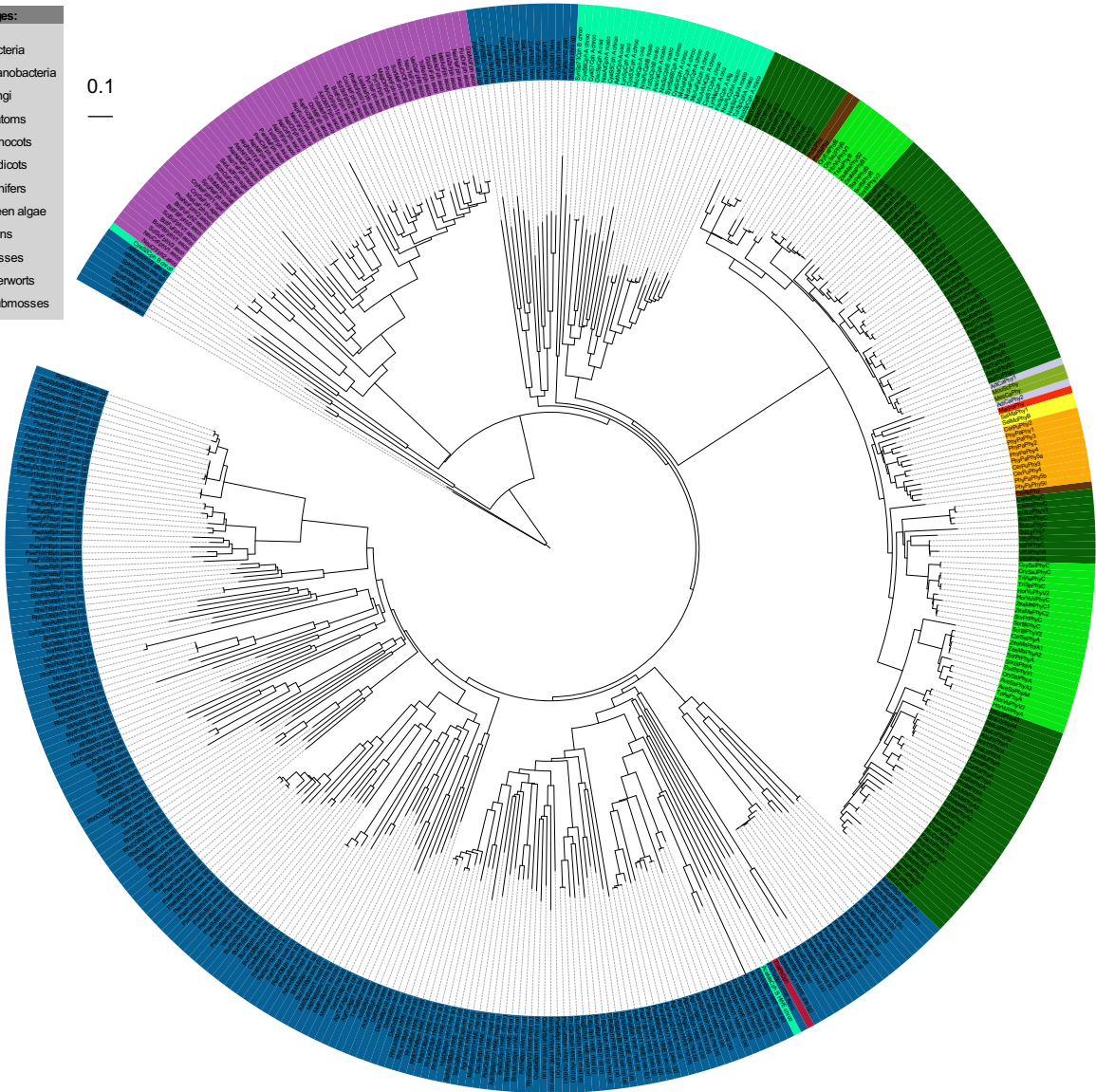
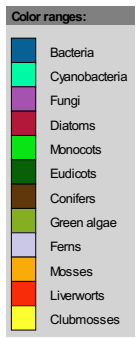
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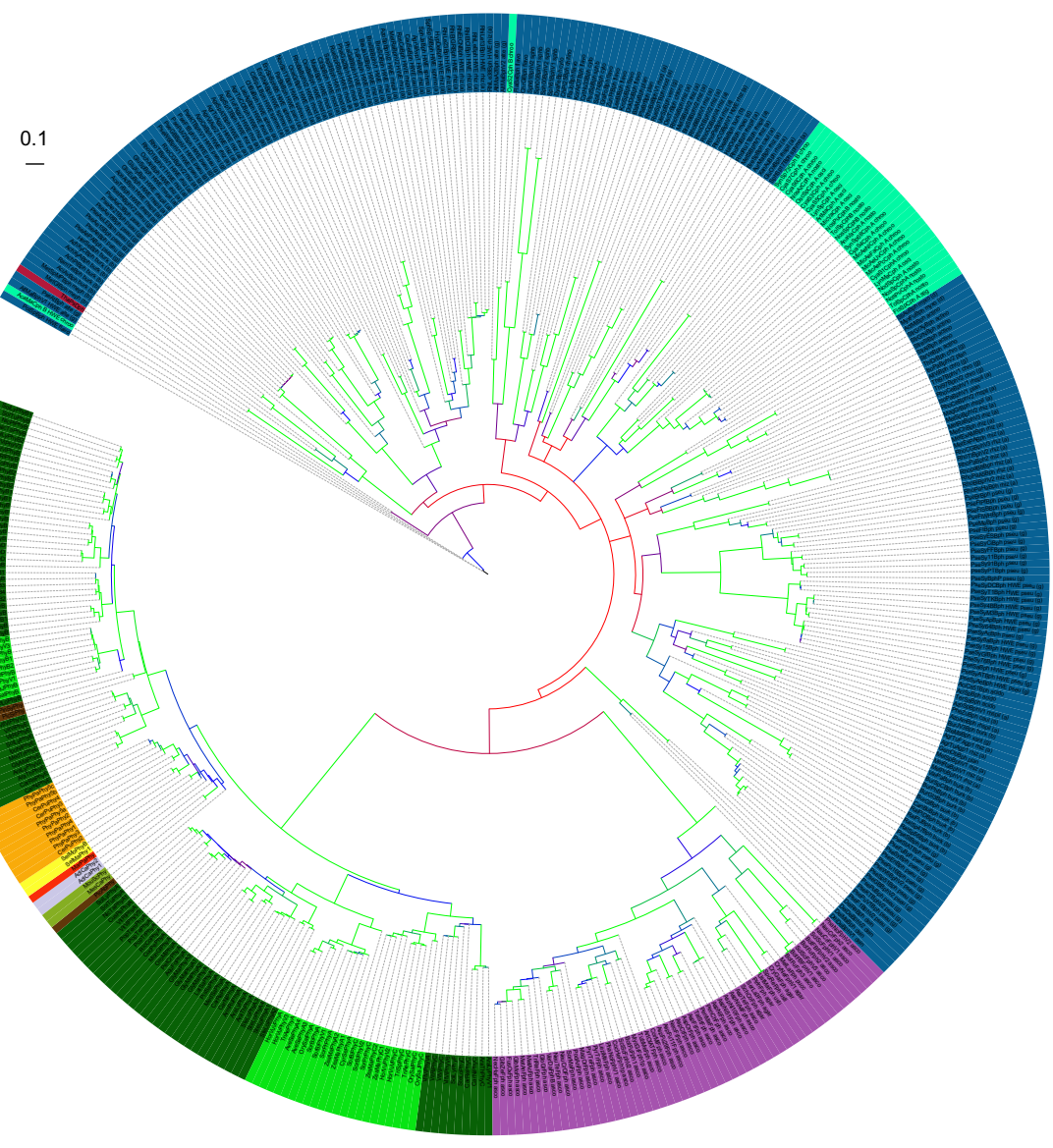
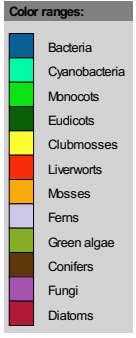
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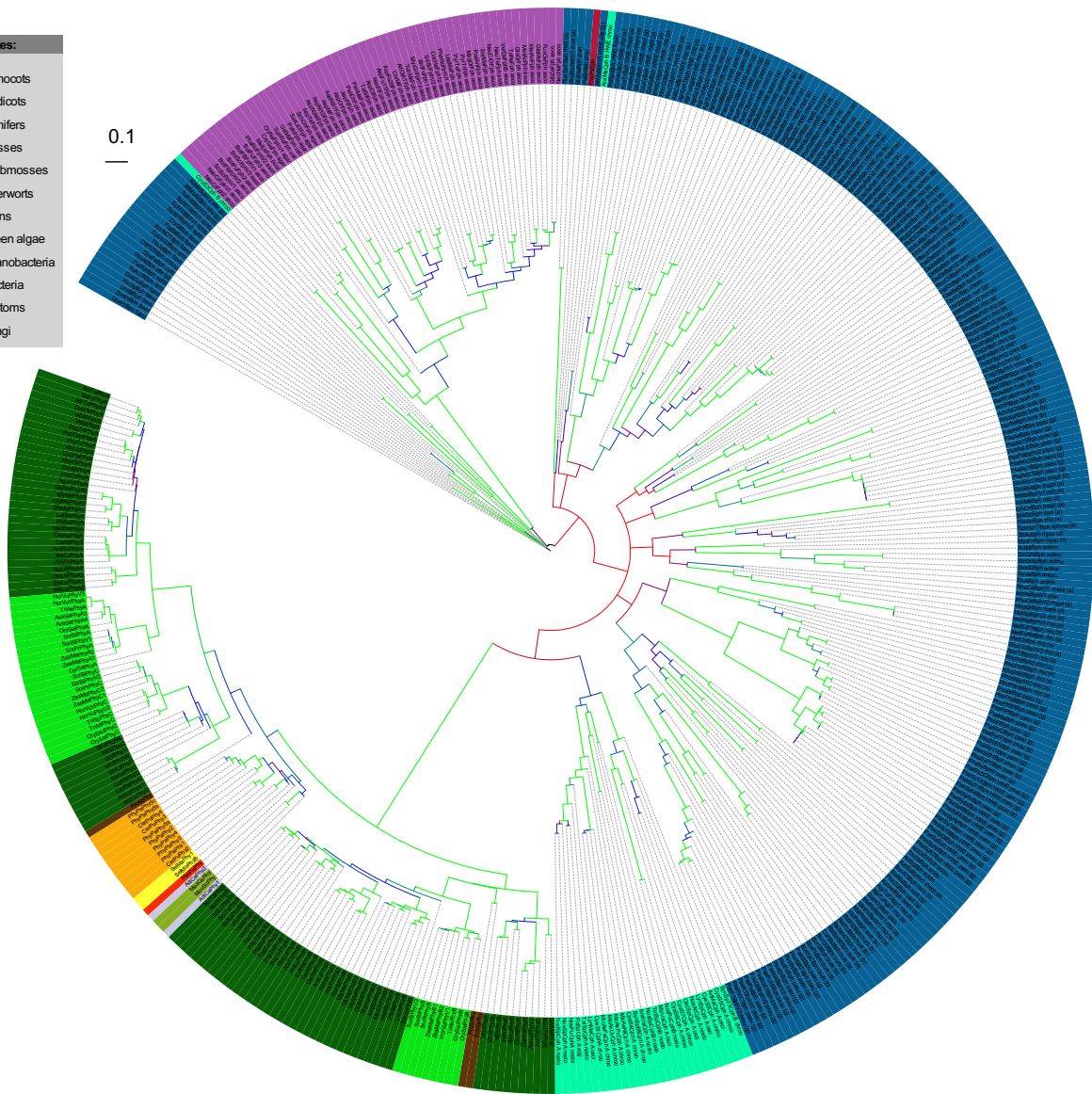
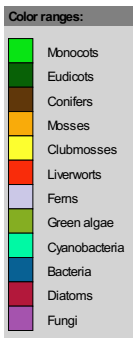
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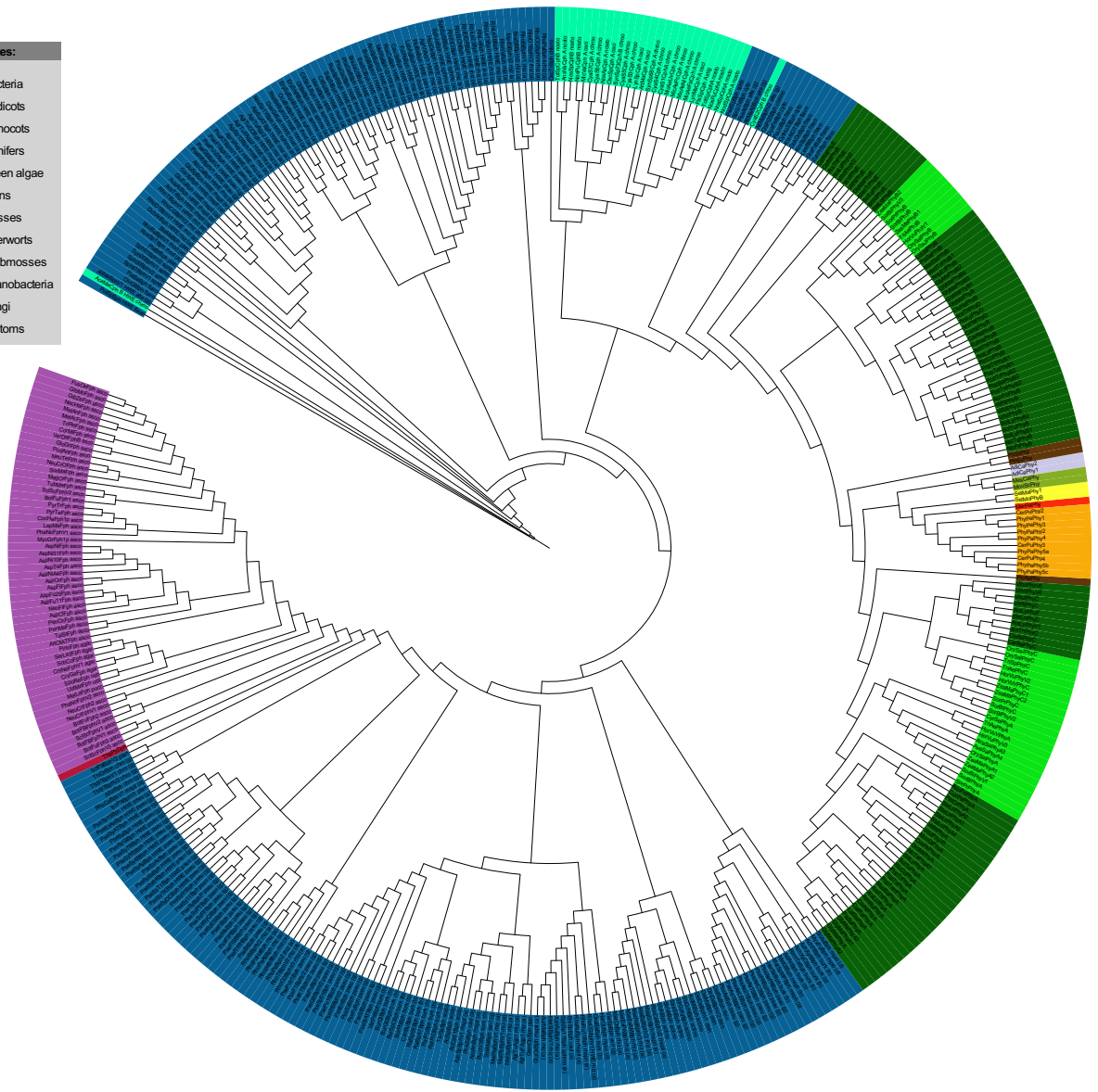
