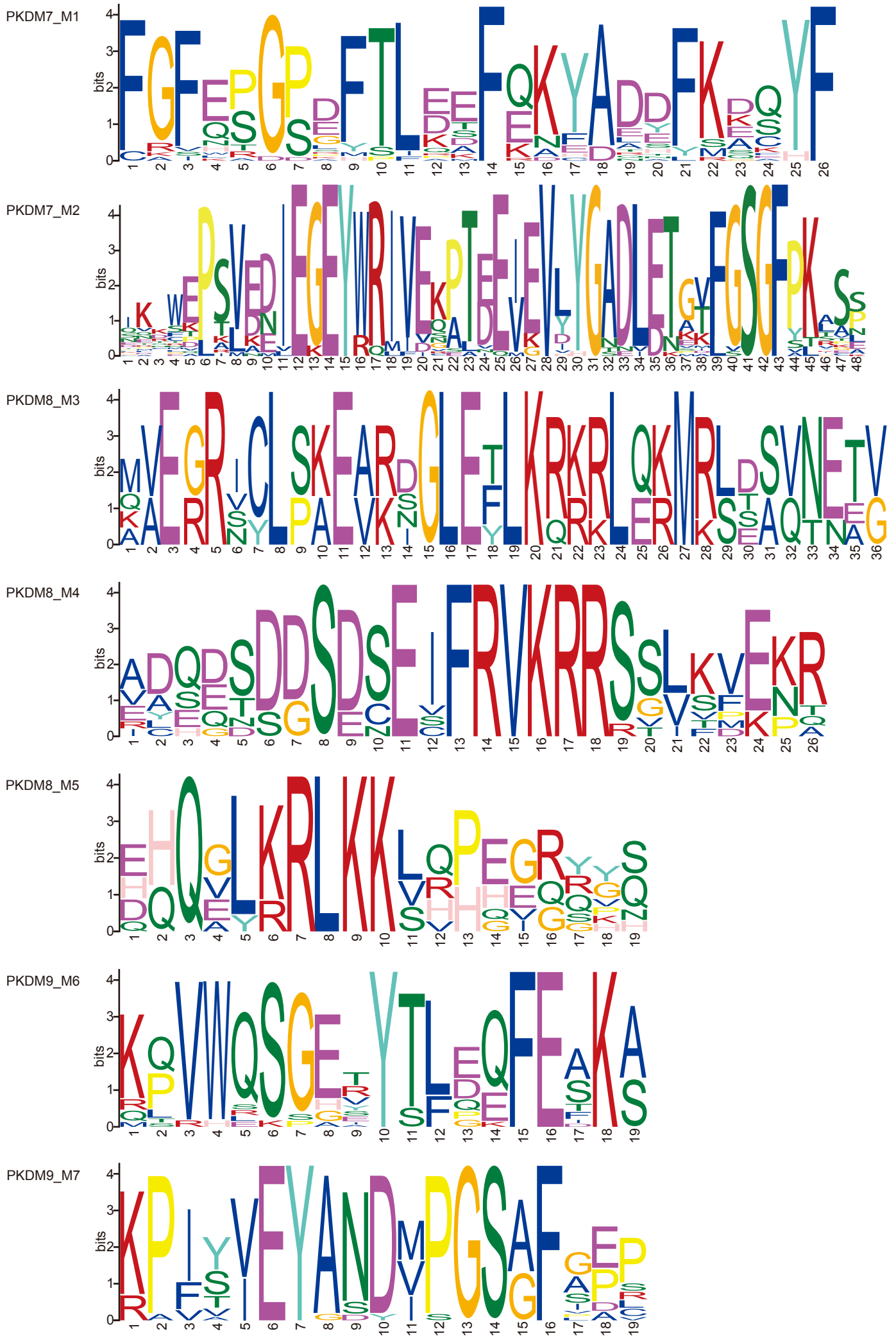
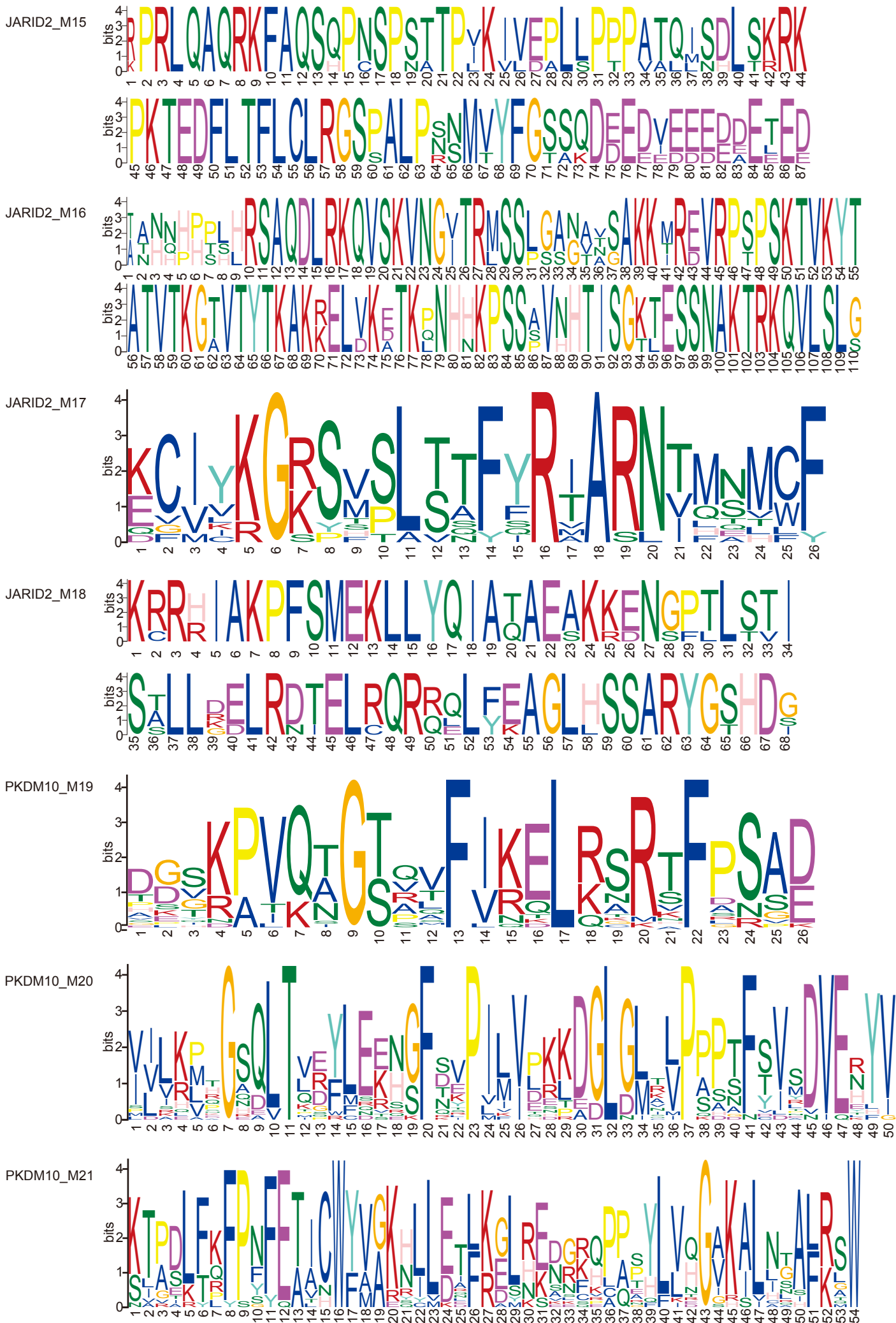
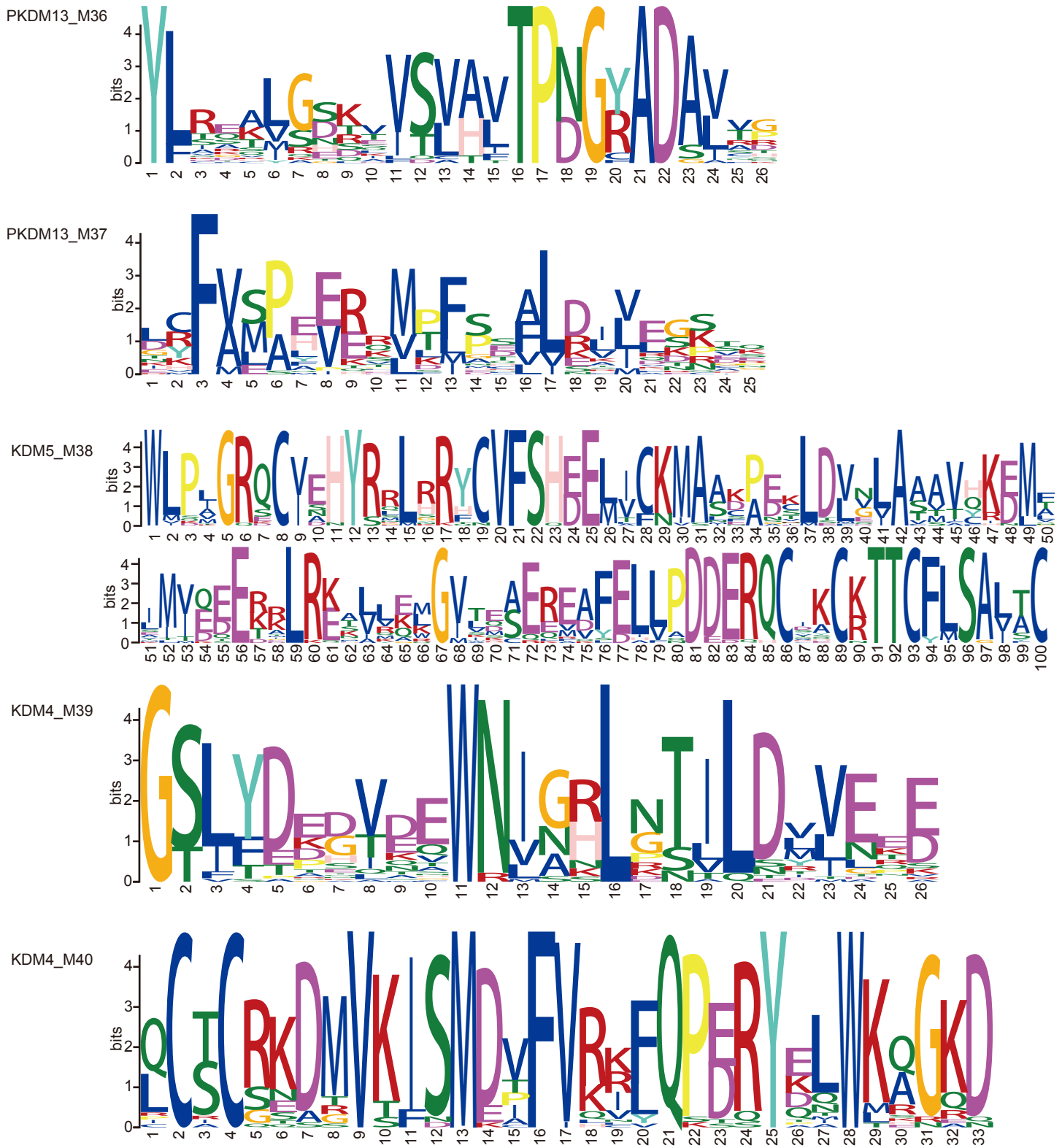


