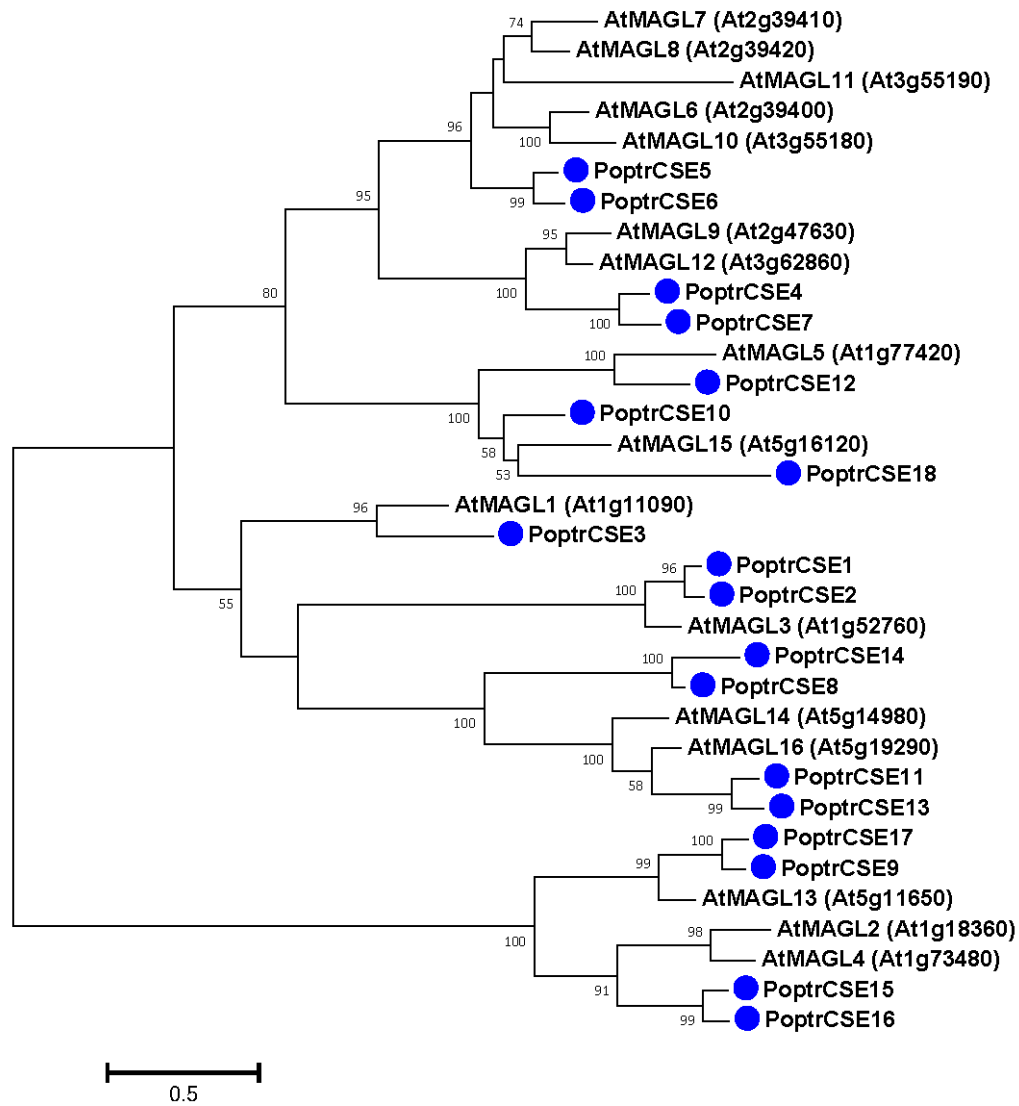


**Fig. S1** The decrease of caffeoyl shikimate and the increase of caffeic acid along with the reaction process catalyzed by PoptoCSE12 with different reaction time 0 min (a), 30 min(b) and 60 min (c); HPLC of the caffeic acid (d) and caffeoyl shikimate (e).



**Fig. S2** The phylogenetic analysis of PoptrCSE and PoptrCSE-like proteins with AtMAGLs. Clusters are corresponding with groups in Fig. 4.