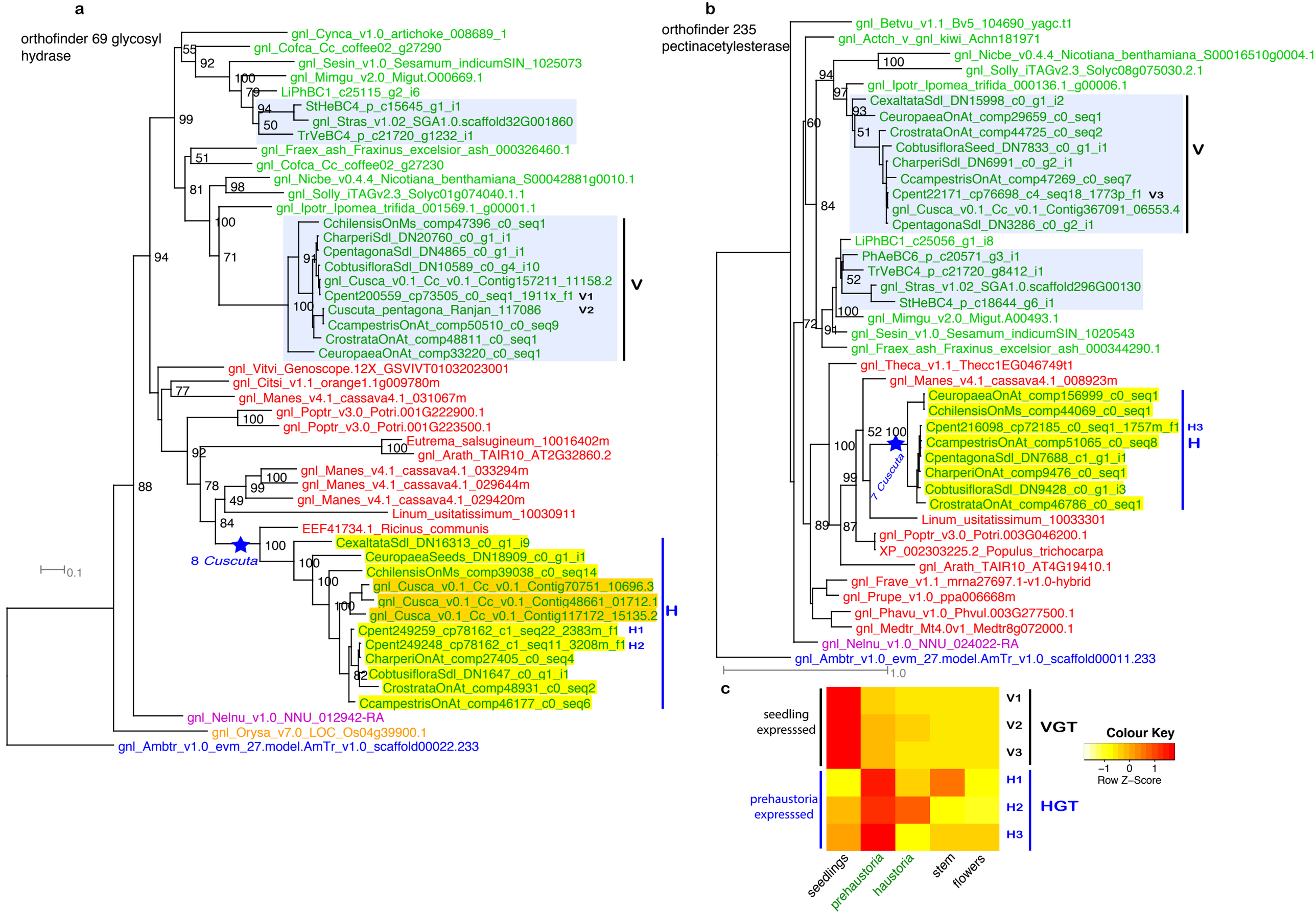

Fig. S12. Ancestral transfer of two prehaustorial upregulated cell-wall related gene families - one glycosyl hydrolase (OrthoFinder group 69 in Fig. S9a) and one pectinacetylesterase (OrthoFinder group 235 in Fig. S9b). (a) phylogenetic tree where HGT was detected in all eight *Cuscuta* species sampled in this study; phylogeny of *Cuscuta* species HGT gene is consistent with species phylogeny, and HGT gene is inferred to have occurred in a common ancestor of all extant lineages; (b) phylogenetic tree where HGT is detected in seven *Cuscuta* taxa. Different angiosperm lineages are coloured according to the colour code system in Fig. 2d. The HGT sequences were labeled with “H”, whereas the vertically transmitted sequences (VGT) were labeled as “V”. (c) compares the expression of HGT and VGT sequences, showing that HGT sequences all show highest expression in prehaustorial tissues, whereas the VGT sequences show tissue specific expression in seedlings. The constrasting expression pattern indicates that the genes of vertical origin play a role in loosenining host cell walls for invasion.