A

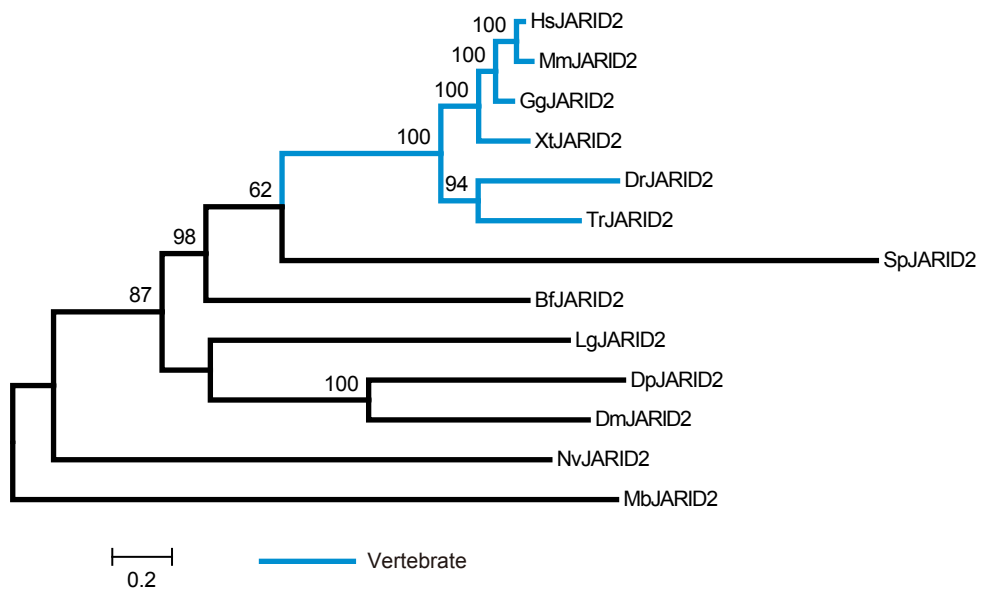
C



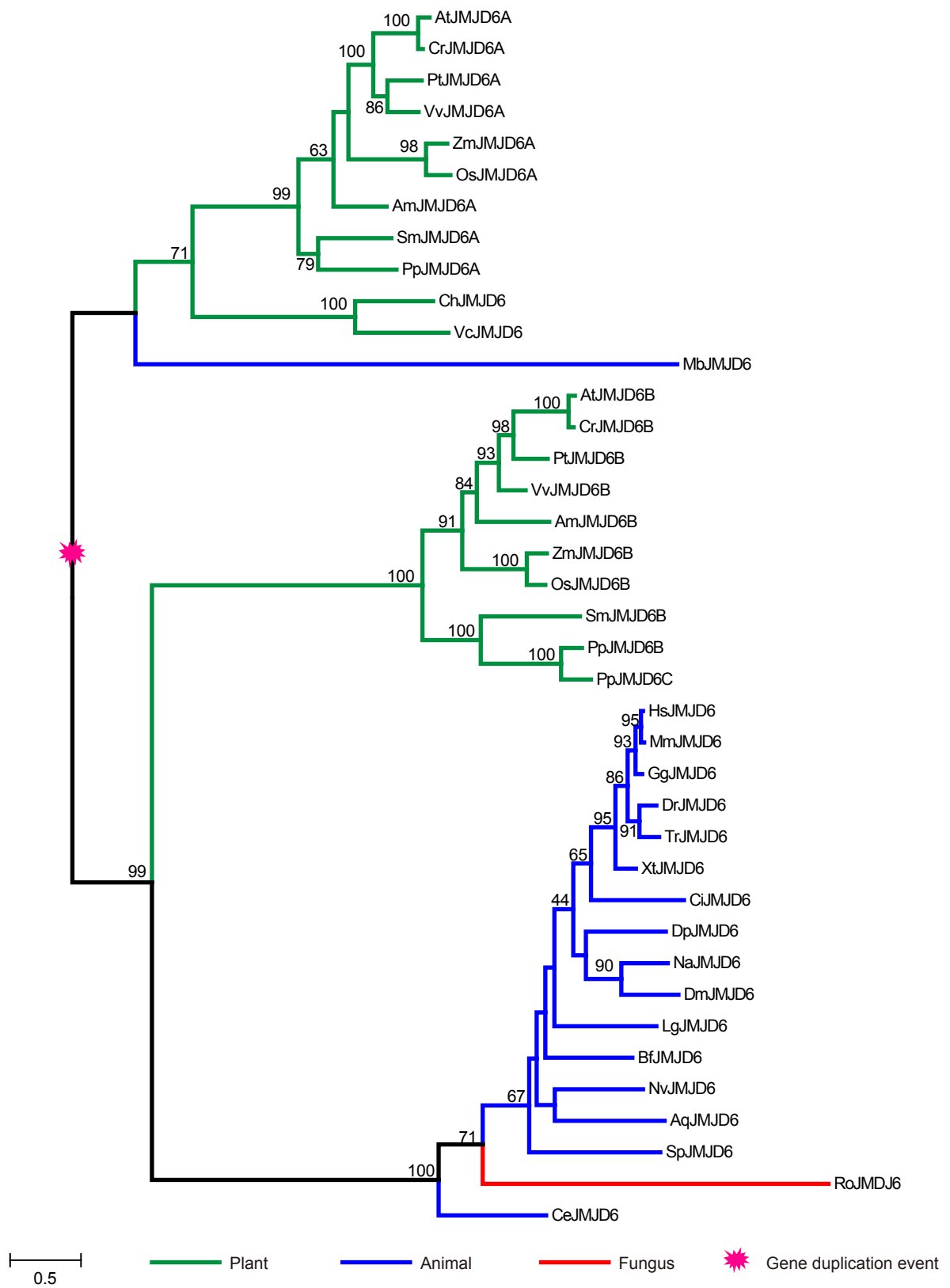
F



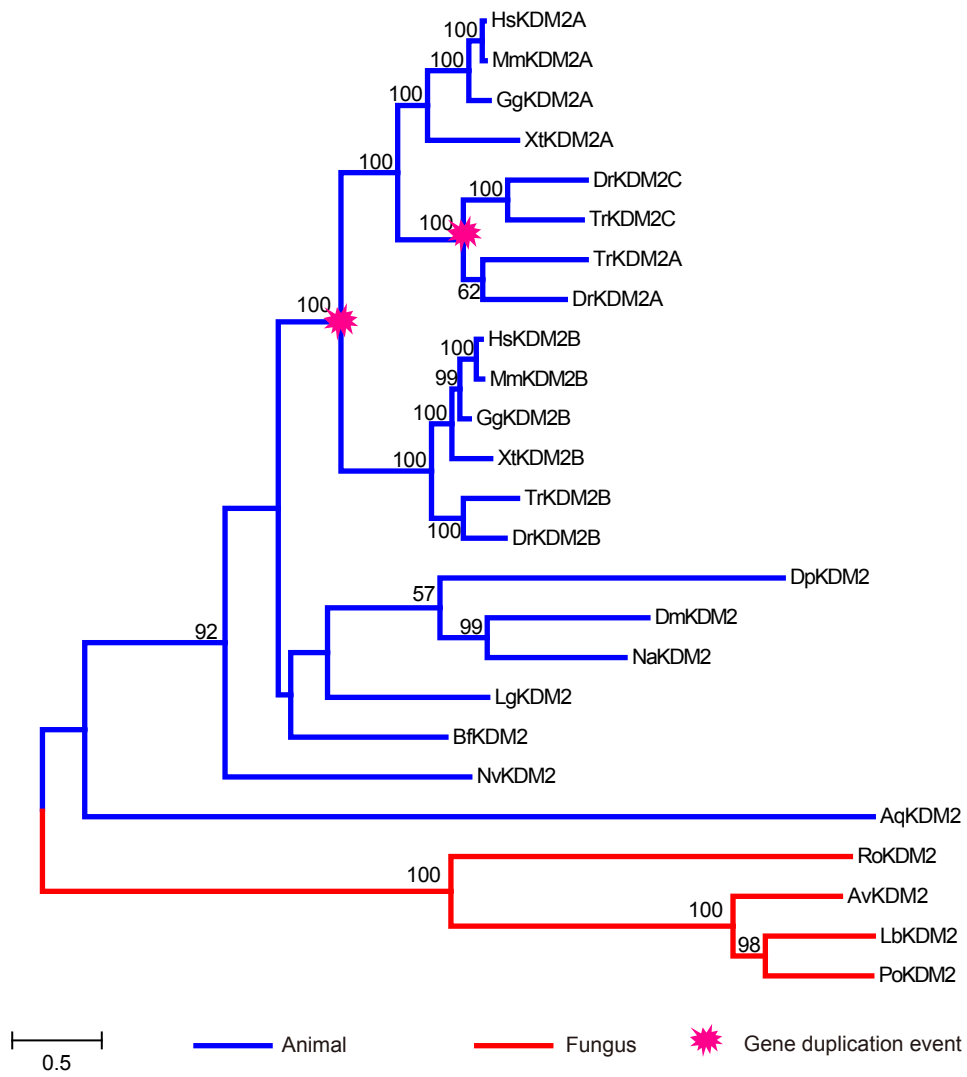
Supplemental Figure S1. Logos representing conserved motifs within different subfamilies.



