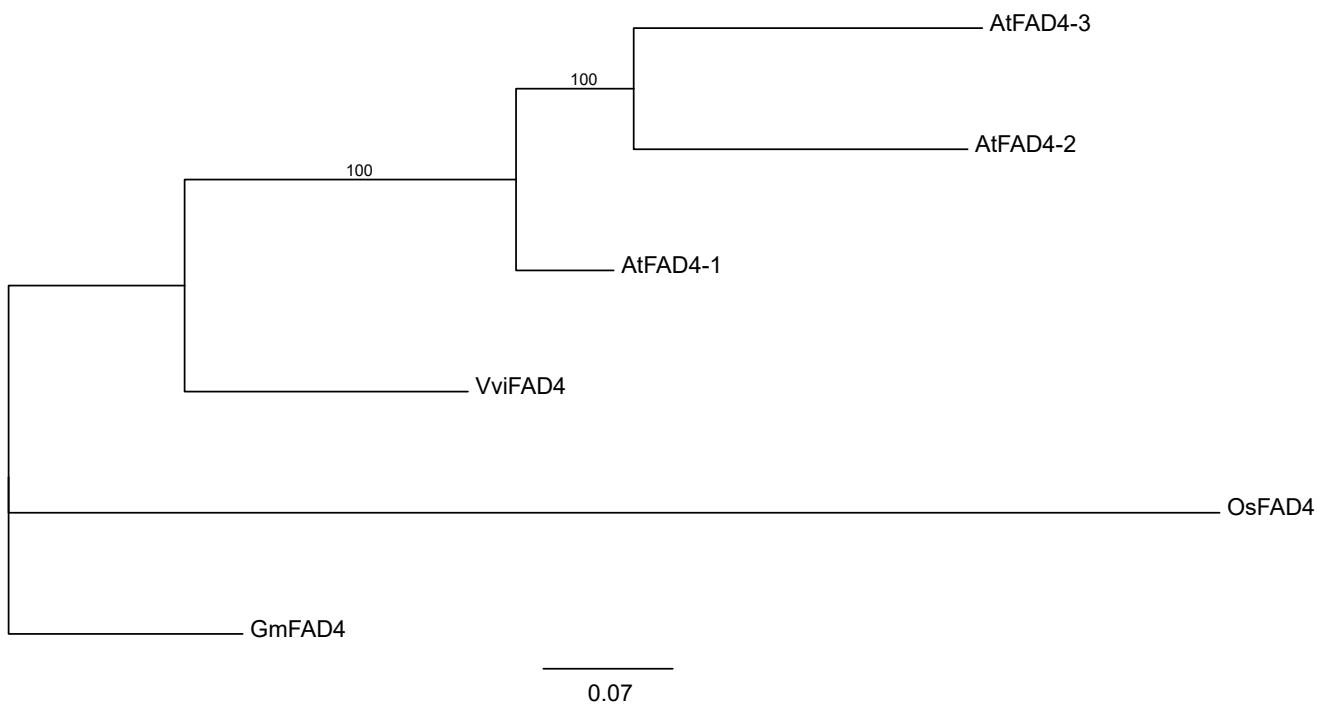
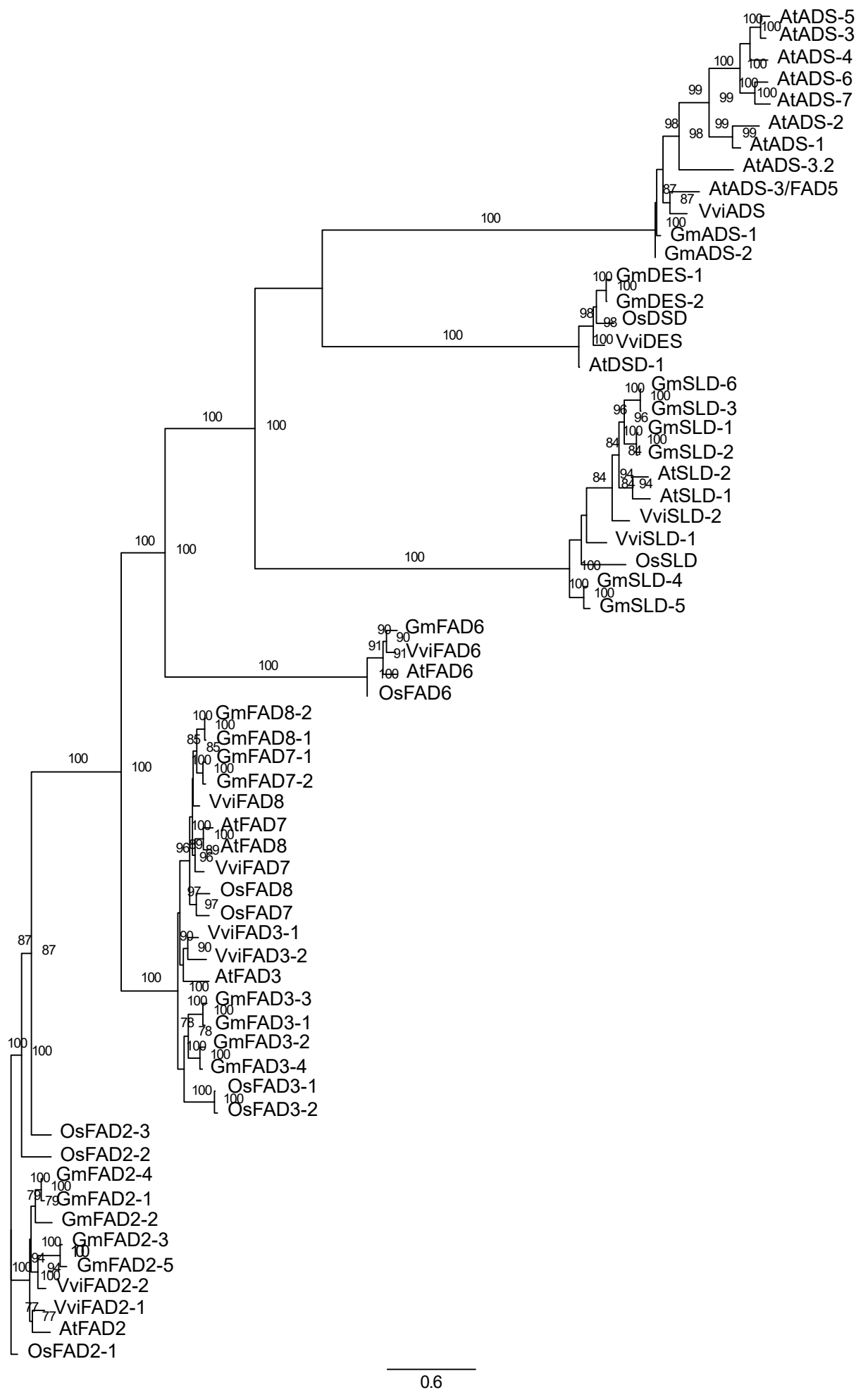


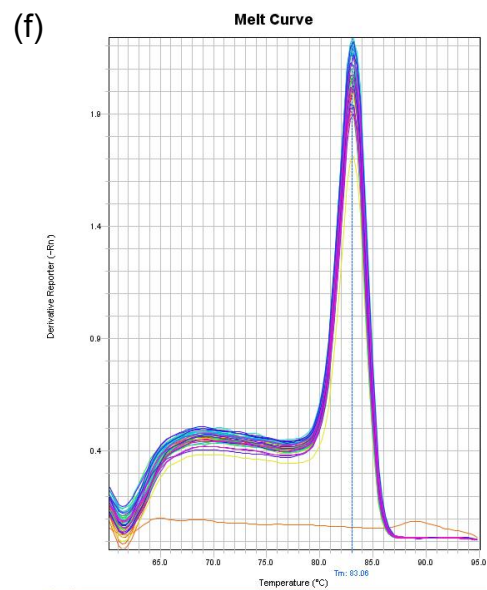
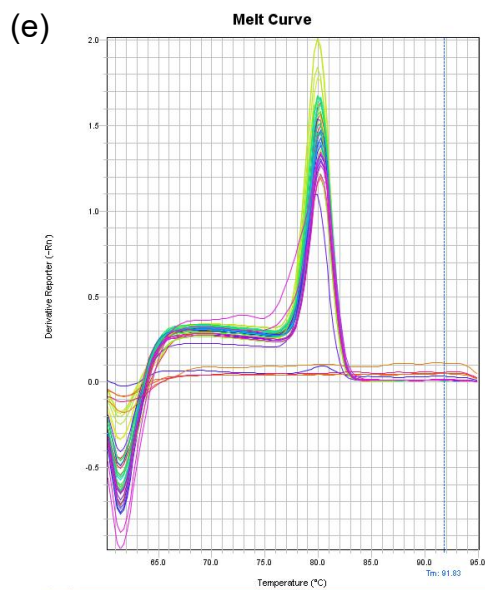
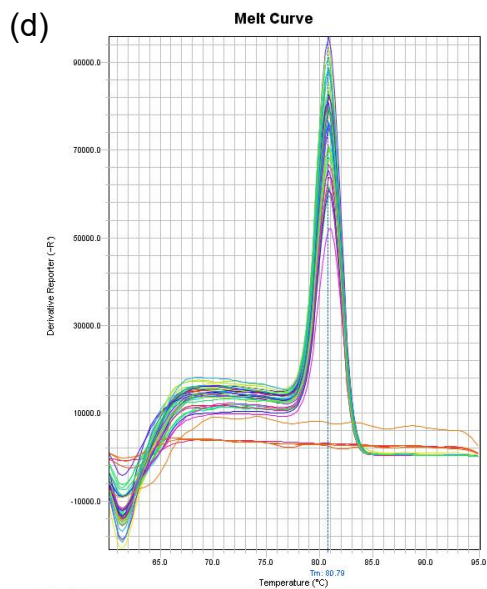
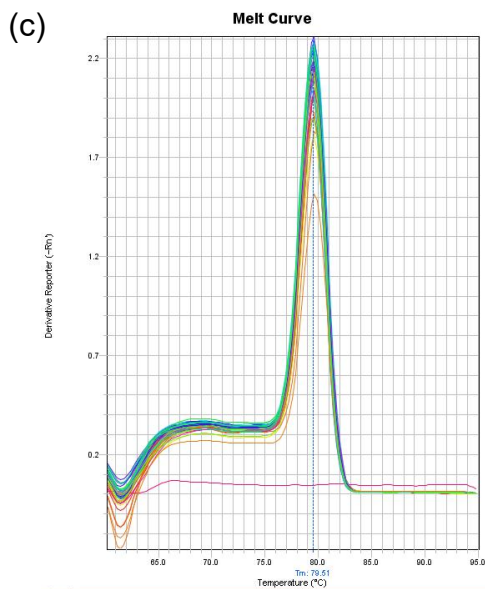
