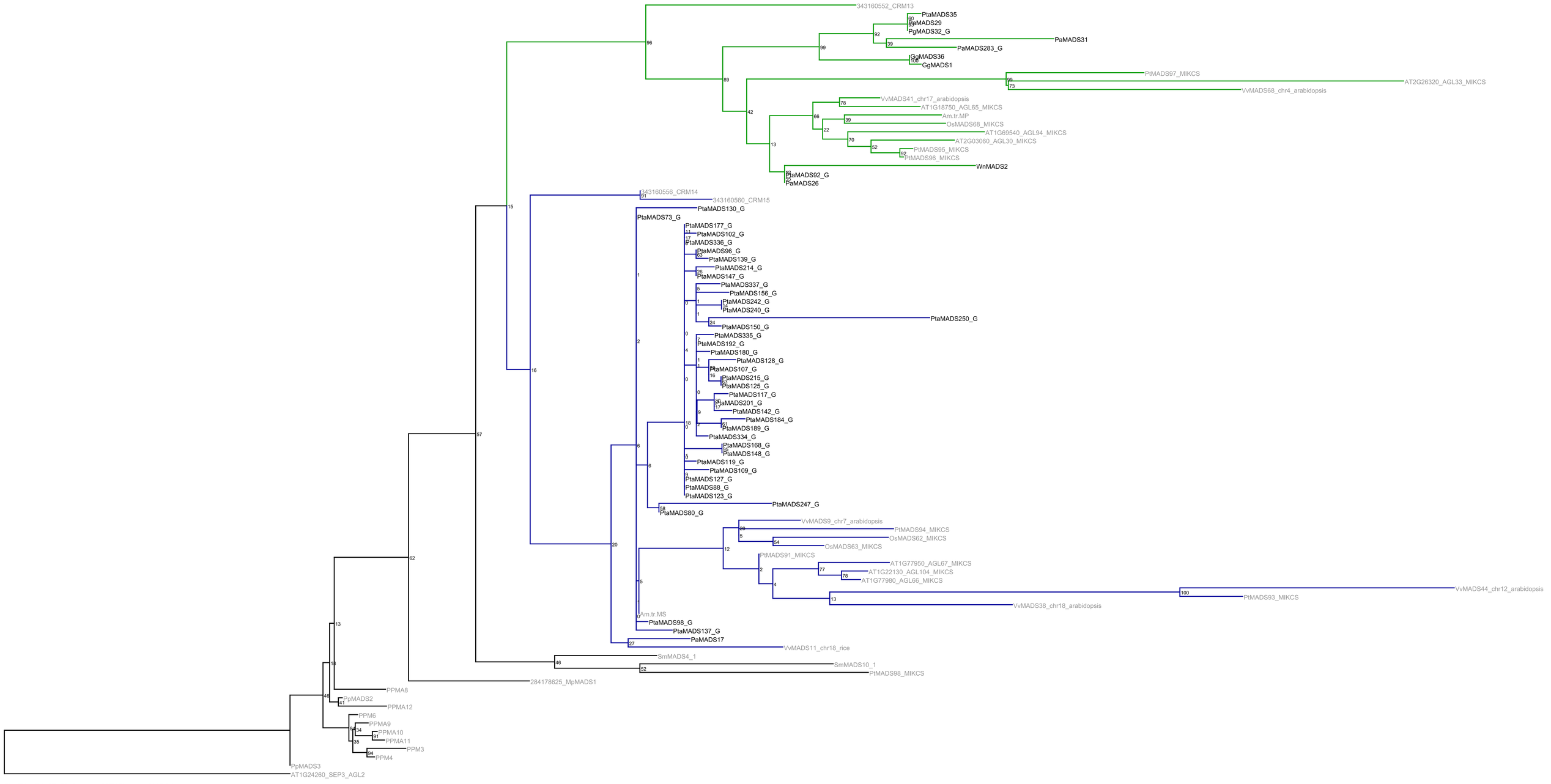


**Fig. S4a: RAxML-Phylogeny of MIKC*-group MADS-box genes.**
The S clade is colored blue and the P clade is colored green. Gene names of genes from gymnosperms are as shown in Table 1 and Supplementary Data Table S1. Gymnosperm genes for which the name ends with "_G" are solely derived from genomic data and no expression evidence was found. Gene names starting with AT, Arabidopsis thaliana: Am.tr., Amborella trichopoda; Os, Oryza sativa; PtMADS, Populus trichocarpa; Sm, Selaginella moellendorffii; Vv, Vitis vinifera. Gene names containing CgMADS1, Chara globularis; CRM or CerMADS, Ceratopteris richardii; LAMB, Lycopodium annotinum; MpMADS1, Marchantia polymorpha; PPTIM or PpMADS or PPM, Physcomitrella patens; SrMADS1, Selaginella remotifolia. For genes from ferns the corresponding species are given after the gene name. The numbers at the nodes represent bootstrap values.

