

Figure S1. Conserved motifs and domains of *MSH1* genes. (A) The conserved domains of *MSH1* proteins from NCBI CDD; (B) The conserved domains of *MSH1* proteins from HMMER; (C) The conserved motifs of *MSH1* proteins; (D) Sequence logos of the three conserved domains (MutS_I domain, MutS_V domain, and GIY-YIG domain) in *MSH1* proteins.

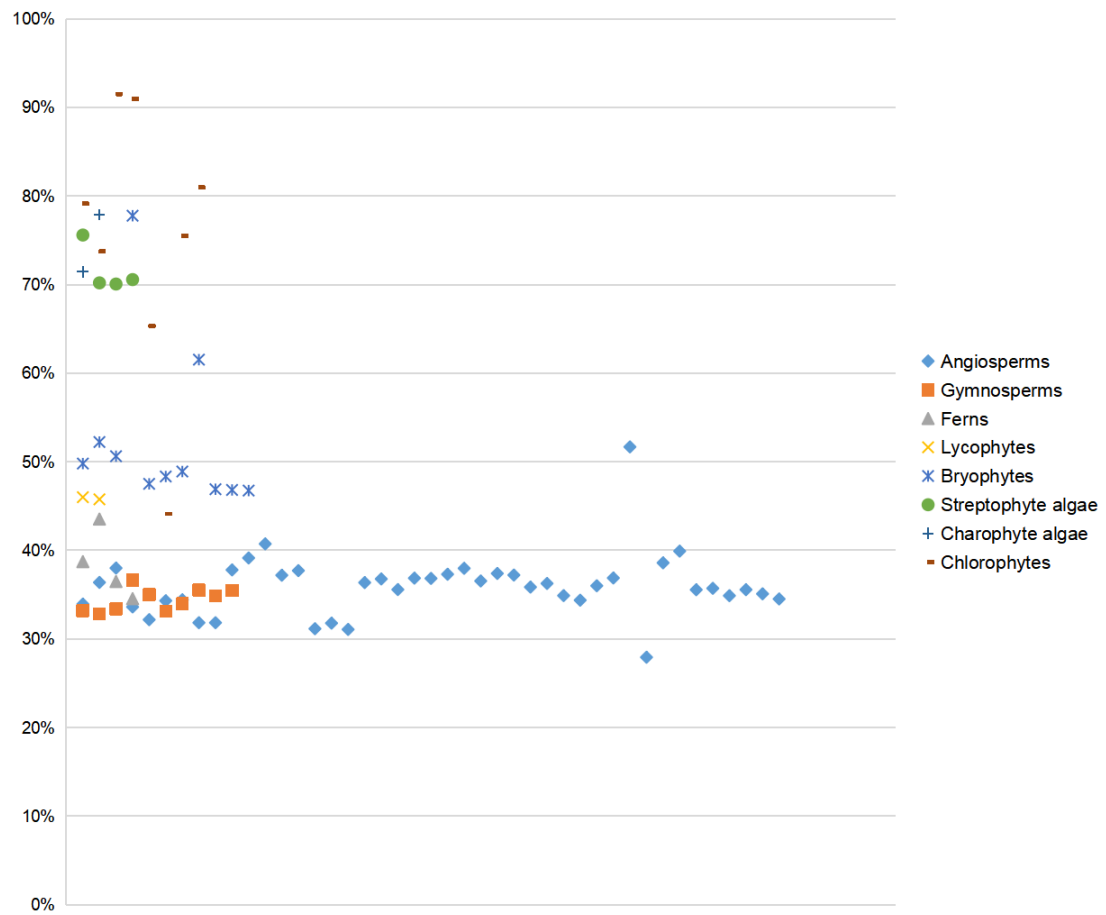


Figure S2. Distribution of GC content of the third codon of *MSH1* gene.

