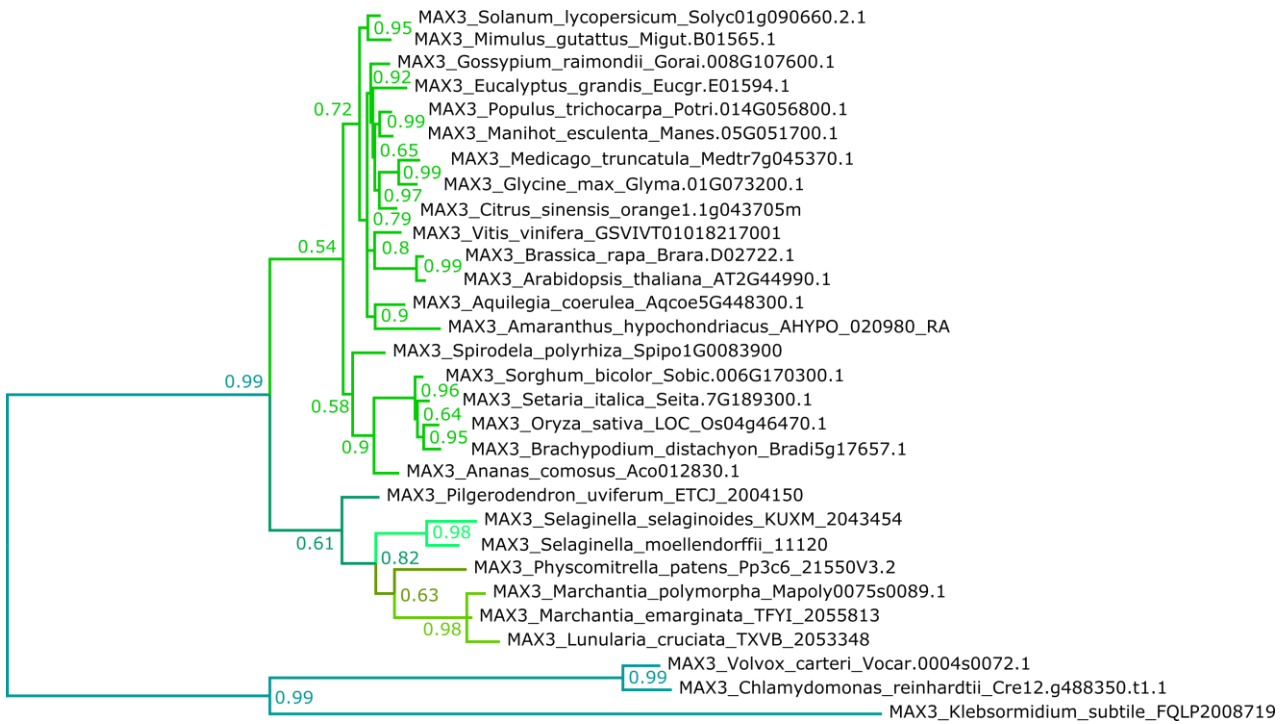


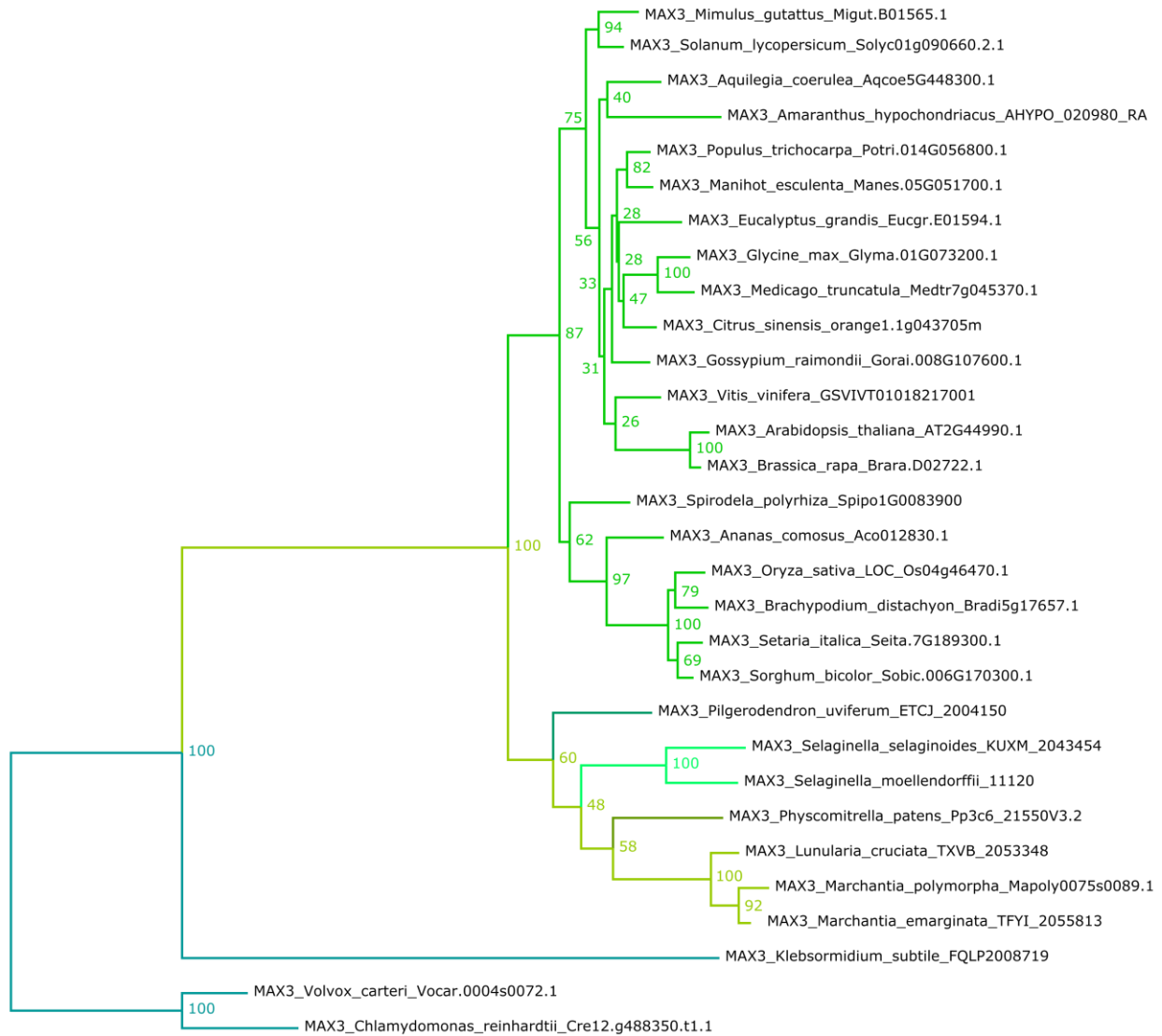
Additional File 7A: Full nucleotide-level ML phylogeny for CCD7 family

Maximum likelihood (ML) tree under the KOSI07+FU+R5 codon model in IQtree. Topology rooted with the liverwort clade. Bootstrap values are shown at each node of the tree.



Additional File 7B: Full amino acid-level Bayesian inference phylogeny for CCD7 family

Bayesian inference tree under the CAT + LG codon model in PhyloBayes. Topology rooted with the algal clade. Bootstrap values are shown at each node of the tree.



Additional File 7C: Full amino acid-level ML phylogeny for CCD7 family

Maximum likelihood (ML) tree with the amino acid dataset under the PROTCATLGX model in RAxML. Topology rooted at the chlorophyte algal clade. Bootstrap values are shown at each node of the tree.