

# Re-exploration of U's Triangle *Brassica* Species Based on Chloroplast Genomes and 45S nrDNA Sequences

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## The following Supporting Information is available for this article:

**Figure S1.** Species-specific InDel variations and validation for *Brassica* and relatives based on chloroplast genomes. (A) Karyogram showing specific intergenic InDel variations for the A+B, C, and R genomes. Intragenomic variations were observed for the R genome. (B) Gel validation of InDel variations in 28 genotypes with grouping based on polymorphisms. Red triangles mark intragenomic variations in the R genome. (C) Karyogram showing specific genic InDel variations for the A+C, B, and R genomes. (D) Gel validation of InDel variations in 28 genotypes with grouping based on polymorphisms.

**Figure S2.** Potential regions for differentiation of each diploid genome based on 45SnrRNA variations. Boxed letters indicate species-specific SNPs; black arrowheads represent InDels.

**Figure S3.** Phylogenetic relationships and molecular dating of the genus *Brassica* based on complete chloroplast genomes. (A) Neighbor-joining tree inferred from complete chloroplast genomes from 28 accessions. Tree was developed using MEGA7 with 1,000 bootstrap replications. (B) Chronogram of *Brassica* genus inferred from Bayesian analysis as implemented in the BEAST program based on complete chloroplast genomes. Divergence times of species on the right of the node are in million years (my). Double arrowhead indicates the estimated divergence of the three allotetraploid (AB, AC, and BC) genomes.

**Figure S4.** Phylogenetic relationships and molecular dating of the genus *Brassica* based on nrDNA sequences. (A) Neighbor-joining tree inferred from complete 45SnrDNA sequences from 28 genotypes. Tree was developed using MEGA7 with 1,000 bootstrap replications. The bootstrap values for clades are shown in corresponding branches of the tree. (B) Divergence times of species on the right of the node are in million years (my). Double arrowhead indicates the estimated divergence of the three allotetraploid (AB, AC, and BC) genomes.

