



**Supplemental Figure S10:** Green Algal Phylogeny of liberal dataset showing the trait categories (haploid, haploid-diploid and diploid) for Life cycle based model [M2]. The molecular evolutionary traits: omega ( $dN/dS$ ), non-synonymous ( $dN$ ) and synonymous ( $dS$ ) were obtained for each of the three categories by allowing three different selection pattern corresponding to the trait categories.