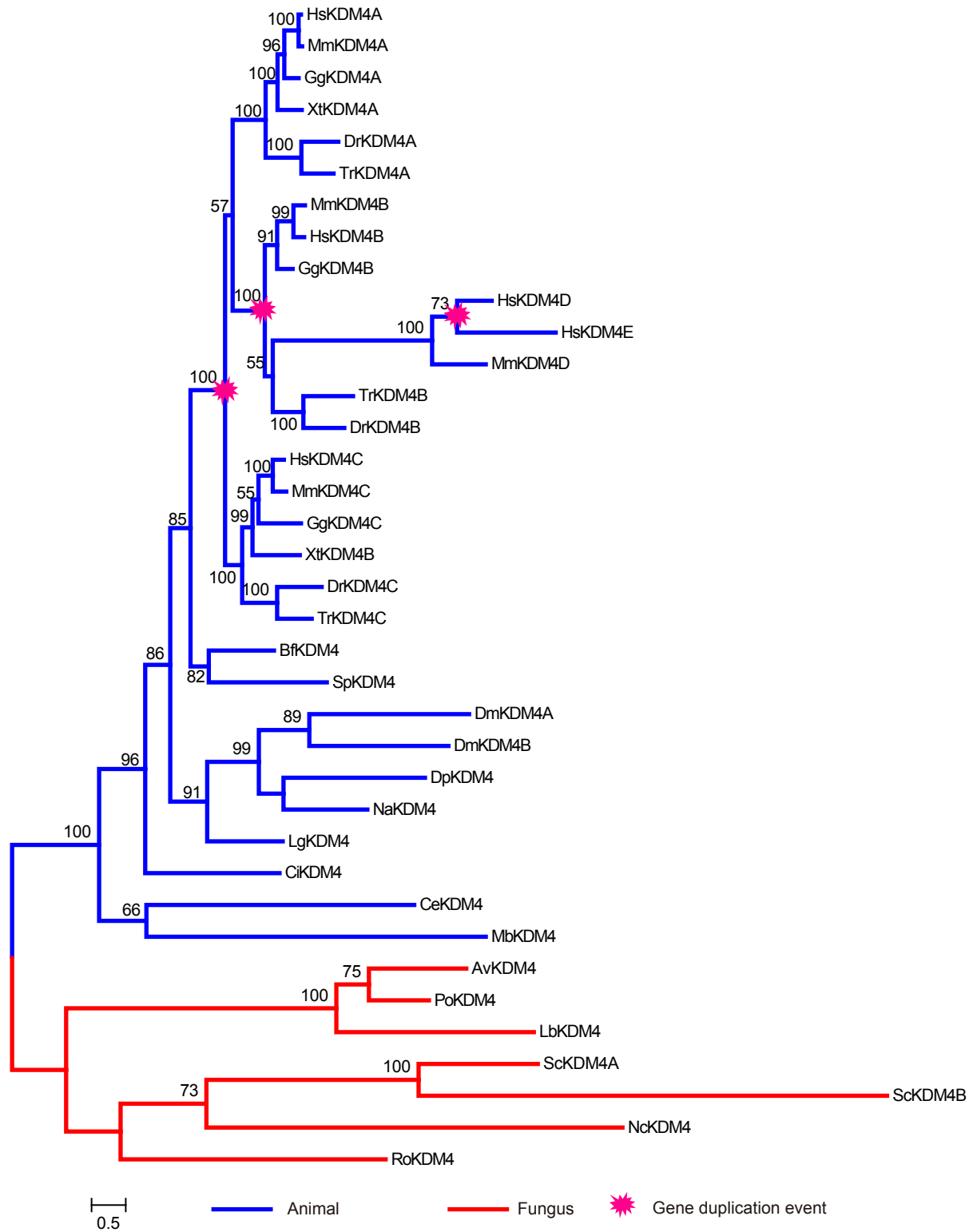
Supplemental Figures S2. The ML trees generated by RAxML of each of *JARID2*. ML bootstrap values above 50% are shown.



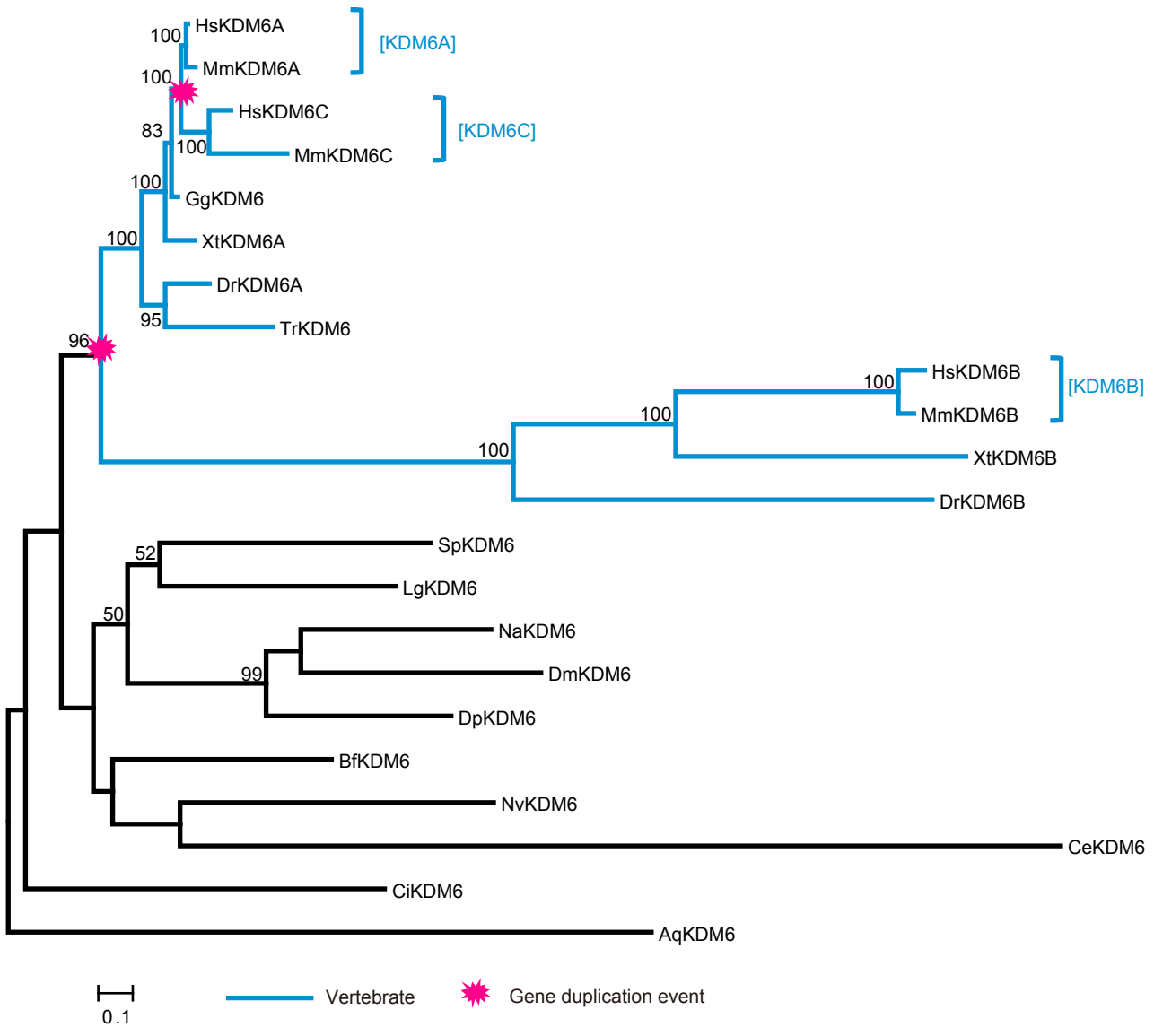
Supplemental Figures S3. The ML trees generated by RAxML of each of *JMJD6*. ML bootstrap values above 50% are shown.