**Figure S5.** Evolutionary time line of U's triangle *Brassica* species based on this study and previous reports

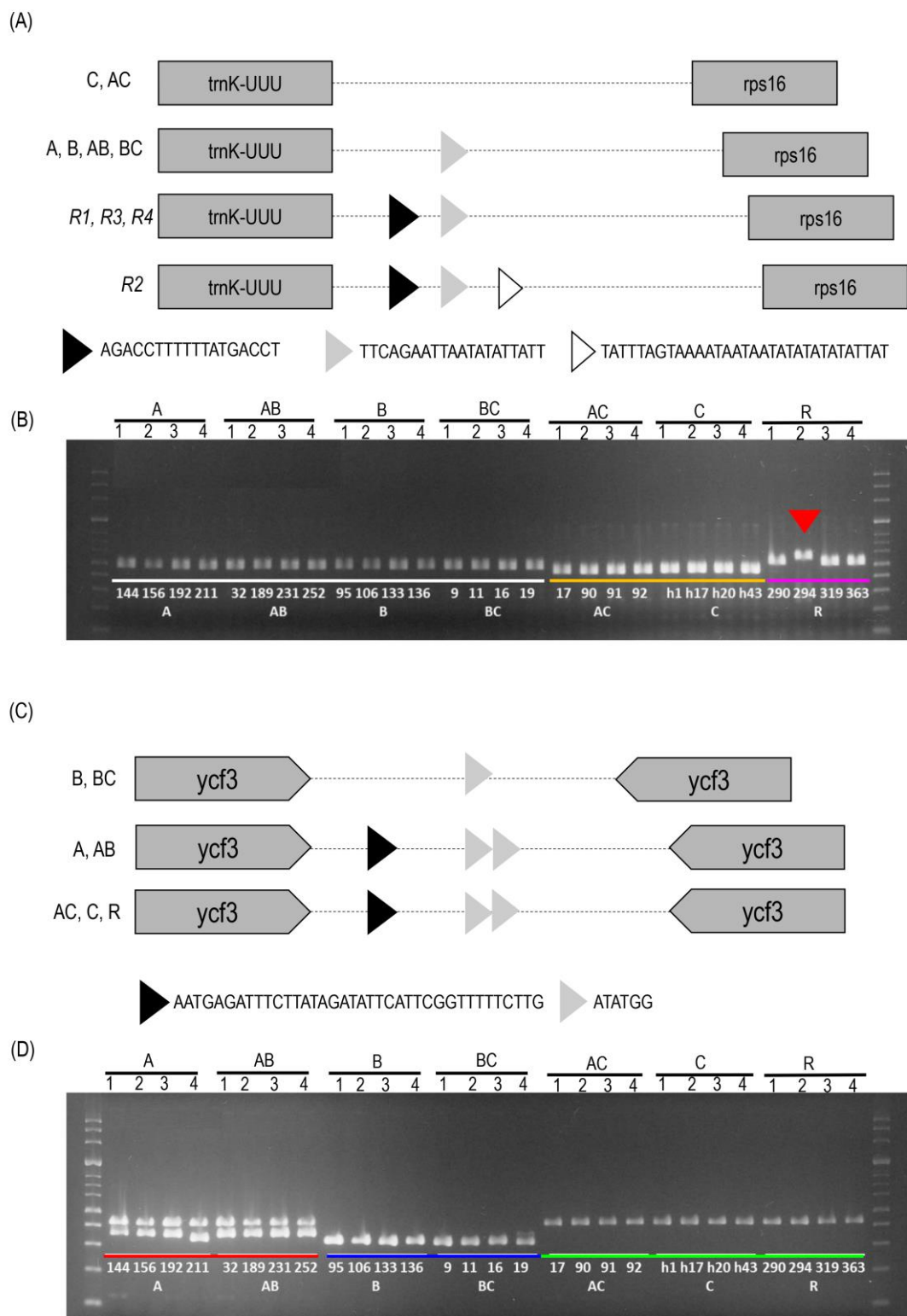


Figure S1.