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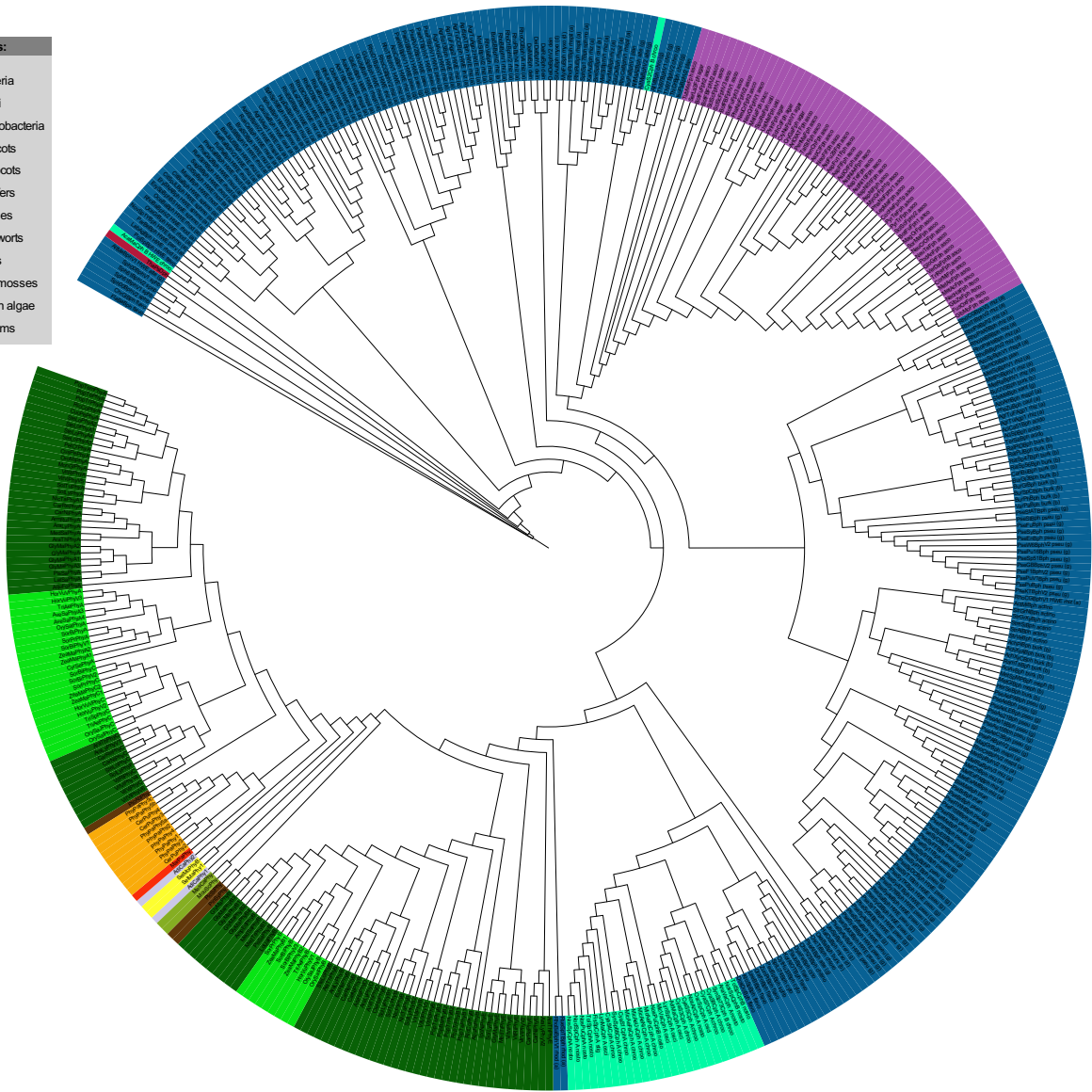
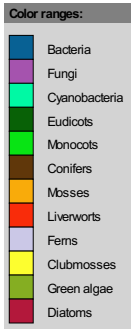
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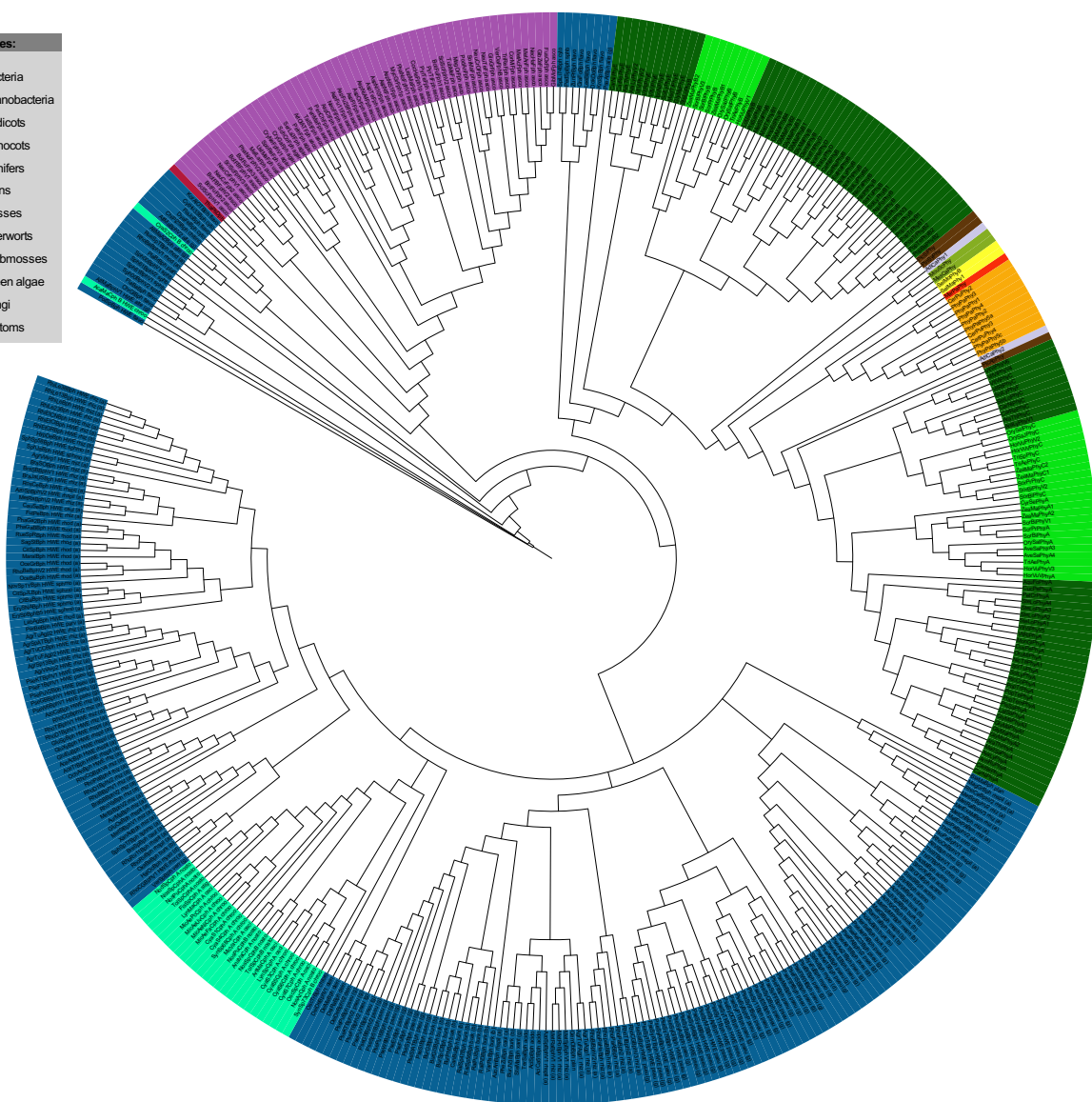
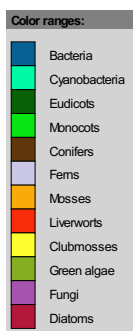
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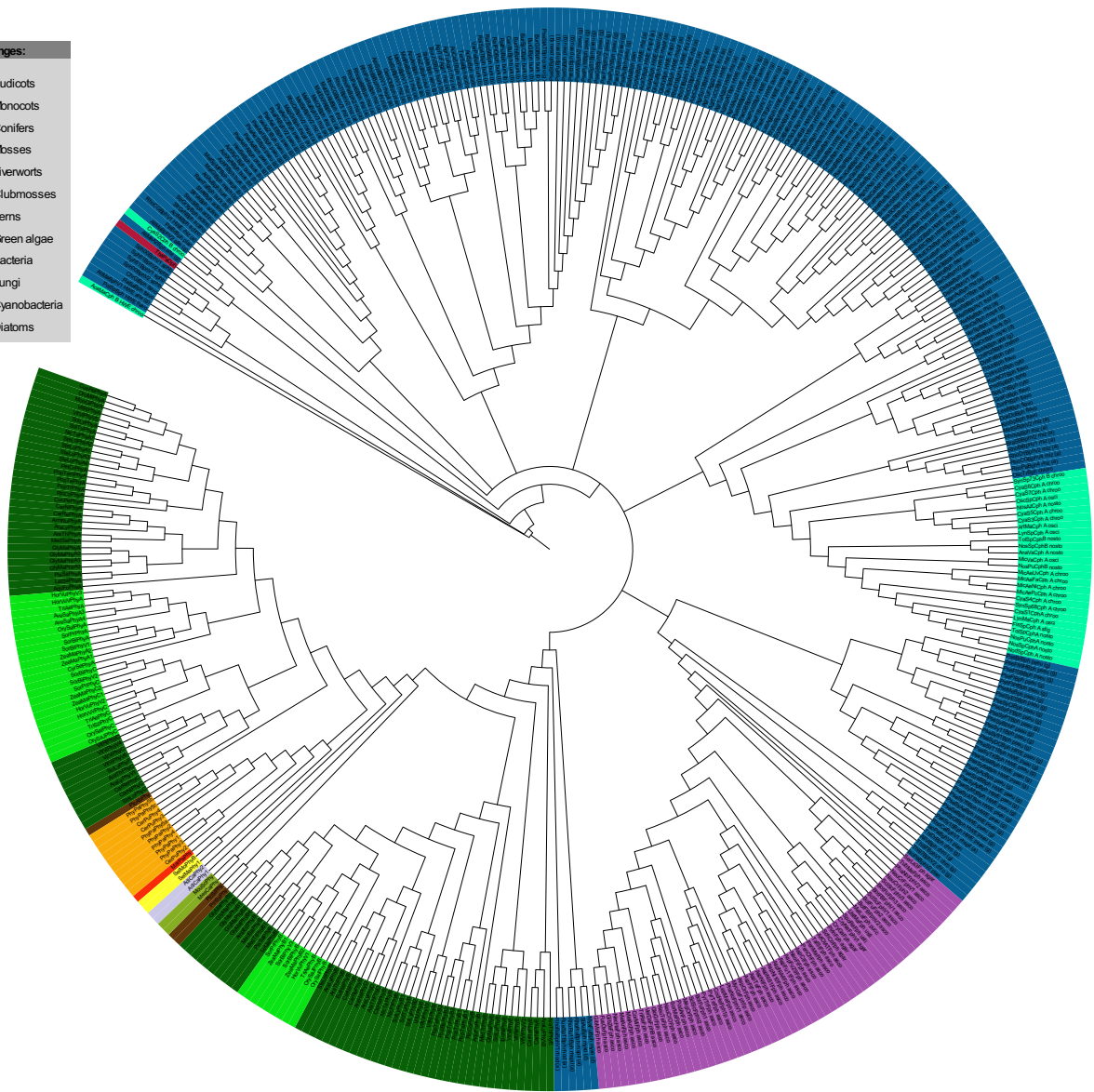