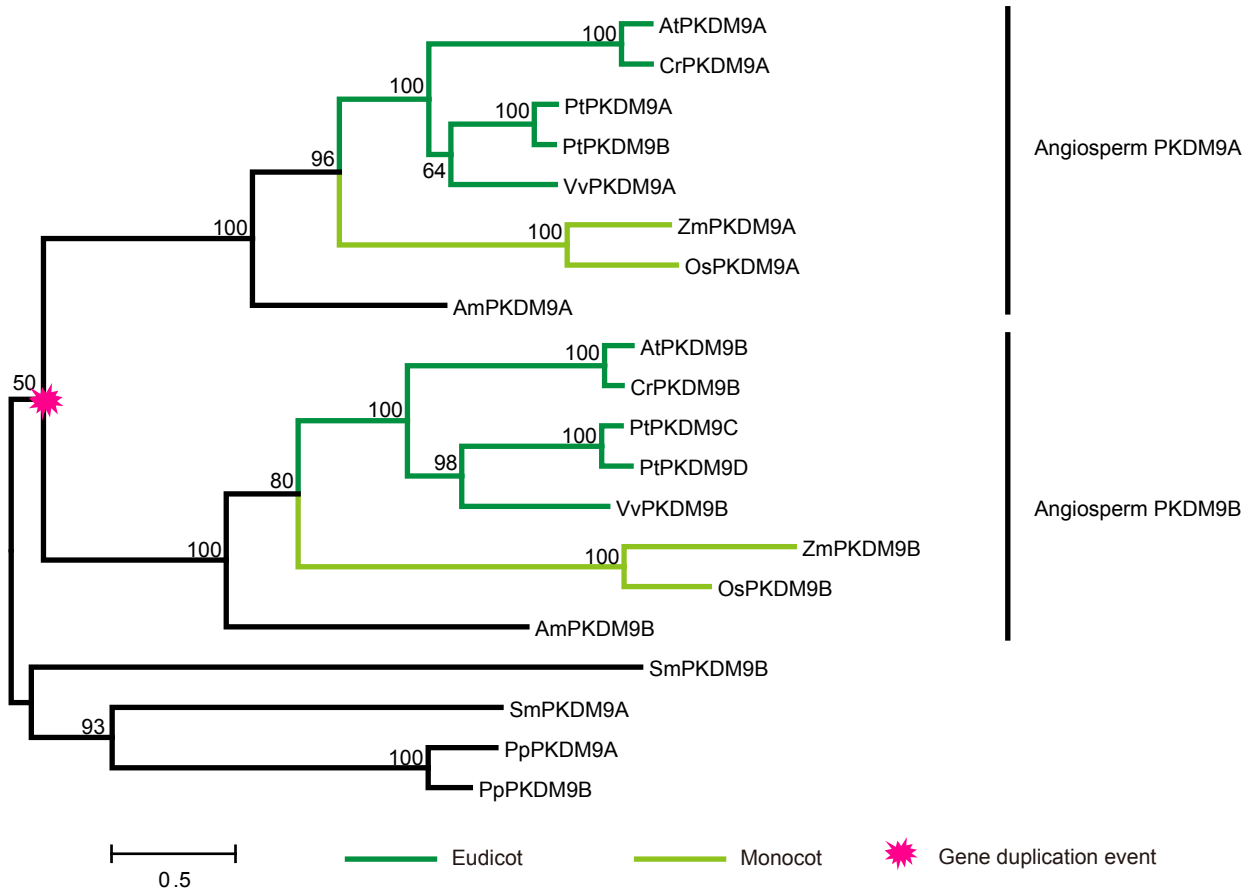
Supplemental Figures S4. The ML trees generated by RAxML of each of *KDM2*. ML bootstrap values above 50% are shown.



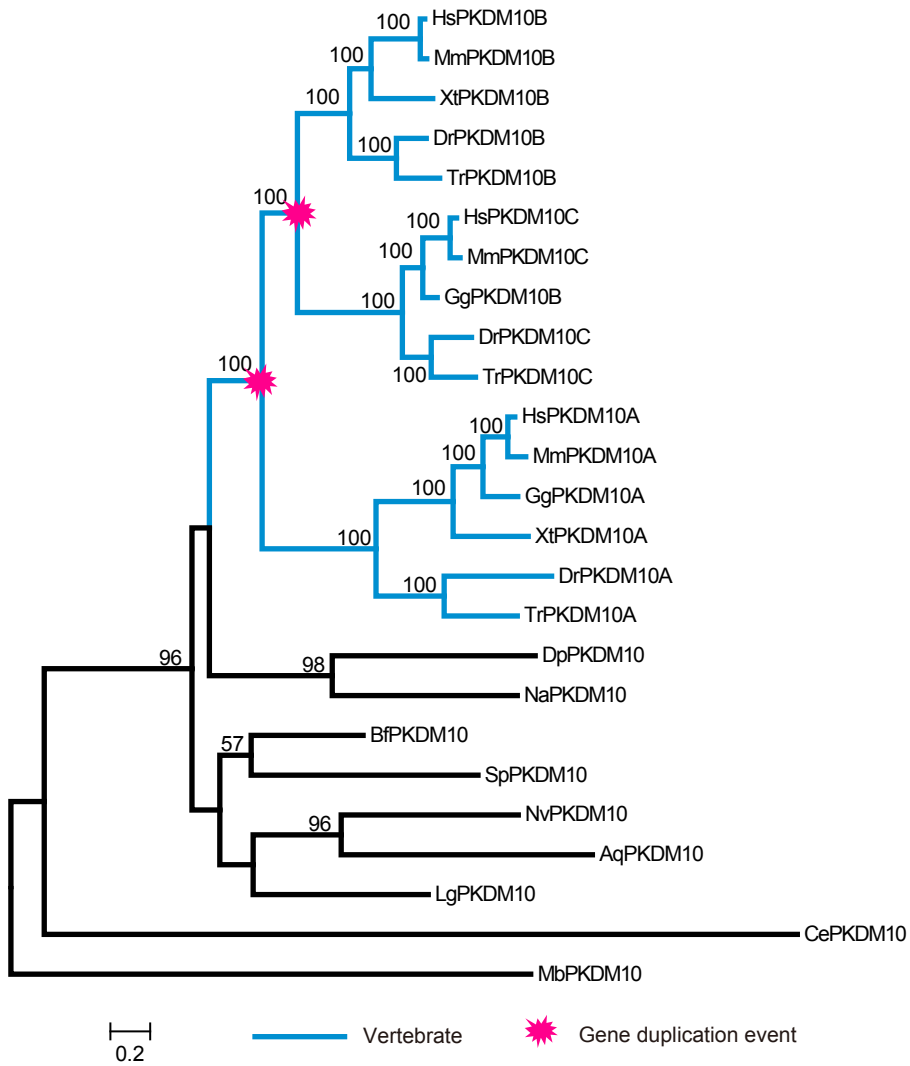
Supplemental Figures S6. The ML trees generated by RAxML of each of *KDM4*. ML bootstrap values above 50% are shown.



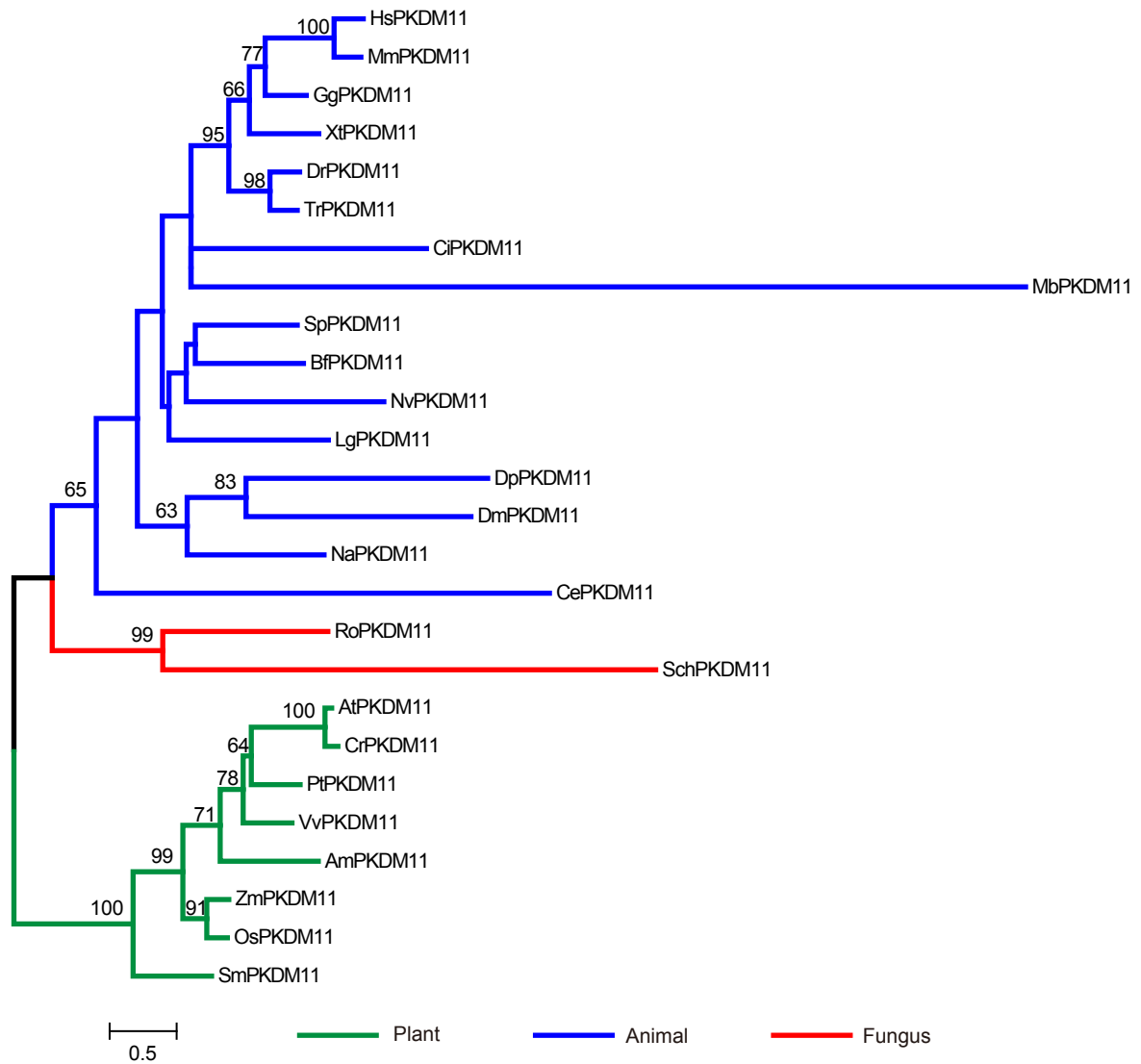
Supplemental Figures S7. The ML trees generated by RAxML of each of *KDM6*. ML bootstrap values above 50% are shown.