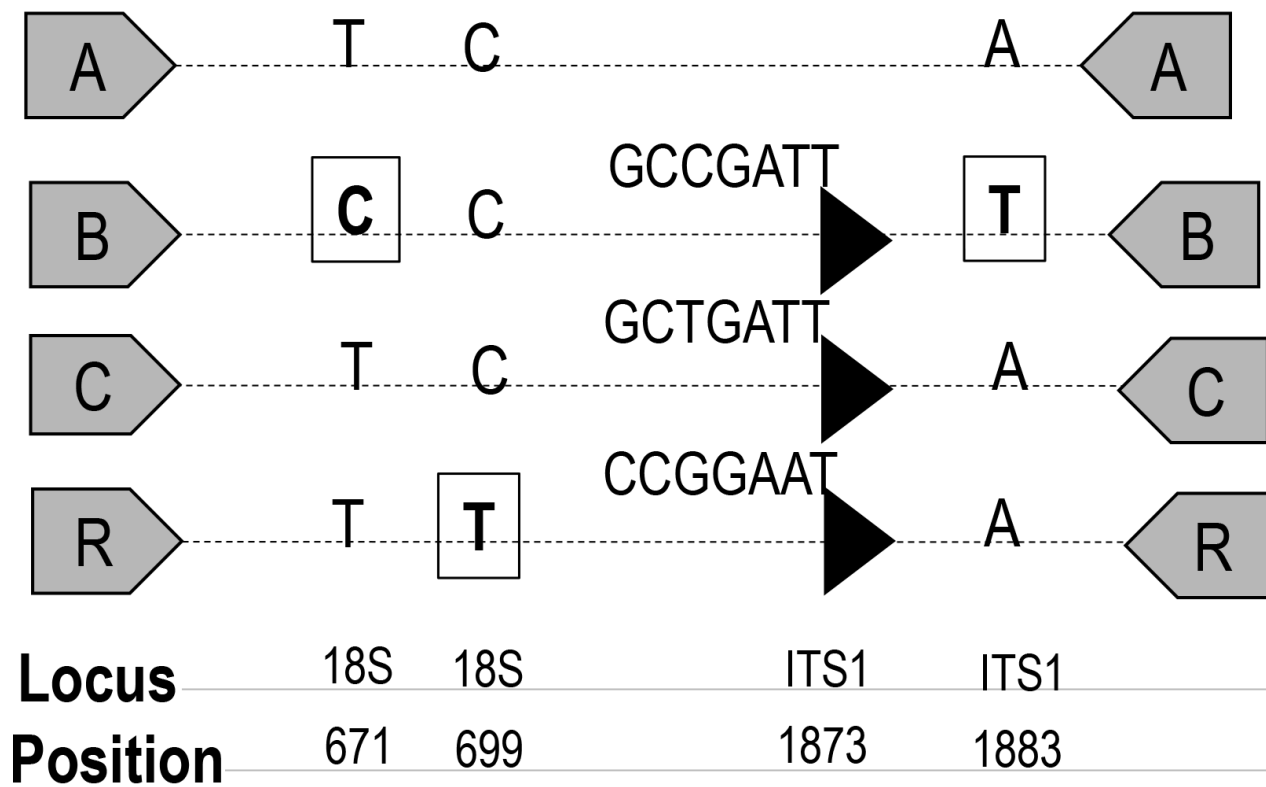


Figure S2

(A)

