

Additional file 12. Phylogenetic analyses (NJ and ML) to compare the complete CrRLK1L subfamily (CRPK1-like 1) of different plant species and Pto group. We included the complete CRPK1-like 1 aa sequence set of *Arabidopsis*, poplar, tomato (*Solanum lycopersicum*), rice and moss, and Pto and paralogs of *Solanum pimpinellifolium* (see additional file 4 for sequence sources). The NJ tree (Mega 6) is presented in A, the ML trees, Mega6 and TREE-PUZZLE-implemented, are presented respectively in B and C.

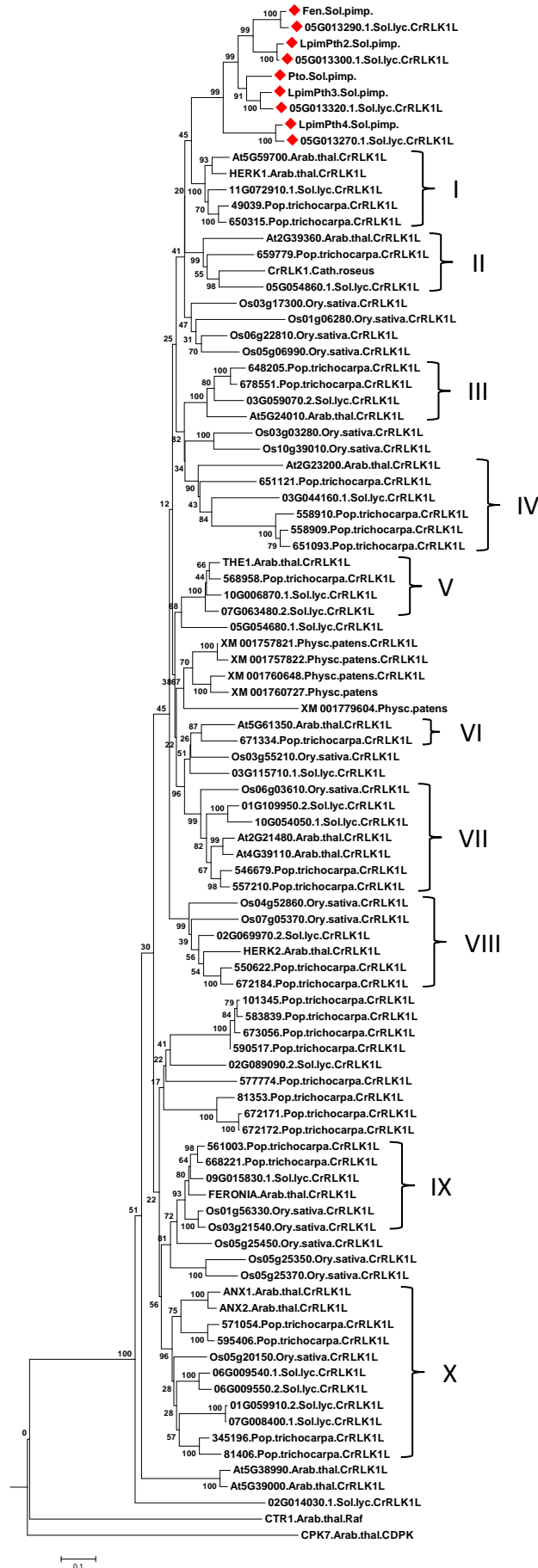
Analyses were based on the complete kinase domain region. With regard to Mega 6, the percentage of trees in which the associated sequences clustered together in the bootstrap test (1,000 replicates) is shown for each node; trees are drawn to scale in the number of substitutions per site (scale at the bottom). With regard to TREE-PUZZLE, analysis was conducted with 50,000 puzzling steps and quartet puzzling support values are shown for each node. See Methods for additional details.