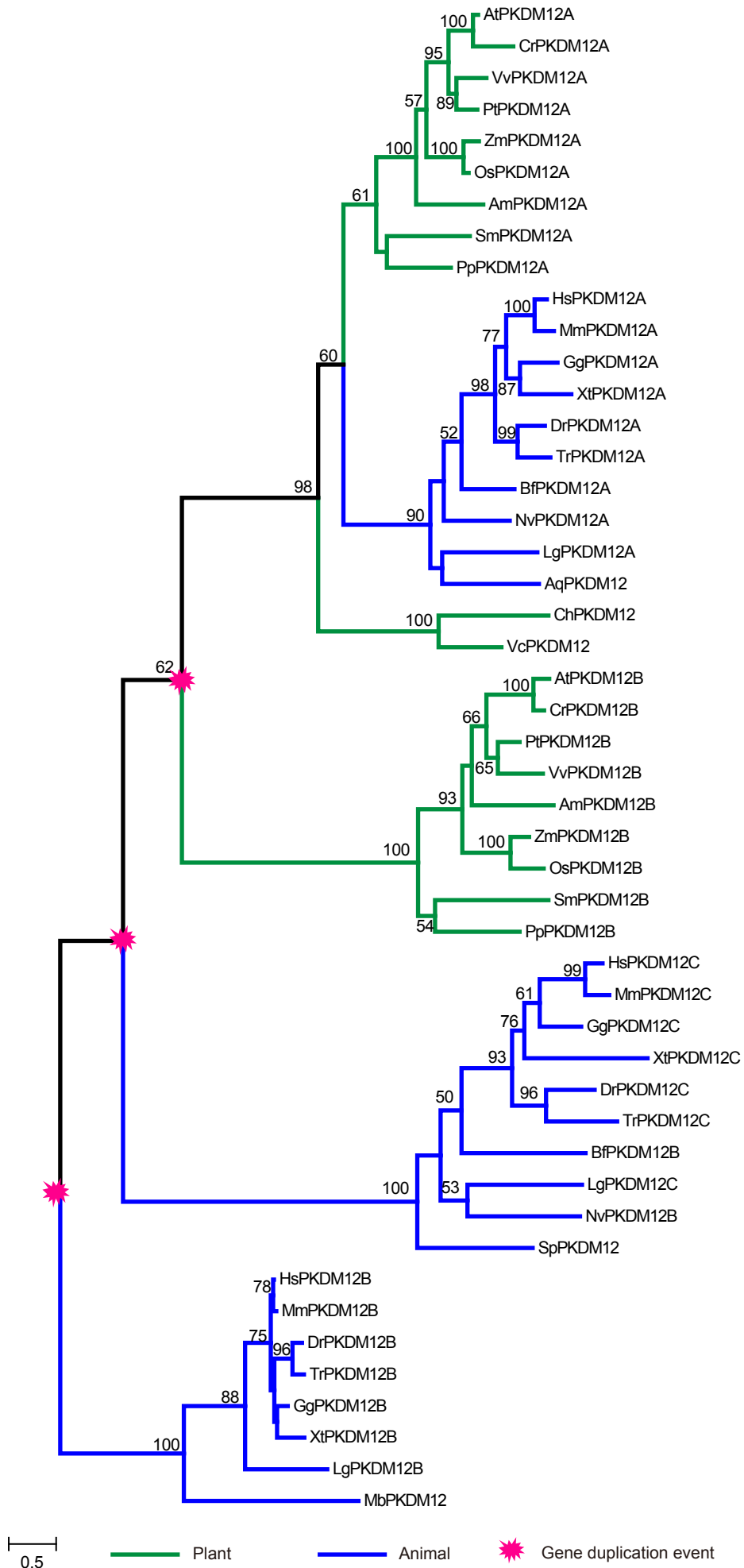
Supplemental Figures S8. The ML trees generated by RAxML of each of *PKDM9*. ML bootstrap values above 50% are shown.



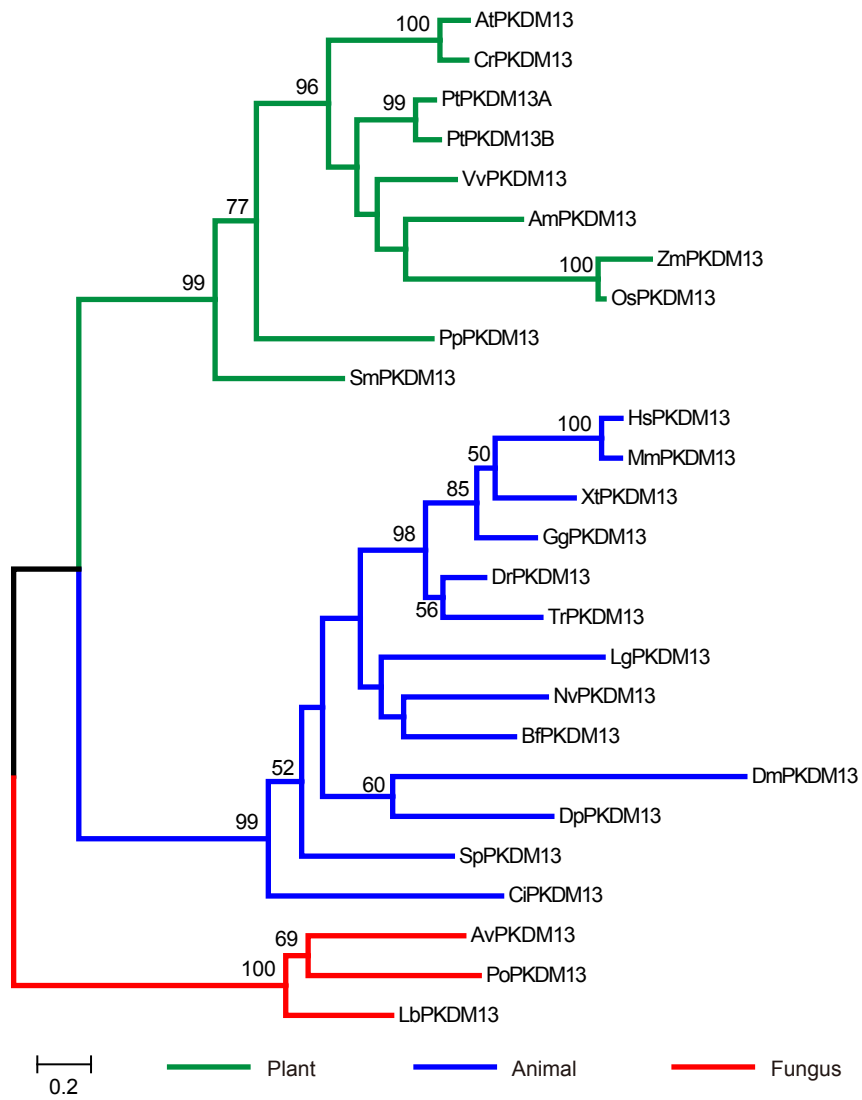
Supplemental Figures S9. The ML trees generated by RAxML of each of *PKDM10*. ML bootstrap values above 50% are shown.



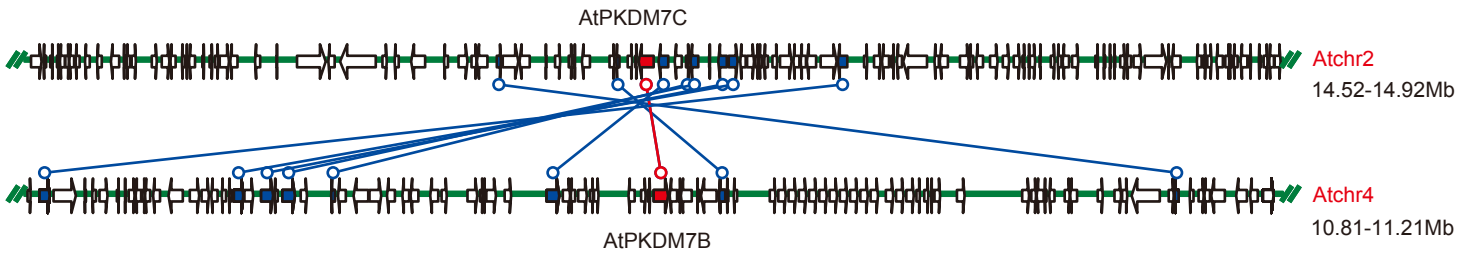
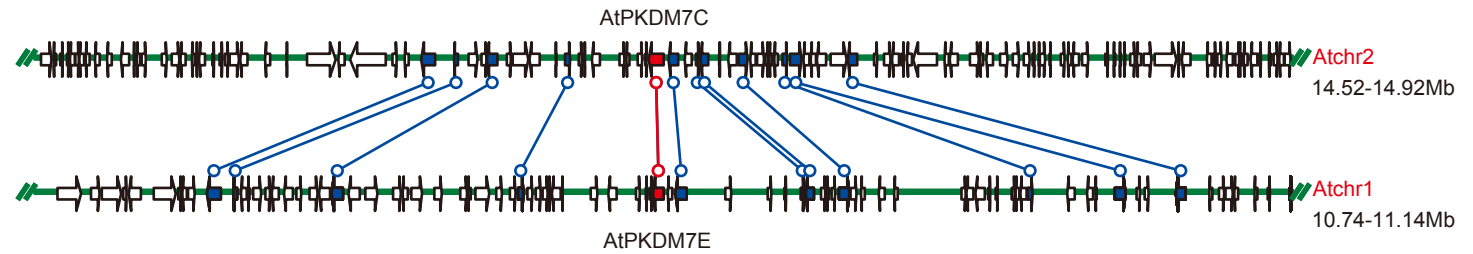
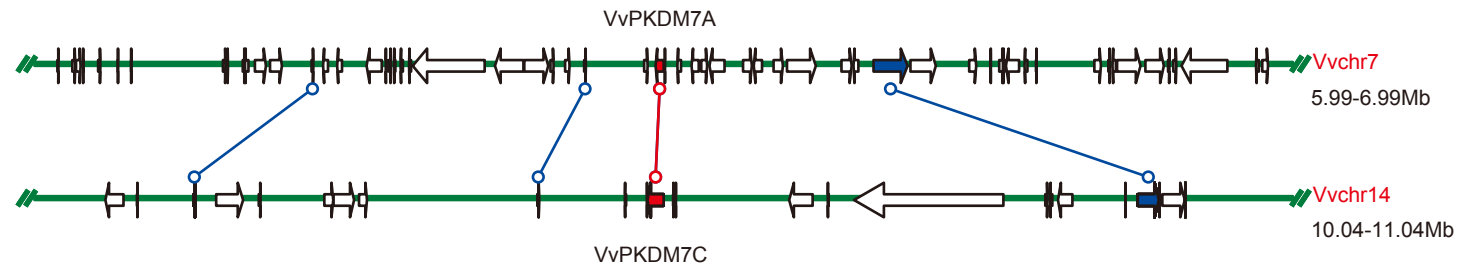
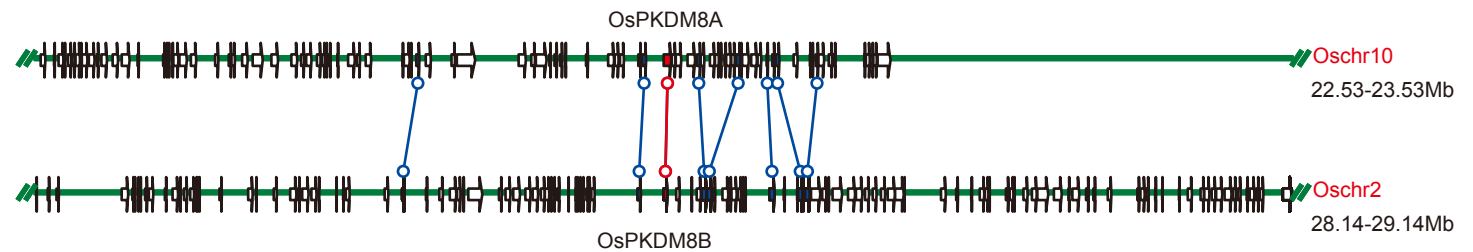
Supplemental Figures S10. The ML trees generated by RAxML of each of *PKDM11*. ML bootstrap values above 50% are shown.