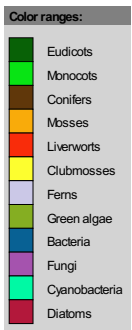
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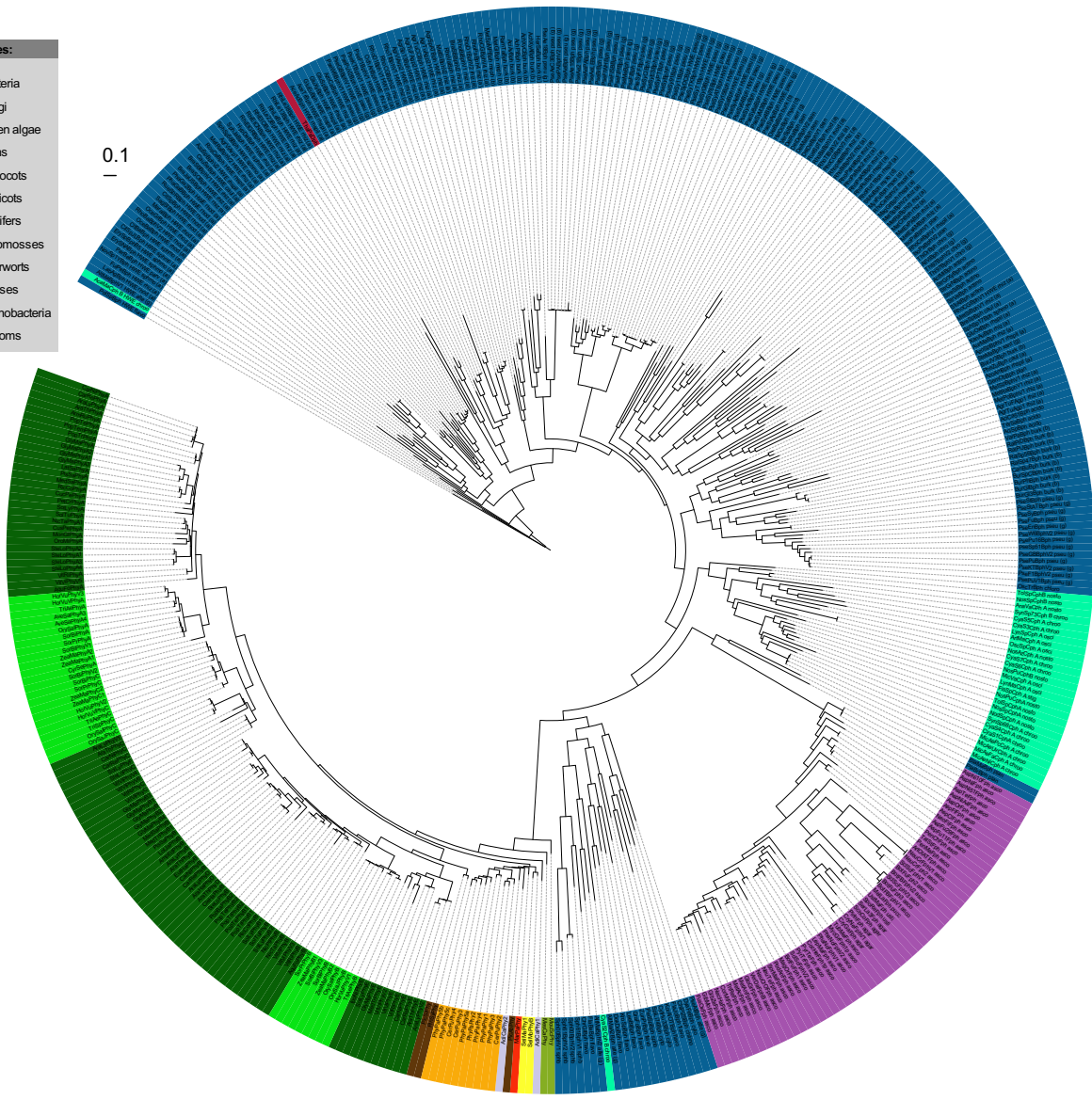
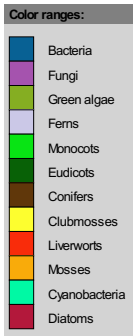
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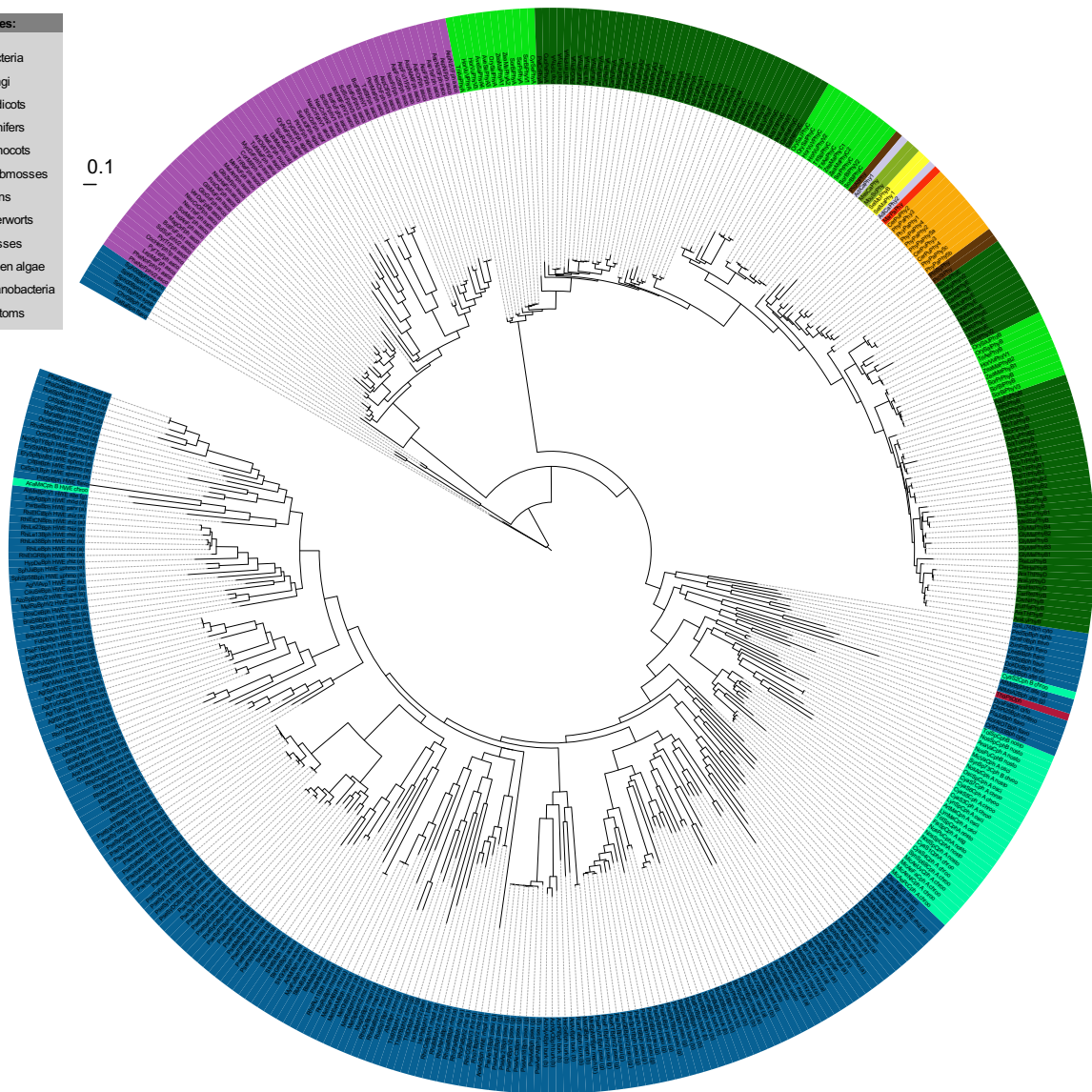
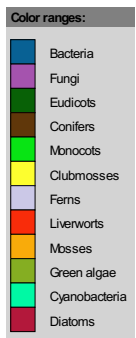
P9



P10

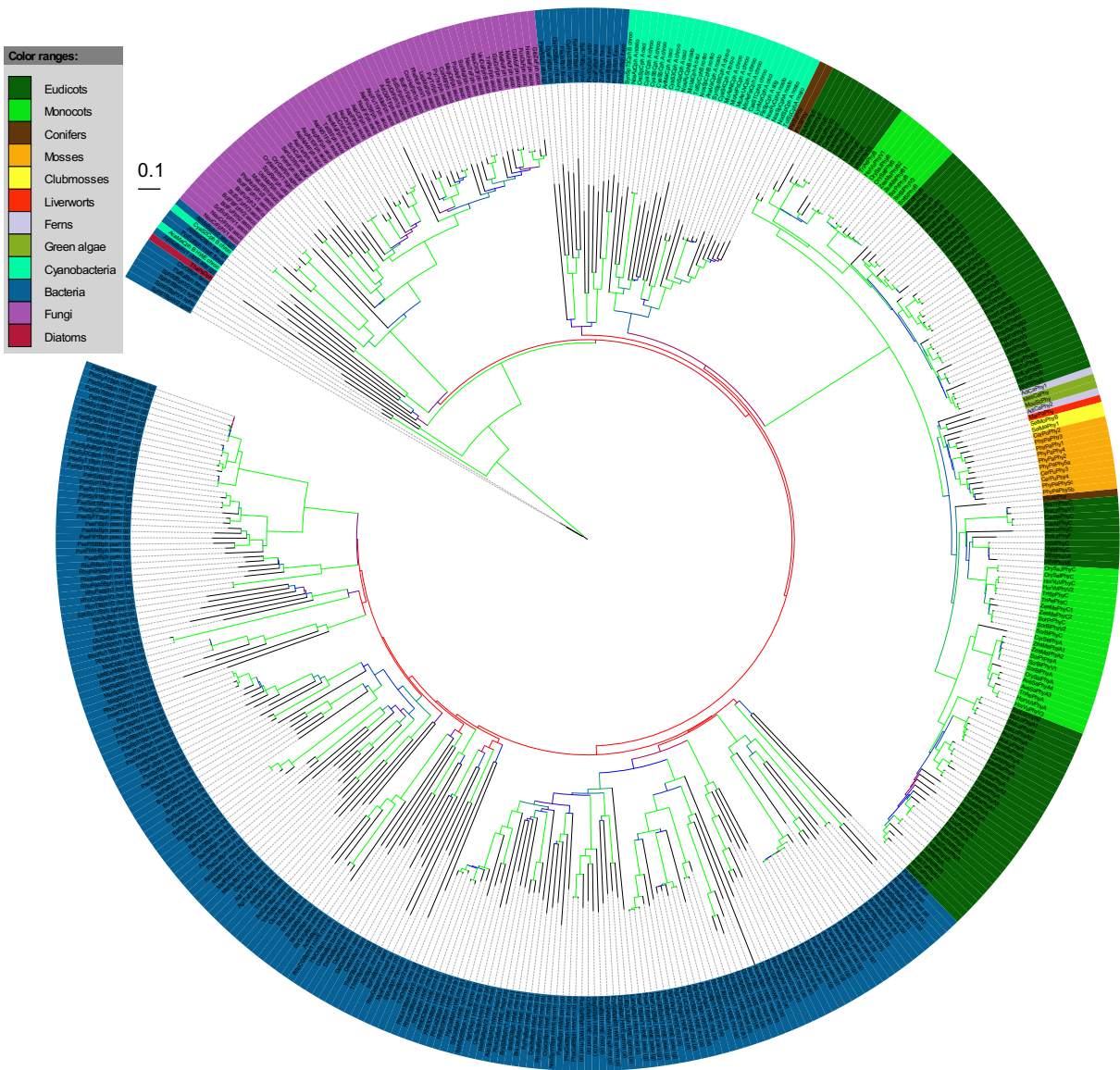


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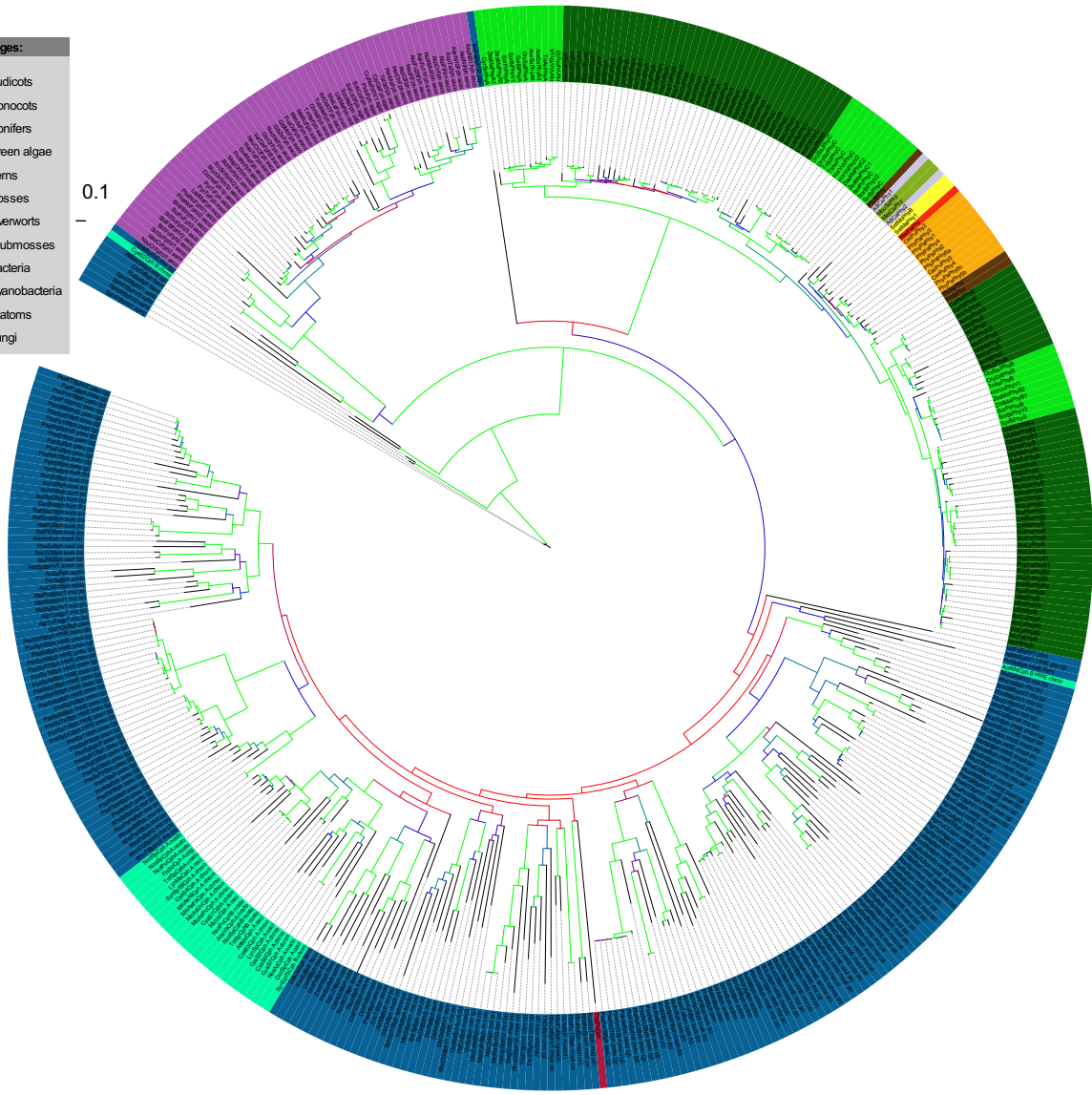