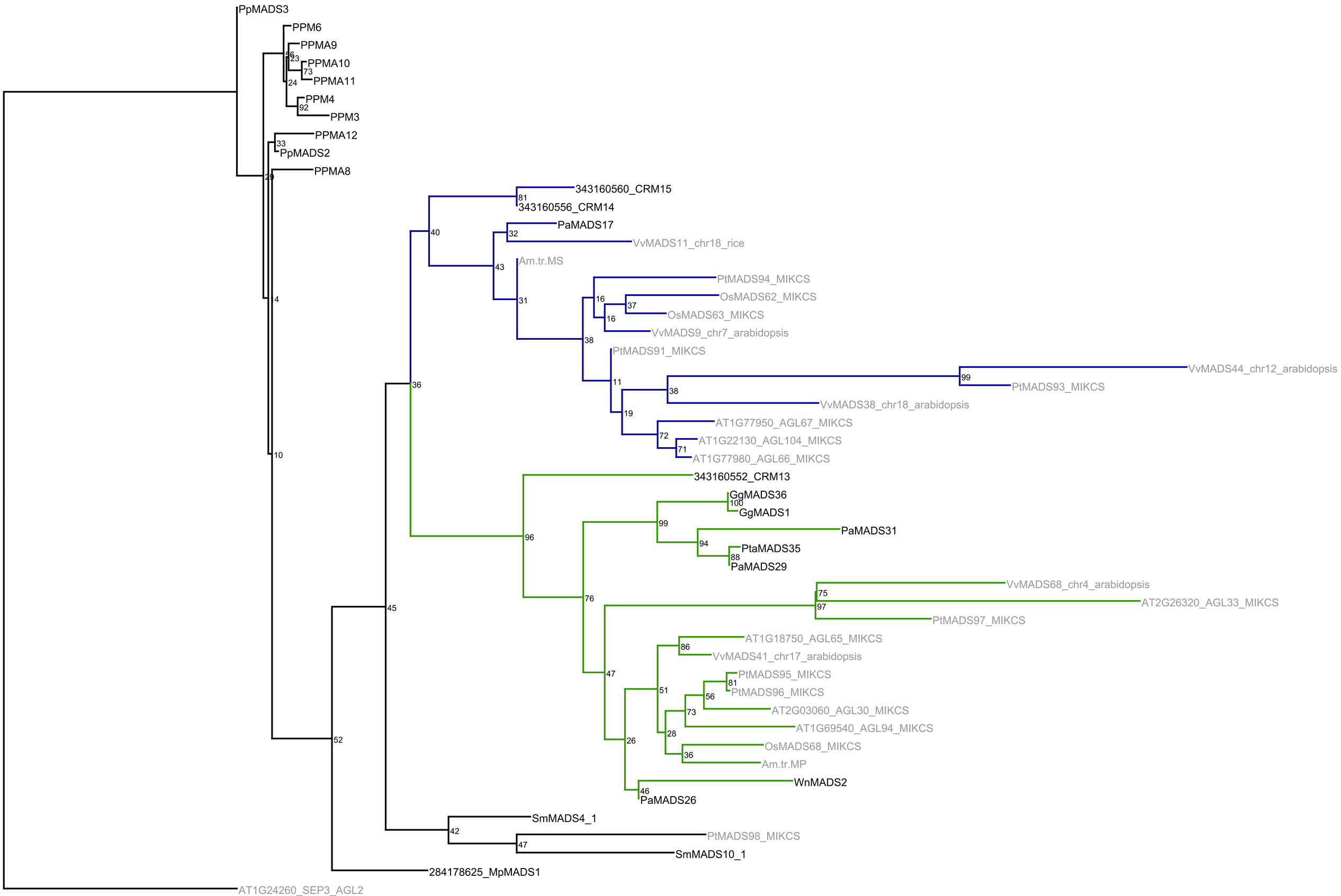


**Fig. S4b: RAxML-Phylogeny of MIKC*-group MADS-box genes only including gymnosperm genes for which expression evidence was found.**

The S clade is colored blue and the P clade is colored green. Gene names of genes from gymnosperms are as shown in Table 1 and Supplementary Data Table S1. Gene names starting with AT, Arabidopsis thaliana; Am.tr., Amborella trichopoda; Os, Oryza sativa; PtMADS, Populus trichocarpa; Sm, Selaginella moellendorffii; Vv, Vitis vinifera. Gene names containing CgMADS1, Chara globularis; CRM or CerMADS, Ceratopteris richardii; LAMB, Lycopodium annotinum; MpMADS1, Marchantia polymorpha; PPTIM or PpMADS or PPM, Physcomitrella patens; SrMADS1, Selaginella remotifolia. For genes from ferns the corresponding species are given after the gene name. The numbers at the nodes represent bootstrap values.