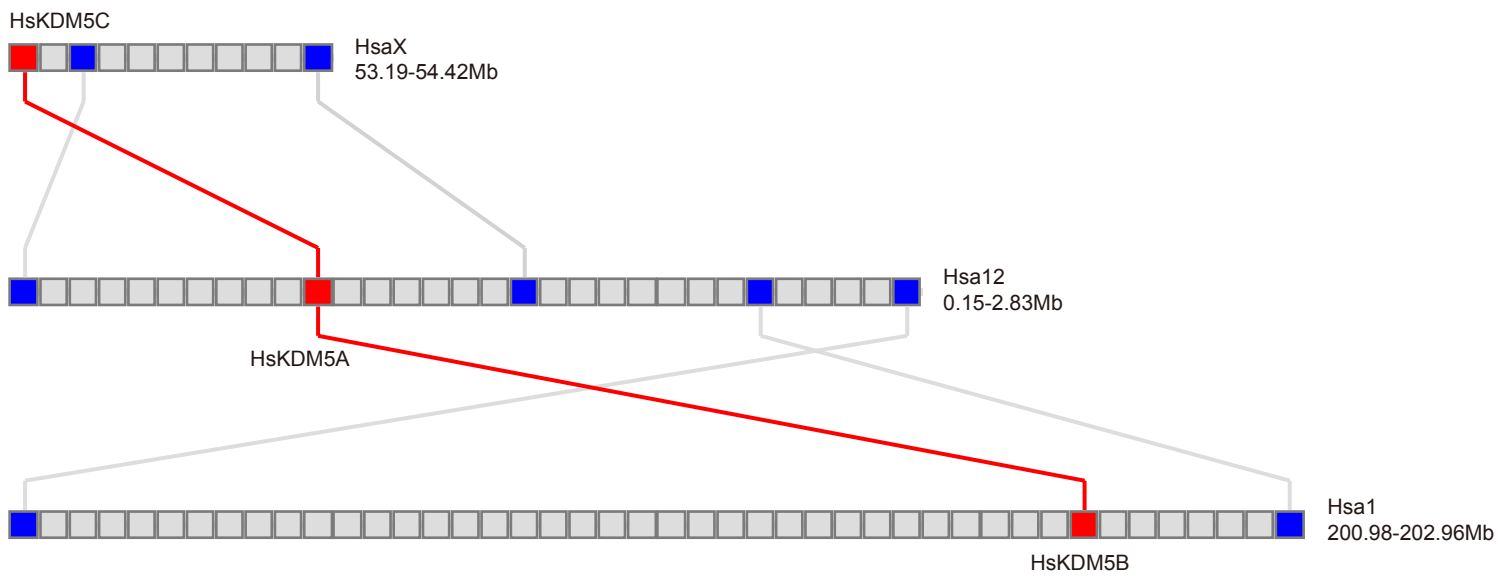
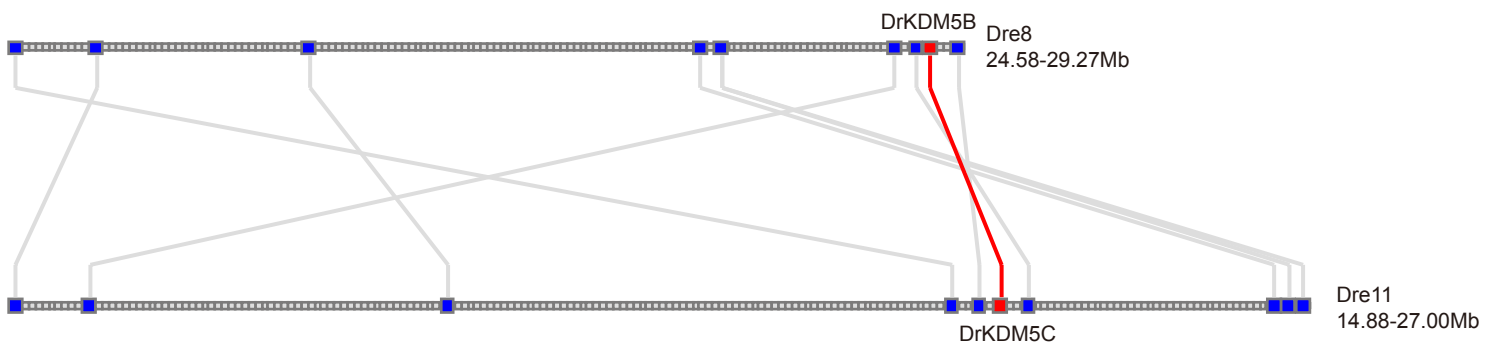
Supplemental Figures S11. The ML trees generated by RAXML of each of *PKDM12*. ML bootstrap values above 50% are shown.



Supplemental Figures S12. The ML trees generated by RAxML of each of *PKDM13*. ML bootstrap values above 50% are shown.

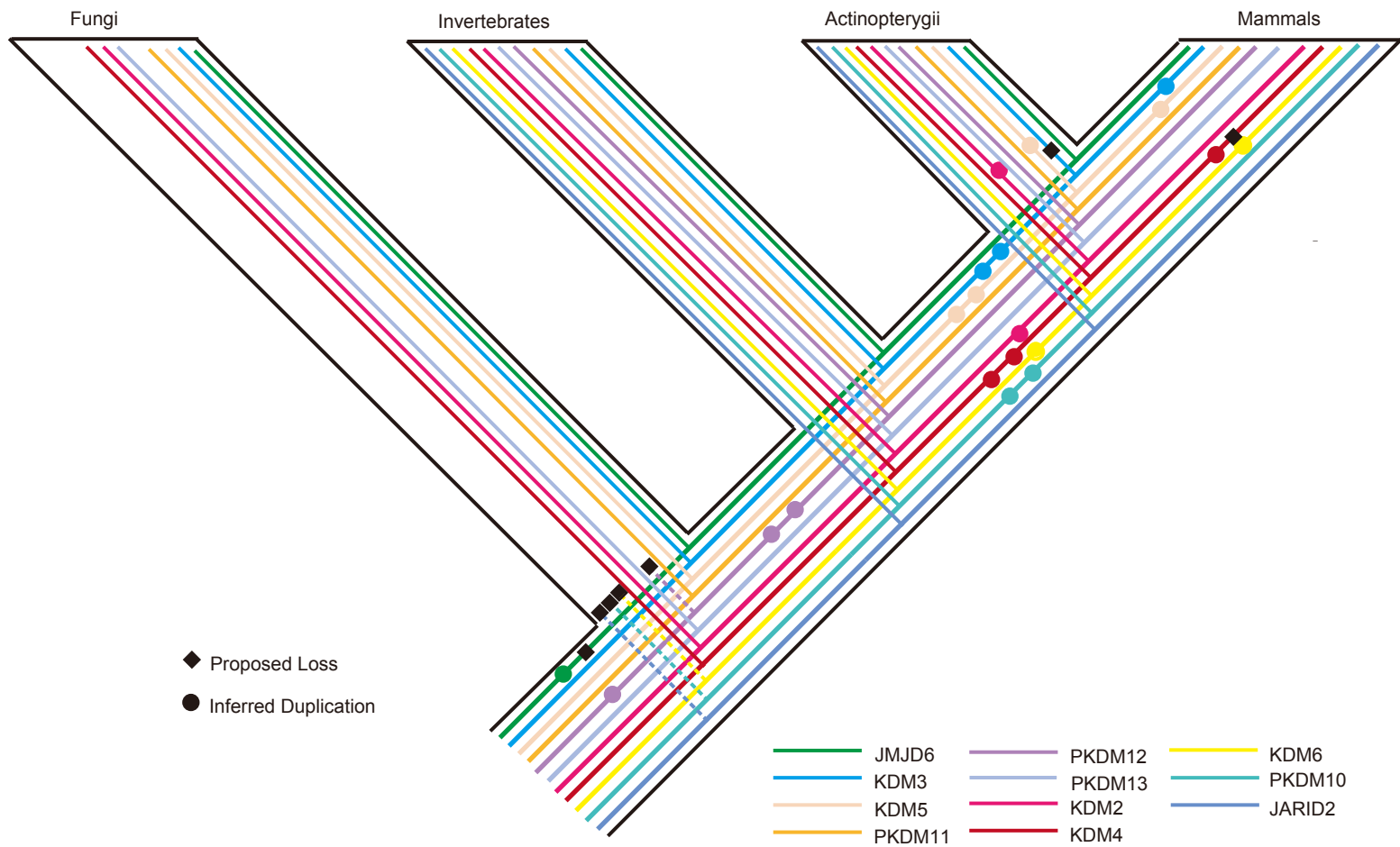
A**B****C****D**

Supplemental Figure S13. Representative plants with the syntenic regions containing representative duplicated gene pairs from recent polyploidy events. Species designations: At, *Arabidopsis thaliana*; Vv, *V. vinifera*; Os, *O. sativa*; chr is short for chromosome. Arrows illustrate the presence and orientation of syntenic paralogous genes, which are connected by lines. Syntenic regions include (A) *AtPKDM7C* and *AtPKDM7B*, (B) *AtPKDM7C* and *AtPKDM7E*, (C) *VvPKDM7A* and *VvPKDM7C*, (D) *OsPKDM8A* and *OsPKDM8B*.