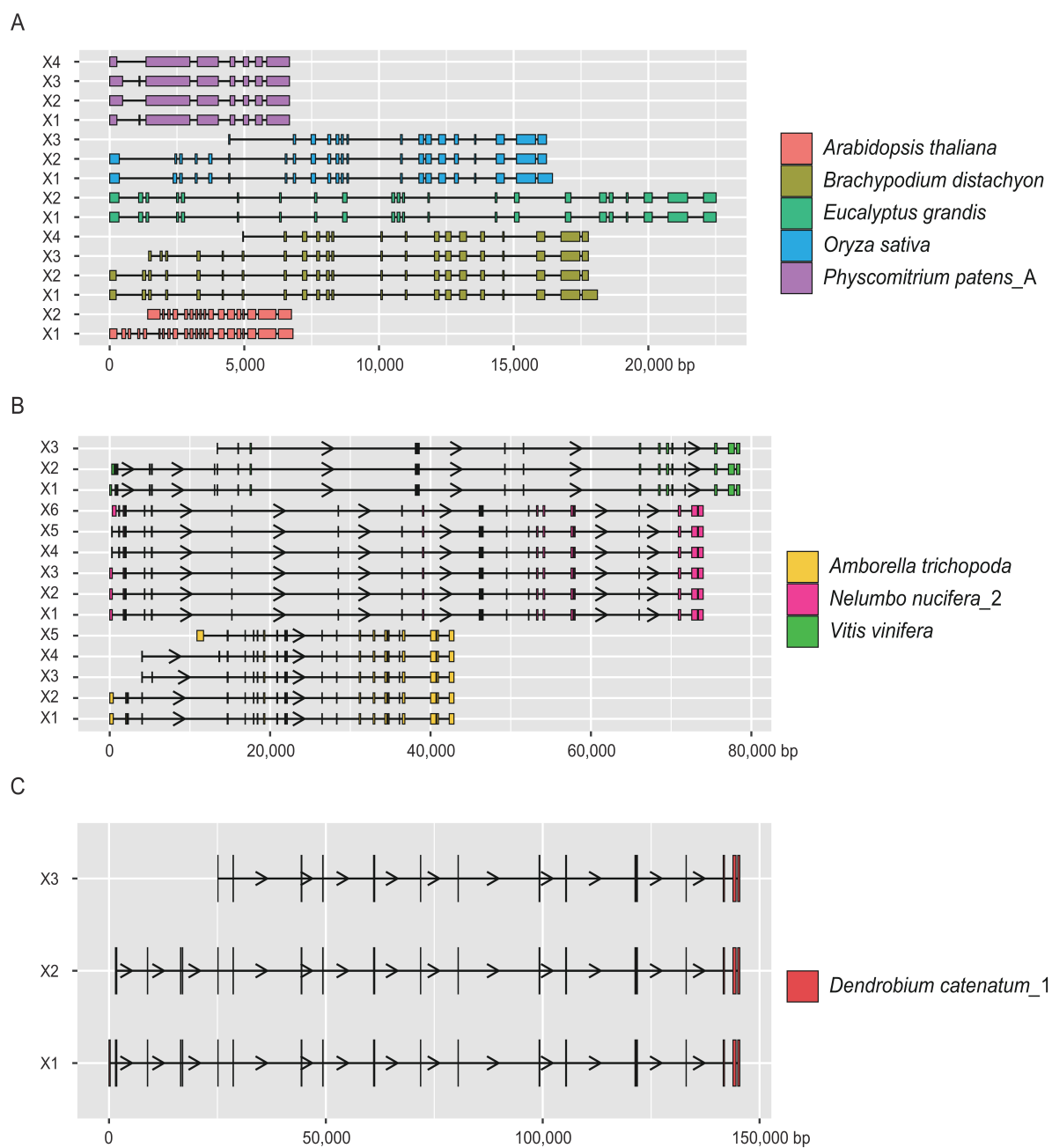


Figure S3. Schematic diagram of different transcripts of the *MSH1* gene in nine species.

(A) The transcripts of *Arabidopsis thaliana*, *Brachypodium distachyon*, *Eucalyptus grandis*, *Oryza sativa*, and *Physcomitrella patens*, respectively; (B) The transcripts of *Amborella trichopoda*, *Nelumbo nucifera*, and *Vitis vinifera*, respectively; (C) The transcripts of *Dendrobium catenatum*. Arrows indicate the direction of genes.