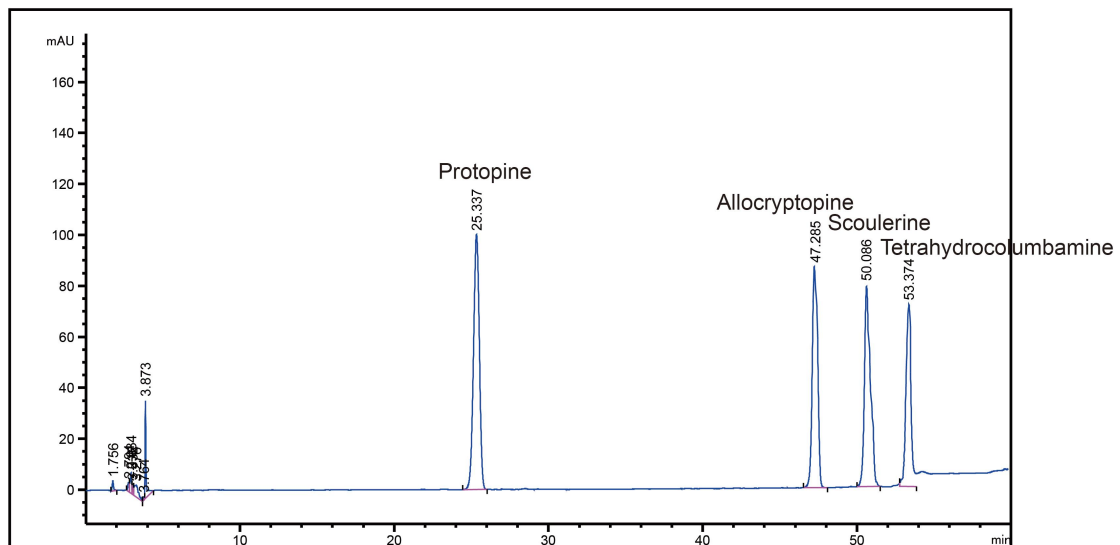
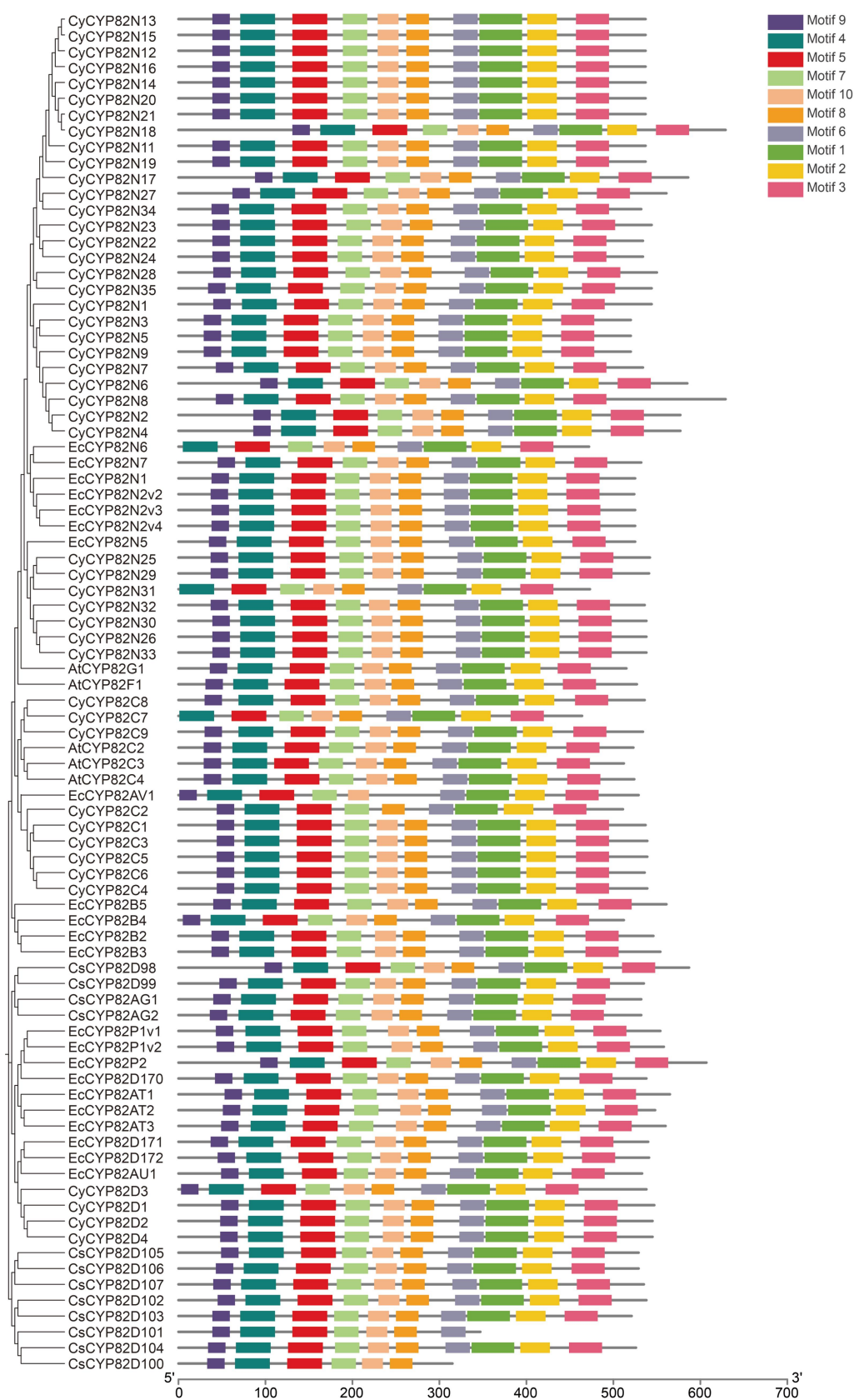
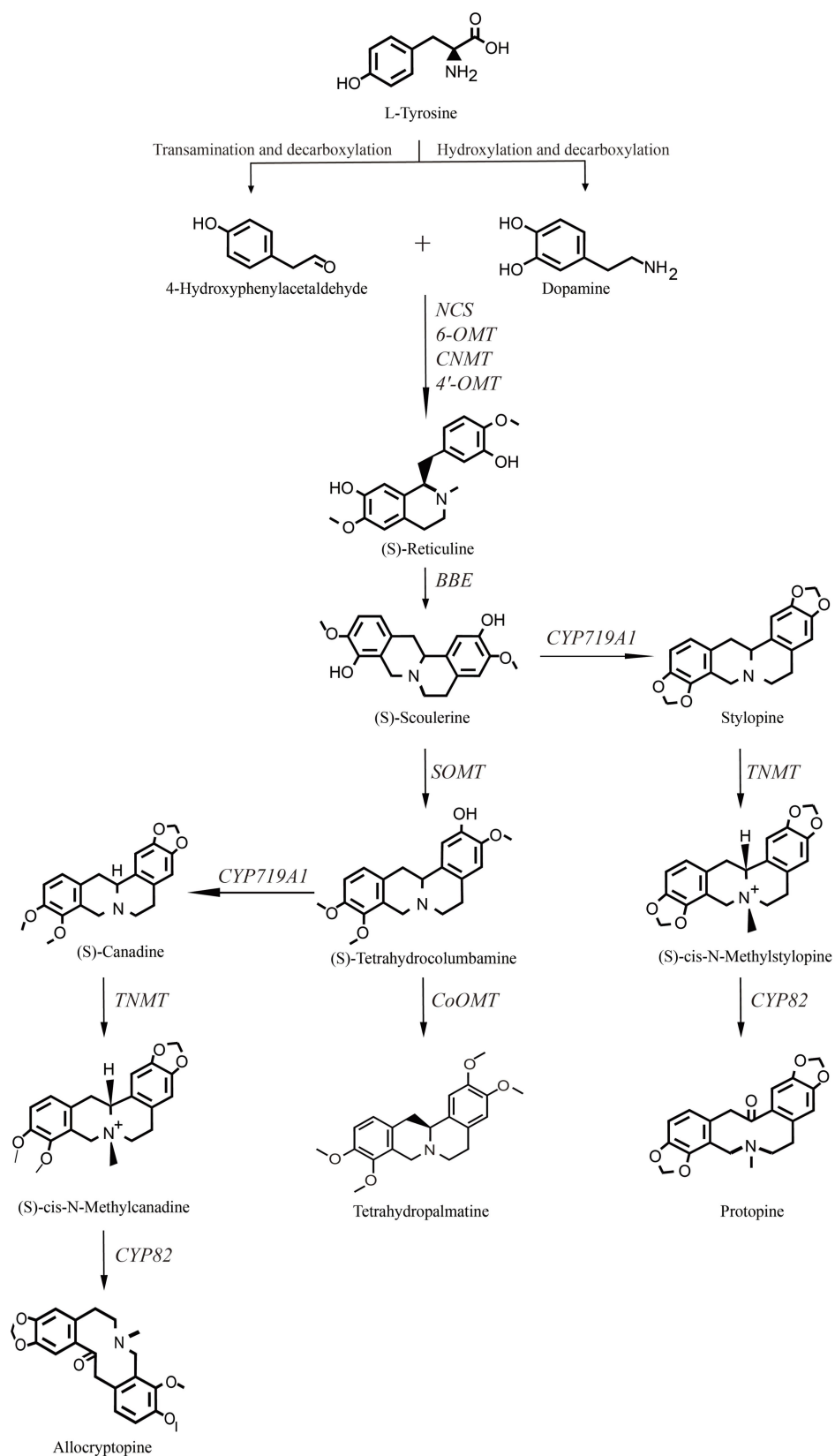




Supplementary figure 1 HPLC chromatogram of protopine, allocryptopine, scoulerine and tetrahydrocolumbamine reference standards



Supplementary figure 2 Conserved motifs of CYP82 family proteins from *C. yanhusuo*, *A. thaliana*, *C. sativus*, and *E. californica*.



Supplementary figure 3 *CYP82* gene involved in the biosynthesis pathway of alkaloids in *C. yanhusuo*.