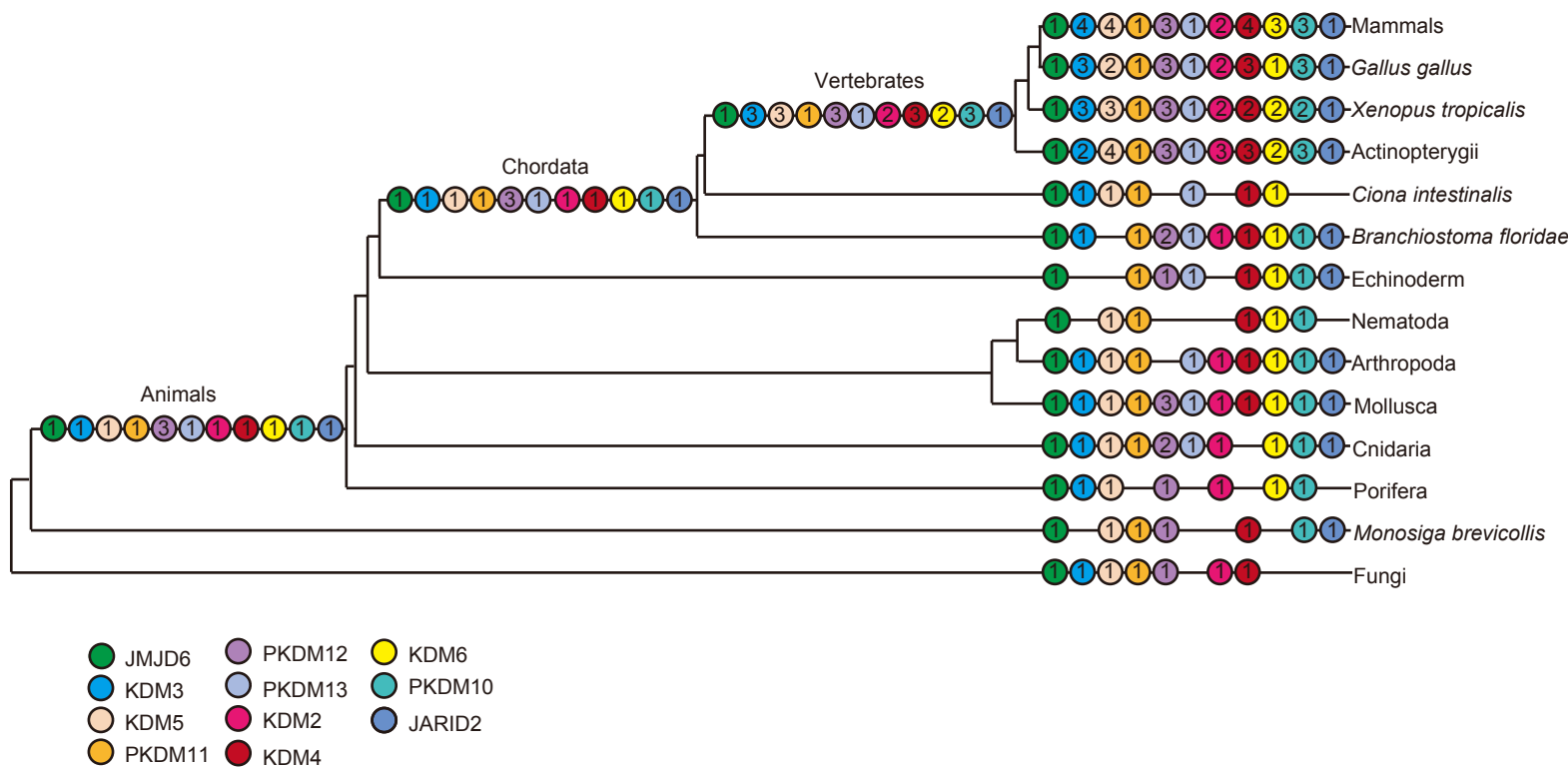
A**B**

Supplemental Figure S14. Representative animals with duplicated gene pairs generated by recent polyploidy events. Species designations: Hs, *Homo sapiens*; Dr, *Danio rerio*; chr is short for chromosome. Syntenic paralogous genes are connected by lines. Syntenic regions include (A) *HsKDM5A*, *HsKDM5B* and *HsKDM5C*, (B) *DrKDM5B* and *DrKDM5C*.

A

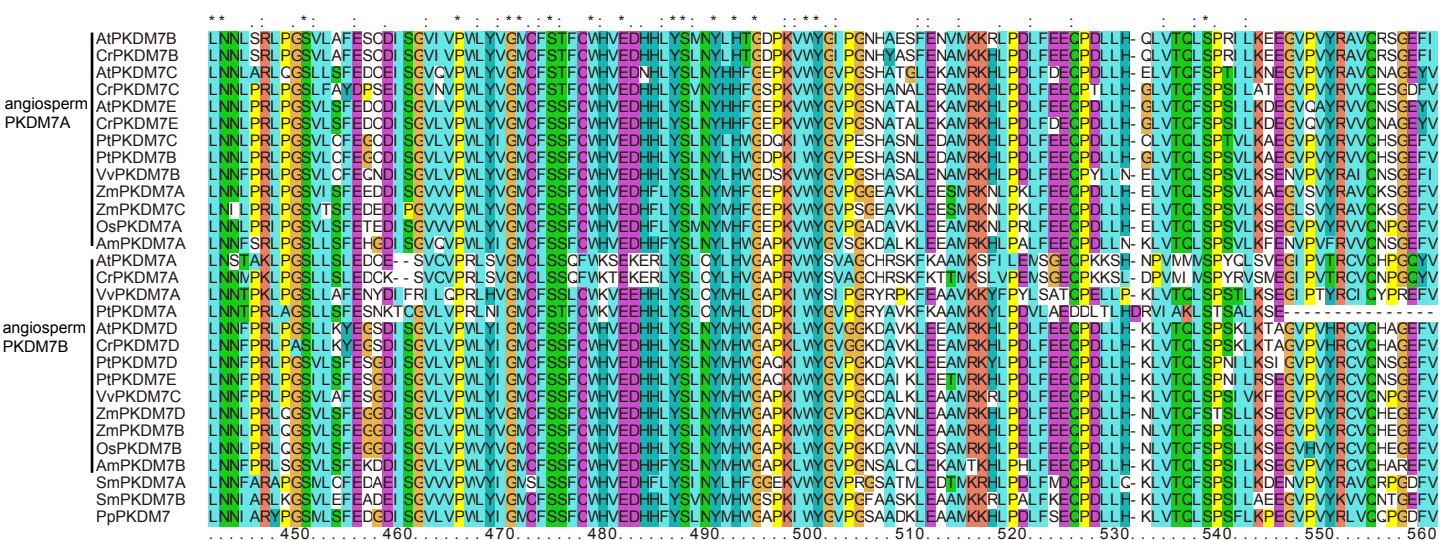
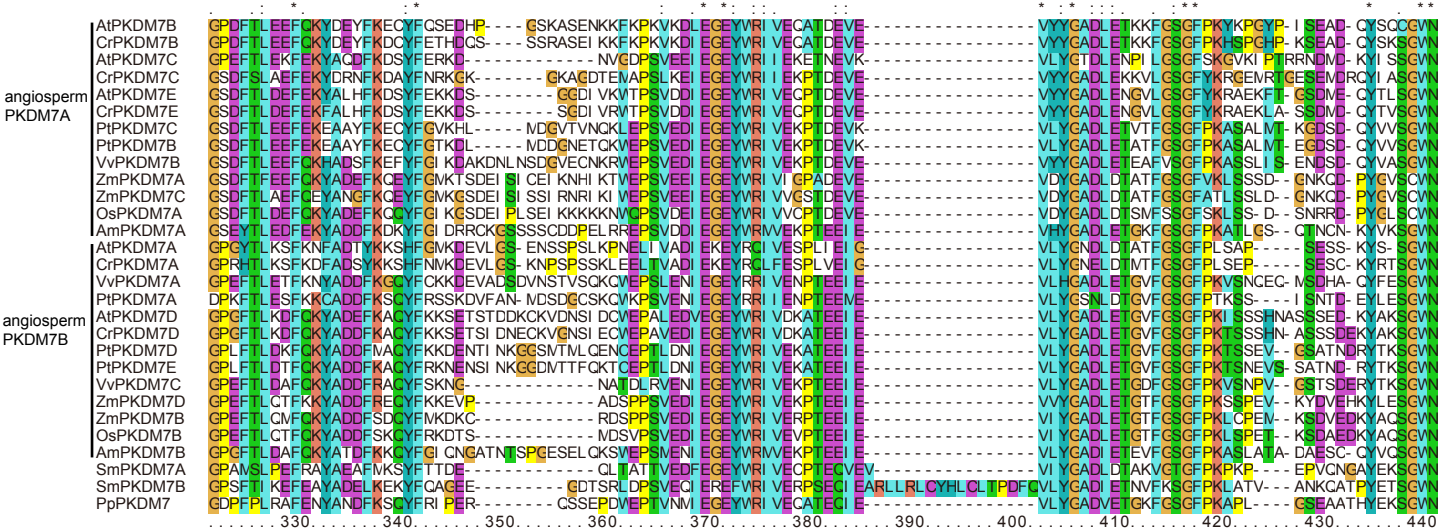
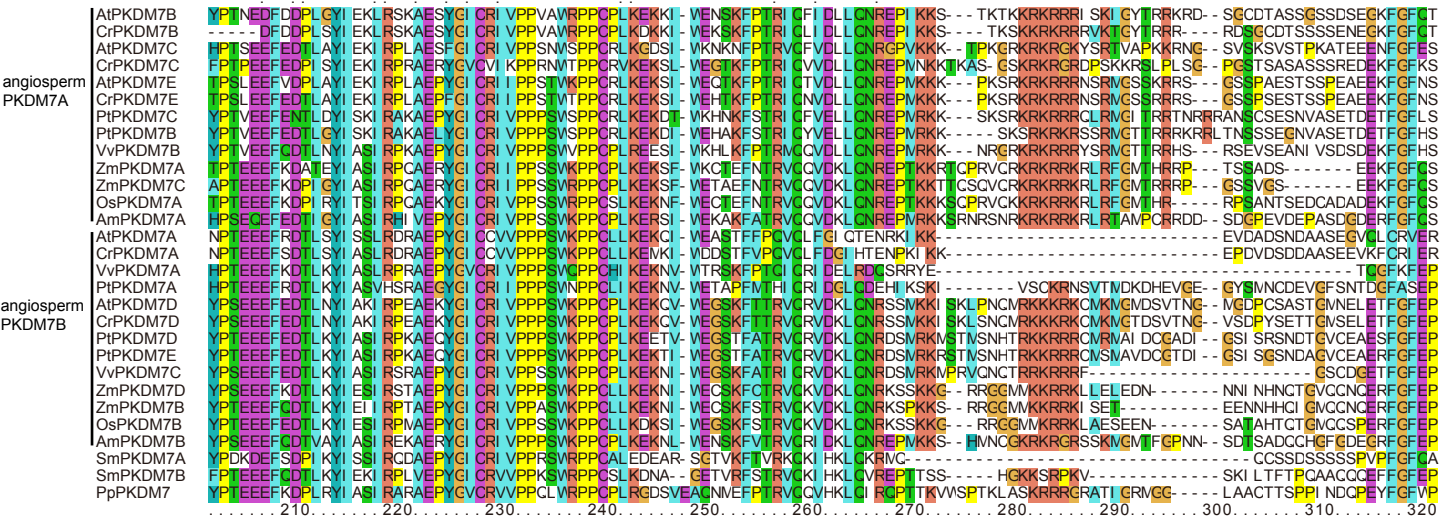