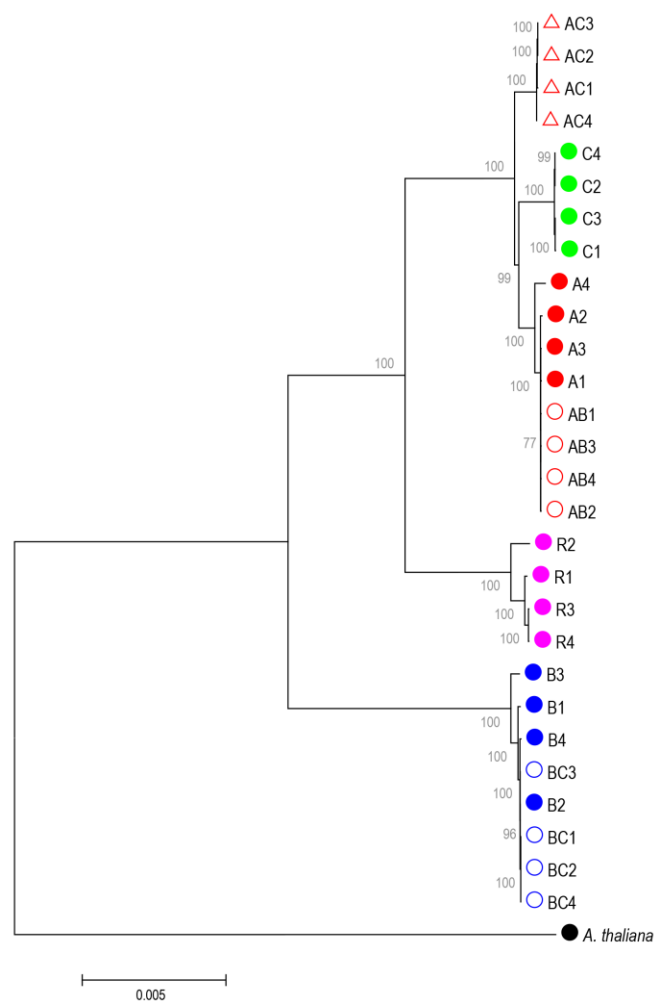
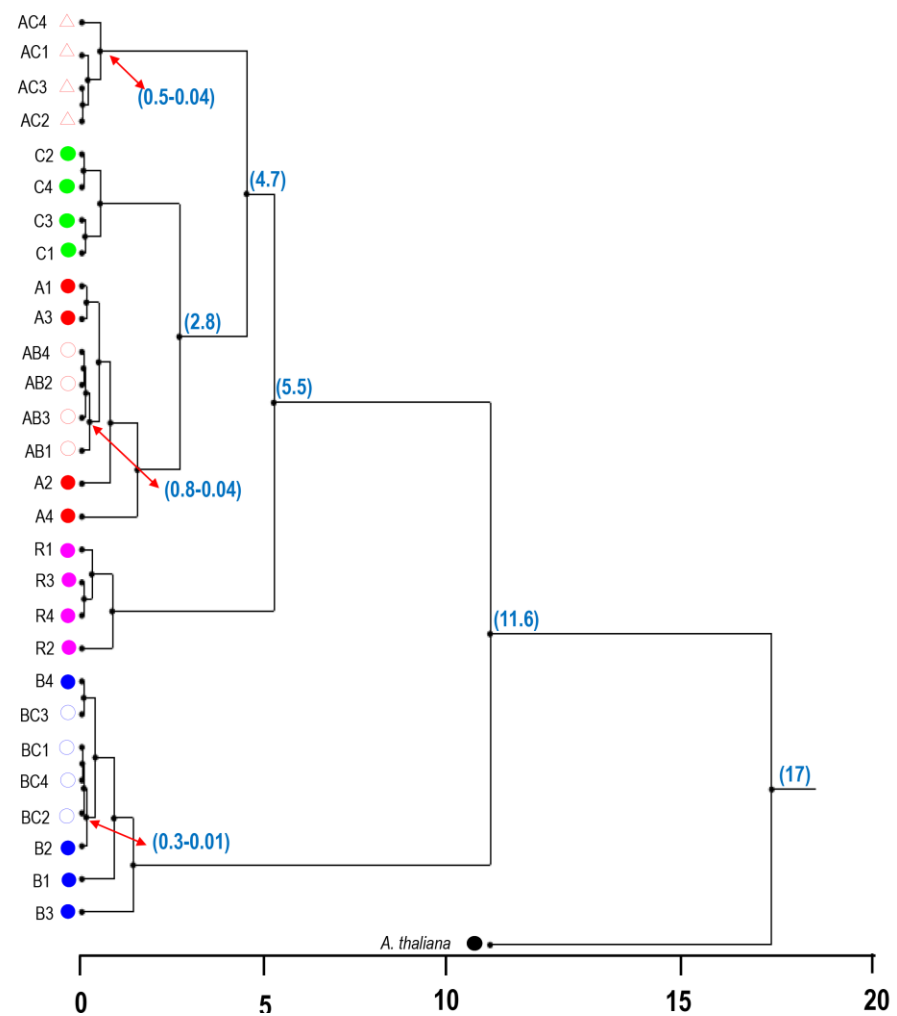