Introduction

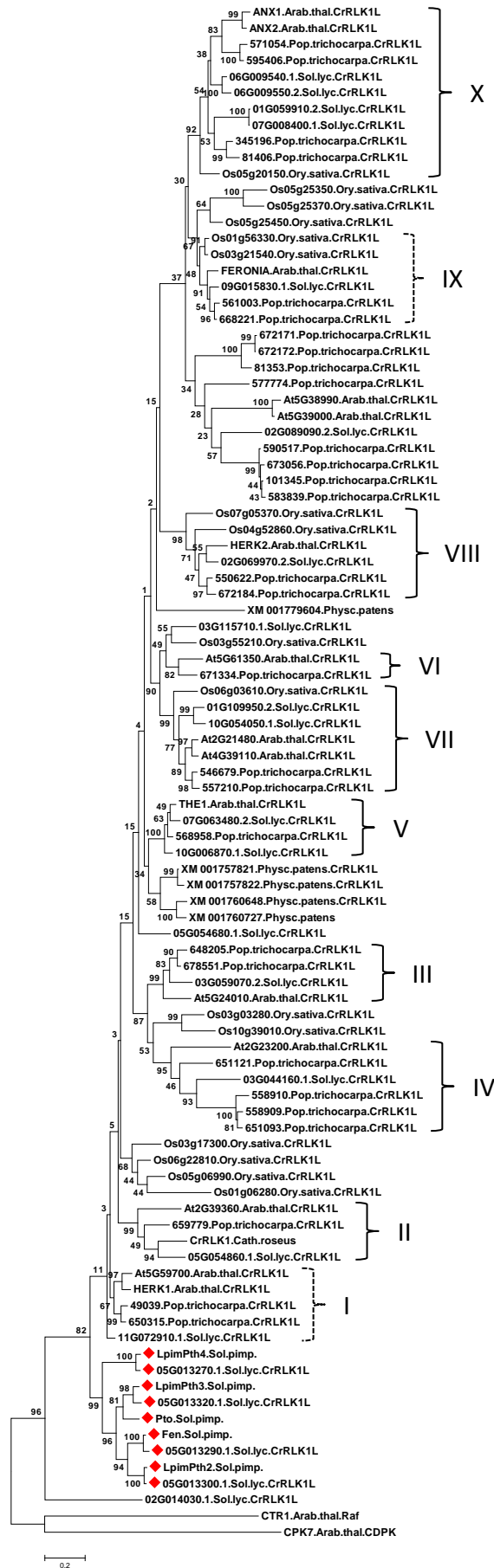
Note that CRPK1-like 1 set of *S. lycopersicum* included the Pto-like paralogs, confirming results by Sakamoto et al. [6]. Brackets with roman numerals indicates highly bootstrapped multi-species clades confirming that, frequently, in CrRLK1L, orthologs are more similar than paralogs [5, 50]. Specifically: we identified the clades in the NJ tree (A) and visualized them with a bracket, then we marked the corresponding clades in the ML trees (Mega 6 and TREE-PUZZLE-implemented, i.e. B and C respectively). In B and C dotted brackets mean that the correspondence with clades in the NJ tree is somewhat rough. Note that, in general, the multi-species phylogenetic clades are fully conserved in the three analyses.

However the major focus of this additional file is that, differently from multi-species clades, Pto and paralogs of *S. pimpinellifolium* and *S. lycopersicum* (♦ in red) represent a solanaceous-specific CrRLK1L-like clade. The phylogenetic vicinity of Pto group to CrRLK1L subfamily has been also shown in Figure 1 and 5, and in Additional files 6, 7, 10, 11 and is evident, though not discussed by the authors, in the phylogenetic tree of tomato RLK/Pelles by Sakamoto et al. [6]. The phylogenies also shows the expansion of the subfamily in vascular plants, compared with moss.

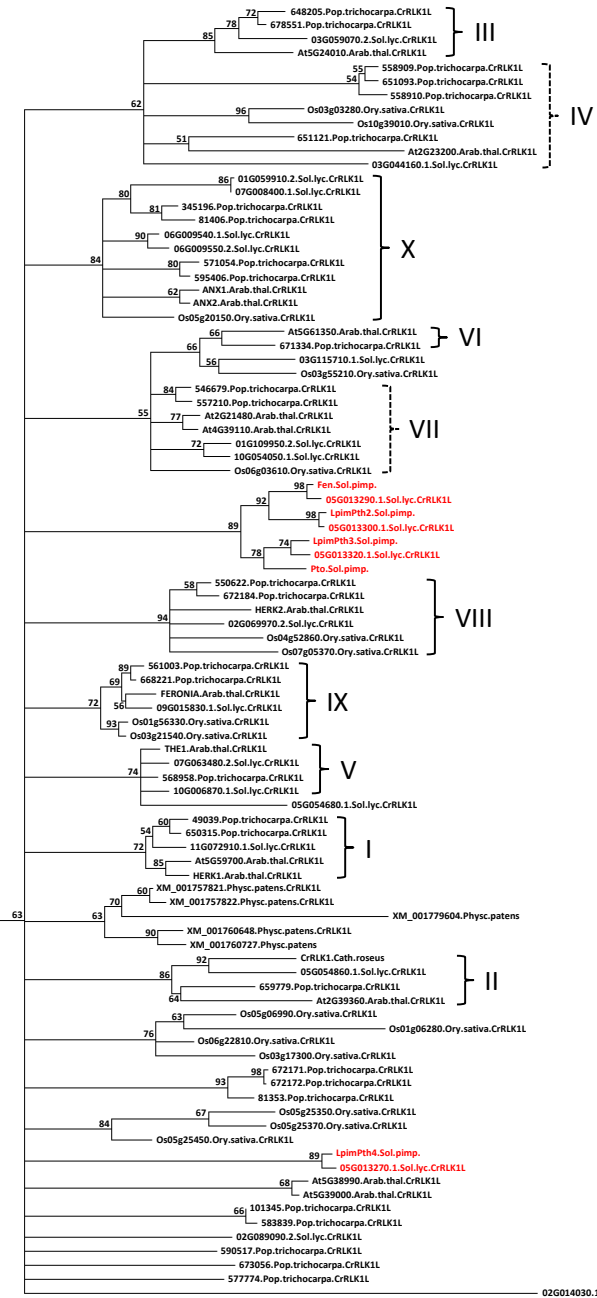
A



B



C



02G014030.1.Sol.lyc.CrRLK1L
CTR1.Arab.thal.Raf
CPK7.Arab.thal.CDPK