B

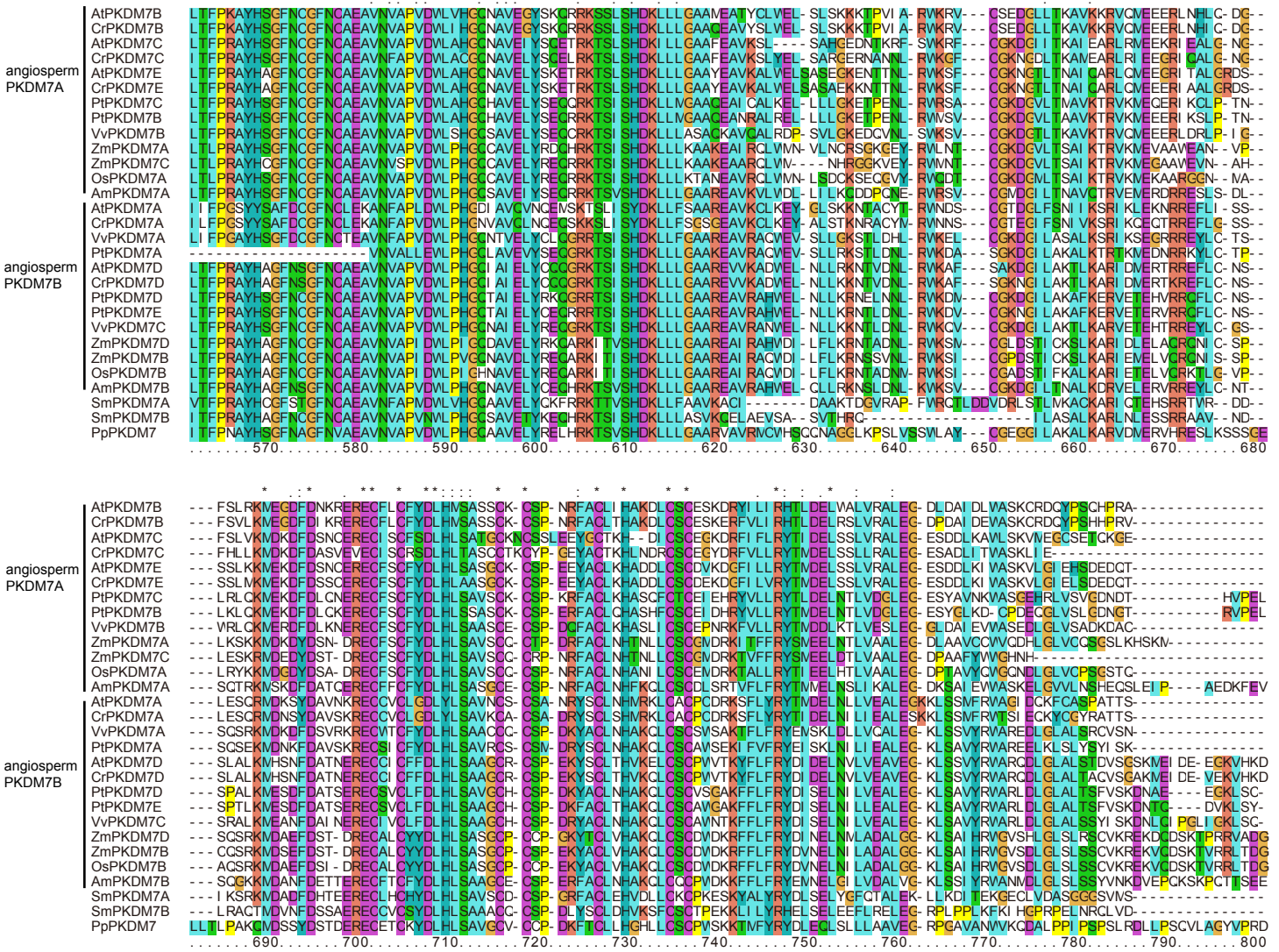


Supplemental Figure S15. Duplication events in the JmjC protein family inferred from amino acid level analyses. (A) Schematic depicting the inferred history of gene duplication and loss within the animals and fungi. (B) Schematic depicting the complement of JmjC genes in major animal groups. The numbers in circle represents the number of genes in each JmjC subfamily.

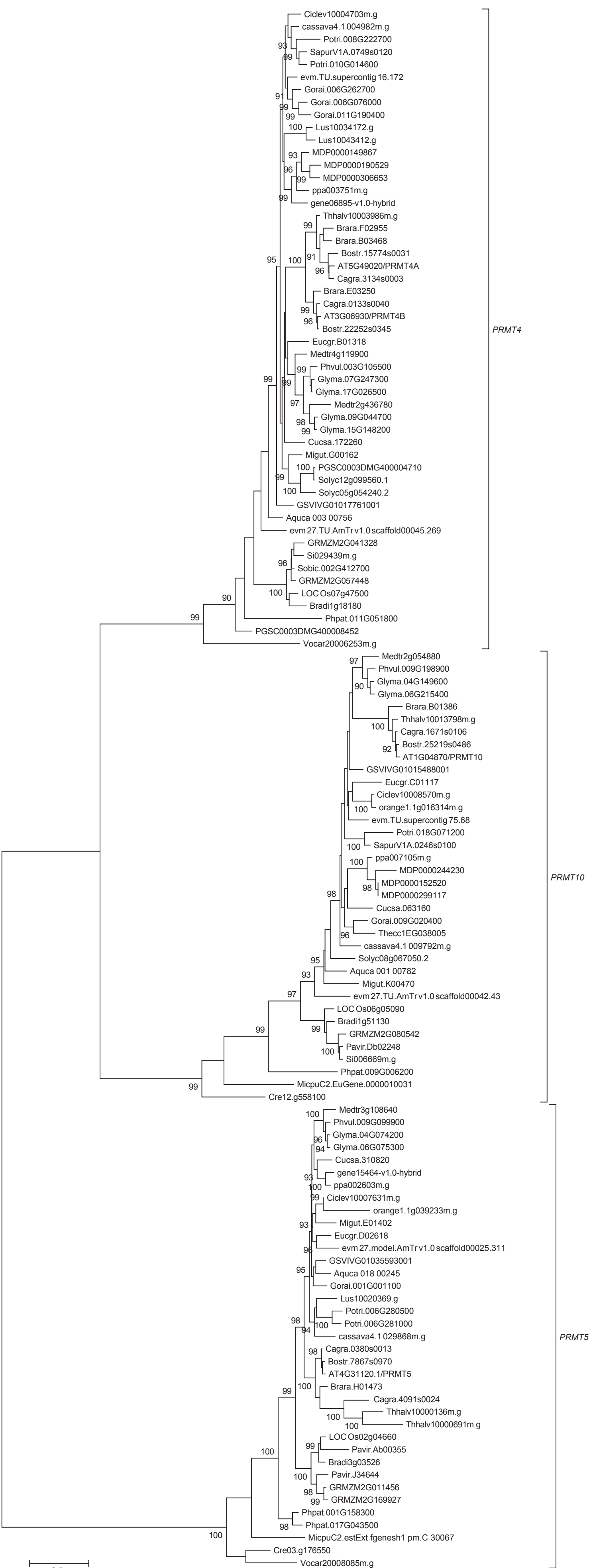
A



B



Supplemental Figure S16. Multiple sequence alignments of Angiosperm *PKDM7A* and *PKDM7B*.



Supplemental Figure S18. A ML tree of *PRMT4*, *PRMT5* and *PRMT10* in green plants.