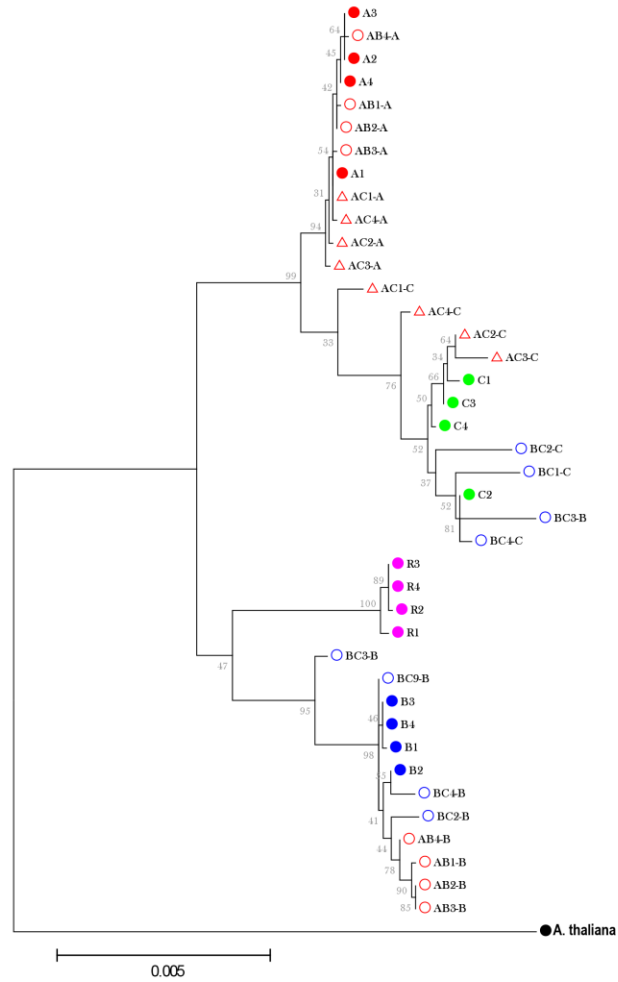