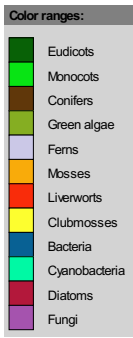


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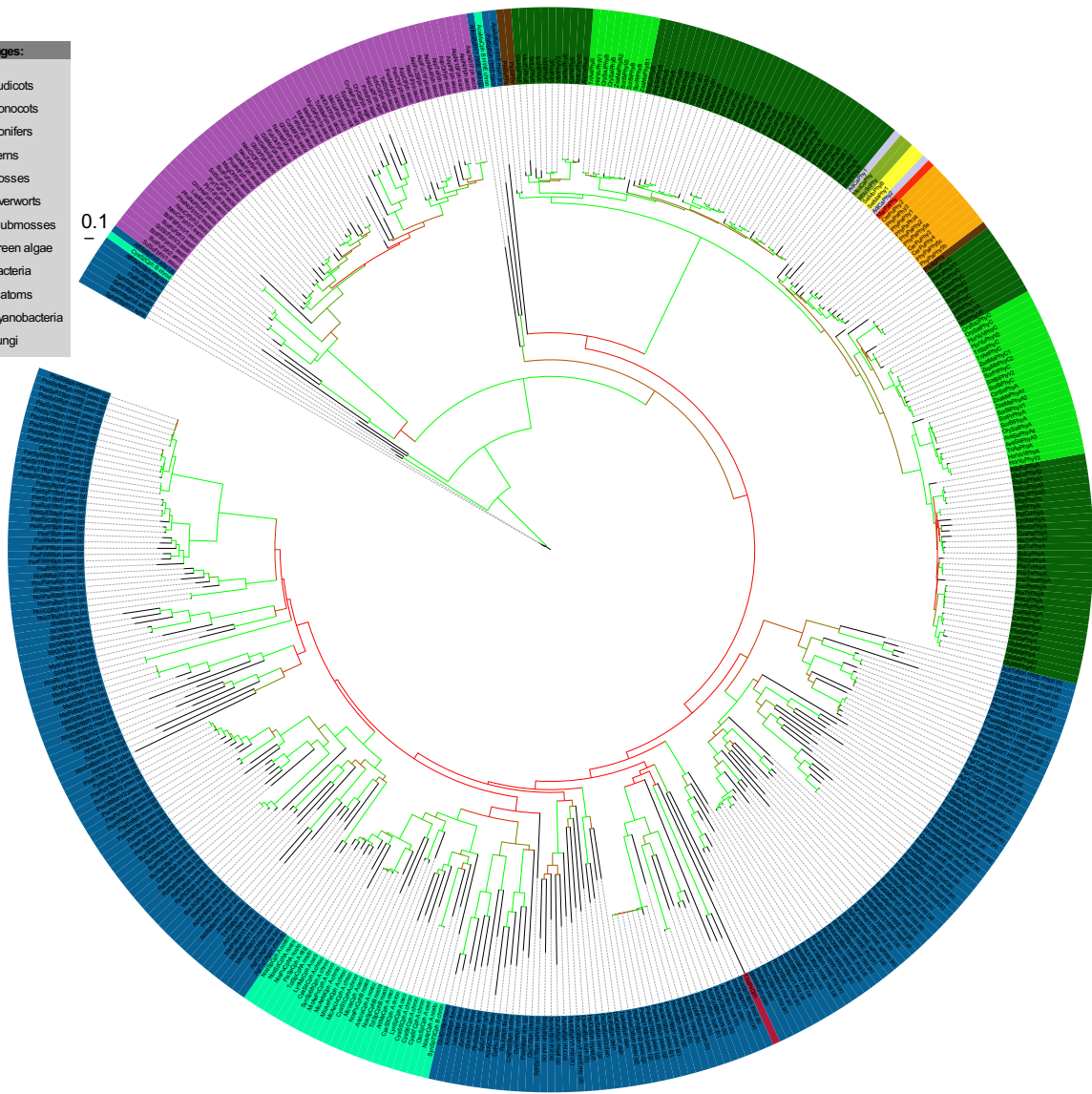
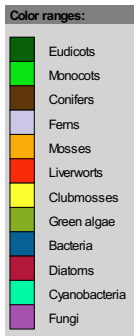
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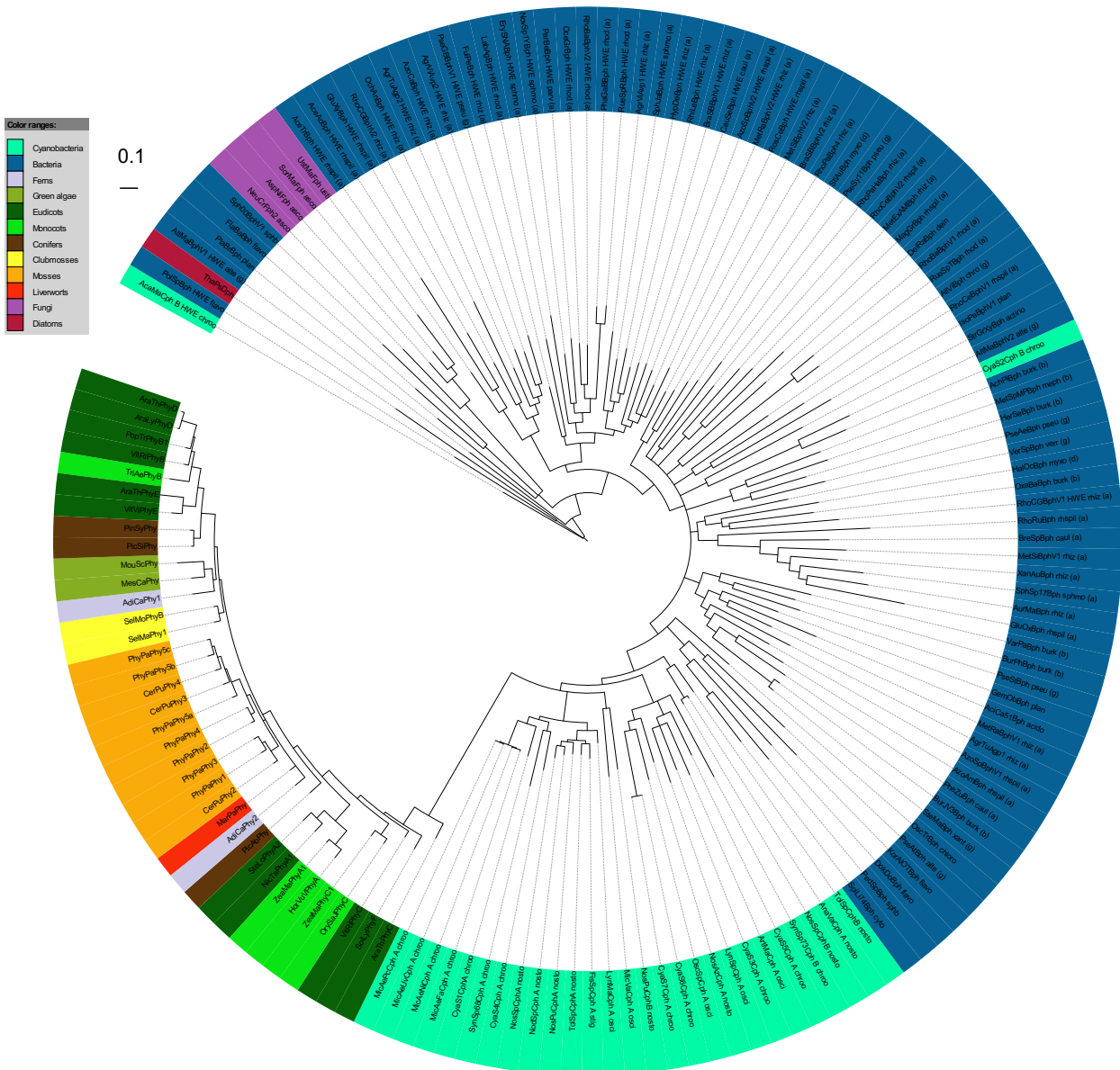
P14



P15



P16



P17

Additional file 2. Phylogenetic PGP trees P1 to P17. The tree numbers refer to