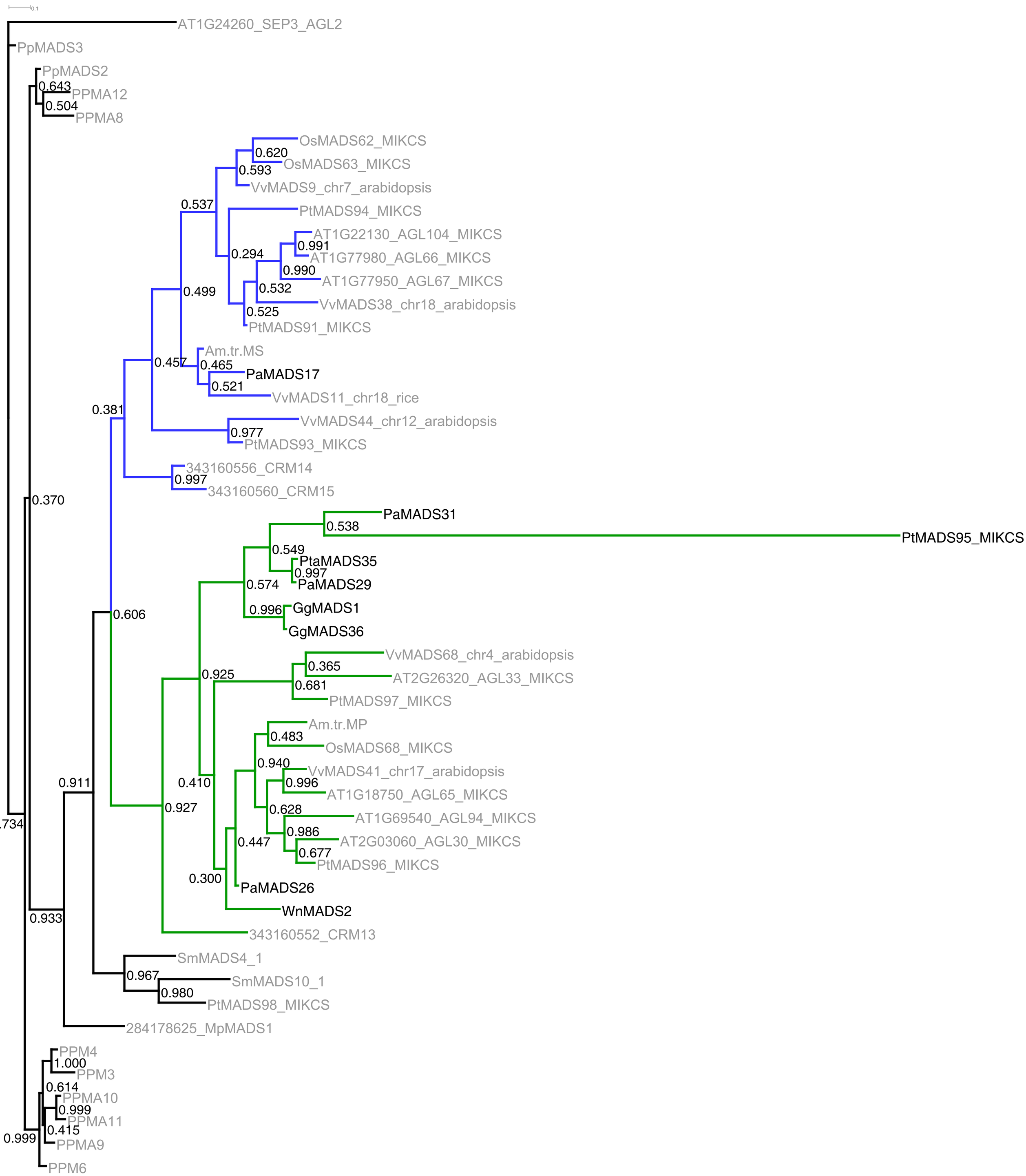


**Fig. S4c: MrBayes-Phylogeny of MIKC*-group MADS-box genes only including gymnosperm genes for which expression evidence was found.**

The S clade is colored blue and the P clade is colored green. Gene names of genes from gymnosperms are as shown in Table 1 and Supplementary Data Table S1. Gene names starting with AT, Arabidopsis thaliana; Am.tr., Amborella trichopoda; Os, Oryza sativa; PtMADS, Populus trichocarpa; Sm, Selaginella moellendorffii; Vv, Vitis vinifera. Gene names containing CgMADS1, Chara globularis; CRM or CerMADS, Ceratopteris richardii; LAMB, Lycopodium annotinum; MpMADS1, Marchantia polymorpha; PPTIM or PpMADS or PPM, Physcomitrella patens; SrMADS1, Selaginella remotifolia. For genes from ferns the corresponding species are given after the gene name. The numbers at the nodes represent bootstrap values.