Figure S3

(B)



(A)



(B)

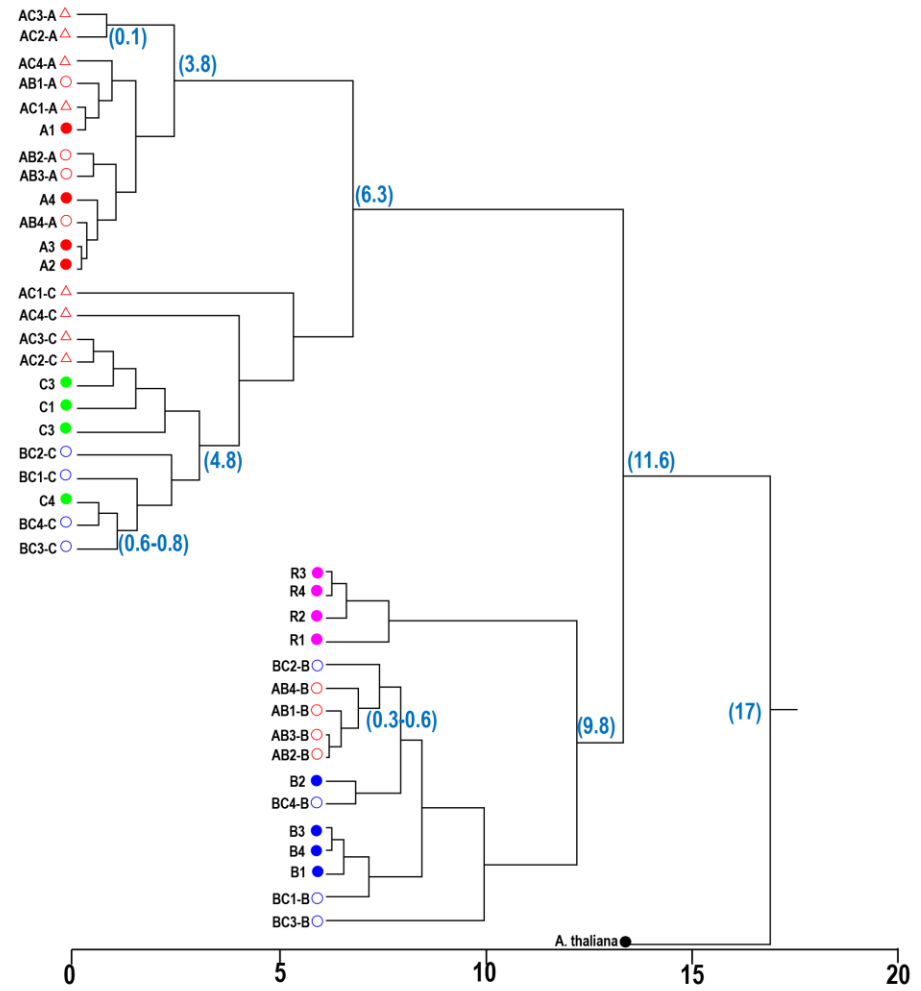


Figure S4

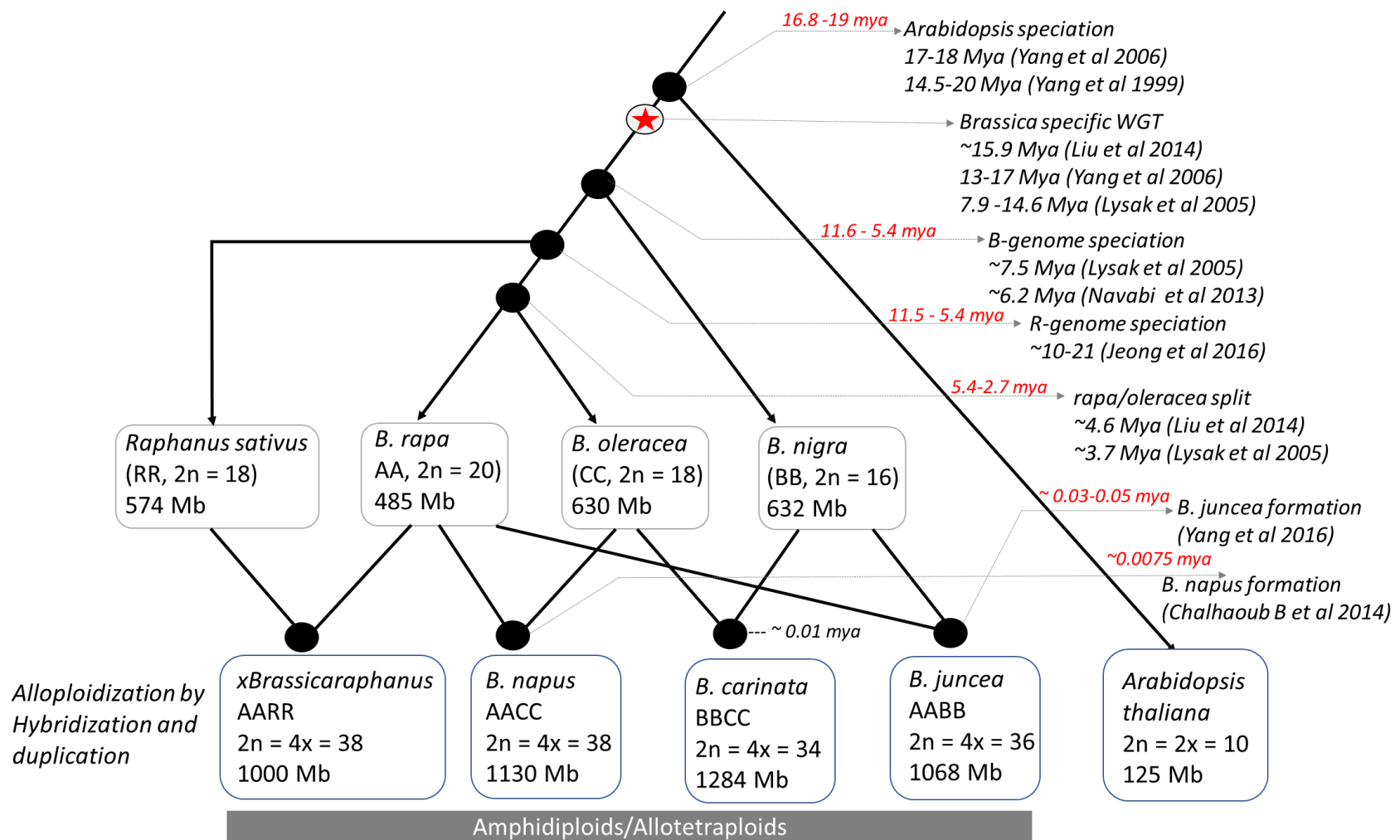


Figure S5