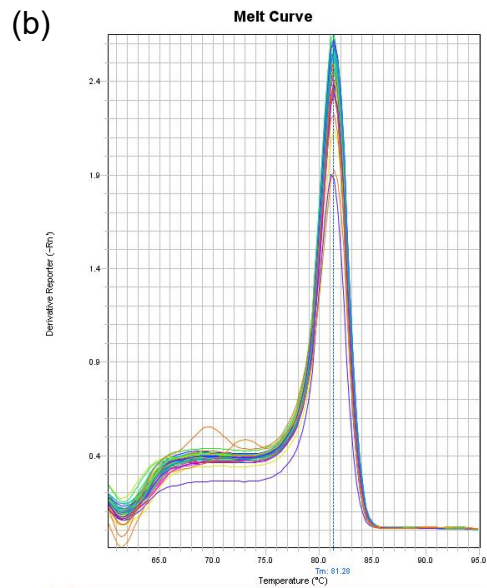
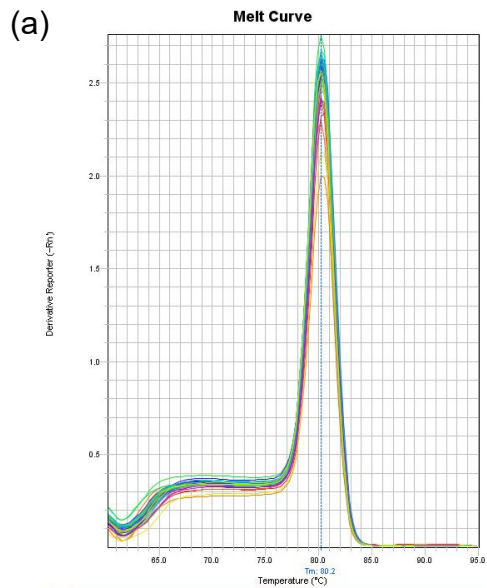
**Figure S1** - Phylogenetic tree of the SAD from *Vitis vinifera*, *Arabidopsis thaliana*, *Glycine max* and *Oryza sativa*.

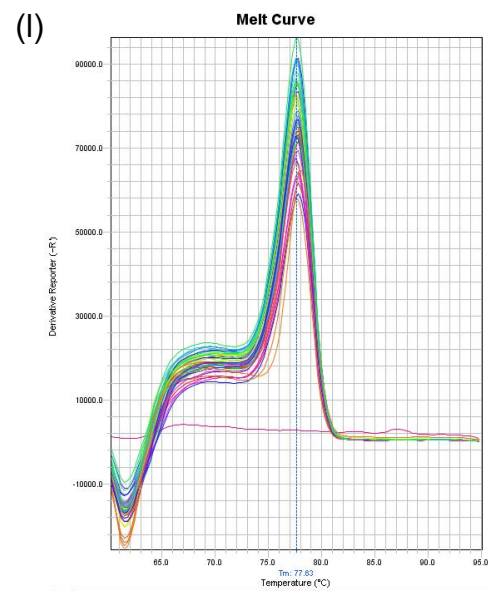
