

SUPPLEMENTARY MATERIAL - FIGURE LEGENDS

Fig. s1. Results of S-F analyses. Diagram of the changes in number of sites and in the measure of tree robustness for complete dataset and levels of S-F. The tree robustness is expressed in the average posterior probability (APP) computed in MrBayes and average bootstrap values (ABV) for MP and LD computed in PAUP. The colors of marks indicate the size of the 1-4-7-8-9-10 cluster of long branches present in each particular tree. Yellow indicates the presence of the whole cluster 1-4-7-8-9-10, green of the 1-7-8-9-10 cluster, red of the 7-8-9-10 cluster, blue of the 7-9-10 cluster and black of the 9-10 cluster.

Fig. s2. The phylogenetic trees for the S-F levels 6-1 constructed by MrBayes. The color boxes and numbers correspond to figure 1. Arrows indicate the long-branching clades 7, 8, 9, 10 that split at more strict levels of S-F. At s5, s4 and s2 three independent runs of MrBayes generated different topologies in respect to position of these clades. In both cases, the 7-8-9-10 cluster was split in two of the three replicates and this topology is showed here.

Fig. s3. The results of taxa-exclusion method. Each figure (A-D) schematically illustrates the situation where one long-branch producing clade was added to the tree, from which the other long branches were excluded. In each box is a list of methods and levels of S-F that placed the clade at the position marked by the line. If the topology of the reduced tree changed, and it was not possible to place the branch in the figure exactly, the region where the branch should belong was marked by an ellipse. The thickness of the ellipse or diameter of the dot corresponds to the number of methods that placed the clade at that position.

A) Trichonymphidae, B) Eucomonymphidae, C) Spirotrichonymphidae and Holomastigotoididae, D) *Hexamastix*.