the summary in Table 1. The color code is: blue for bacteria, light blue for cyanobacteria, orange for mosses, green for dicotyledonous plants, light green for monocotyledonous plants, brown for gymnosperms, red for liverworts, grey for ferns, purple for fungi and dark violet for diatom. Typically, phytochromes are denominated by a 5 letters species code together with an abbreviation for the particular group of phytochrome. Accession numbers and species / strain names are listed in supplemental Table 1. After each phytochrome abbreviation, additional taxonomic information is given for bacterial and fungal sequences: (a), α -proteobacterium; (b), β -proteobacterium; (g), γ -proteobacterium; (d), δ -proteobacterium; acido, Adicobacteriales; actino, Actinomycetales; agar, Agaricomycetes (basidiomycetes); asco, Ascomycota; burk, Burkholderiales; caul, Caulobacteriales; chitino, Chitinophagaceae; chroo, Chroococcales; cyto, Cytophagales; dein, Deinococcales; flavo, Flavobacteria; hwe, HWE histidine kinase; meph, Methylophilales; myxo, Myxococcales; nosto, Nostocales; osci, Oscillatoriales; parv, Parvulaculales; plan, Planctomycetales; pseu, Pseudomonadales; pucci, Pucciniomycetes (basidiomycetes); rhizo, Rhizobiales; rhod, Rhodobacterales; rnspl, Rhodospirillales; sphmo, Sphingomonadales; stig, Stigonematales; usli, Ustilagomycotina (basidiomycetes); verr, Verrucomicrobiales; xant, Xanthomonadales. The color of the branches indicate bootstrap values of 10-30% (red), 80-100% (green). Intermediate values are colored blue or with mixed colors. No information about branchlength is given in the PROTPARS trees P7, P8, P9 and P10.