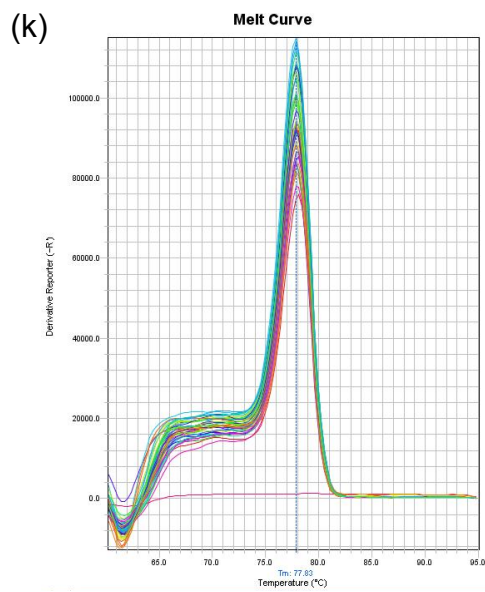
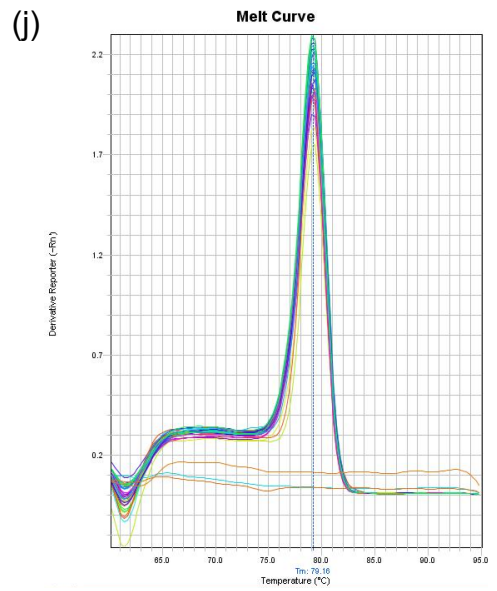
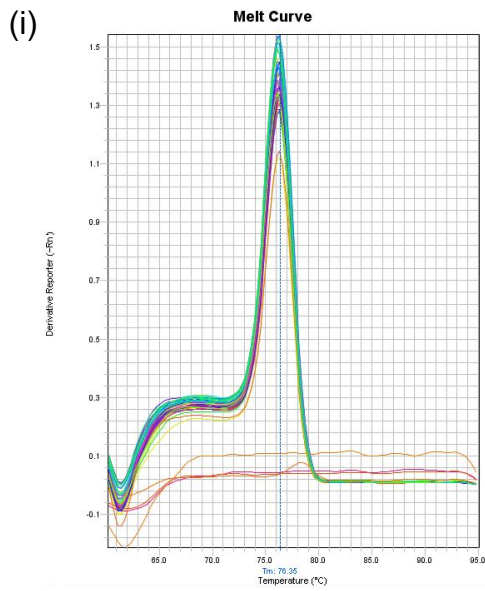
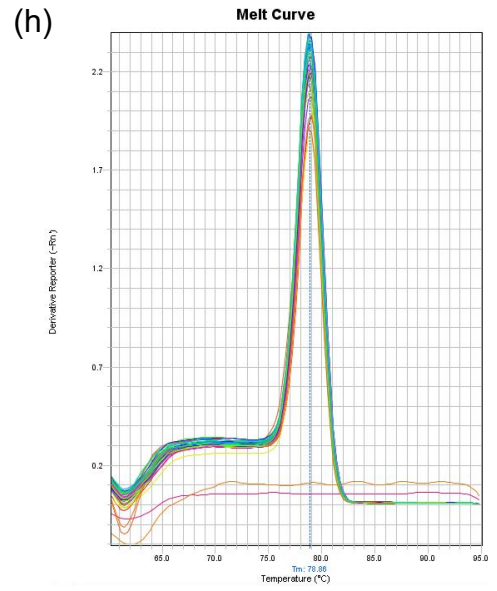
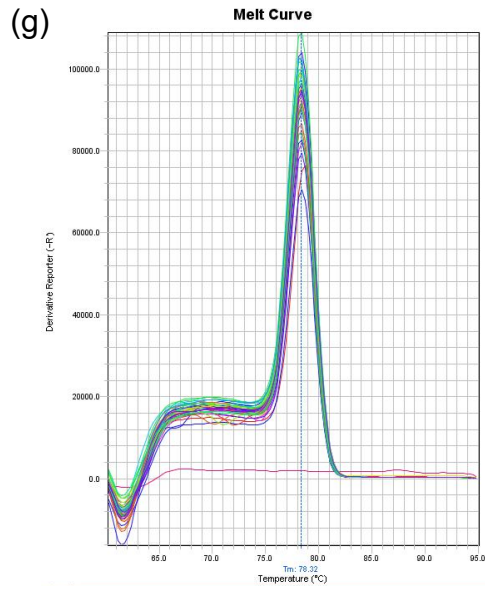


**Figure S2** - Phylogenetic tree of the membrane-bound  $\Delta^3$  desaturase from *Vitis vinifera*, *Arabidopsis thaliana*, *Glycine max* and *Oryza sativa*.



**Figure S3** - Phylogenetic tree of the membrane-bound  $\Delta^9$  desaturase,  $\Delta^{12}/\omega^6$  desaturase,  $\Delta^{15}/\omega^3$  desaturase, sphingolipids  $\Delta^4$  and the sphingolipid  $\Delta^8$  desaturases from *Vitis vinifera*, *Arabidopsis thaliana*, *Glycine max* and *Oryza sativa*.





**Figure S4** - Melting curves of targeted genes: (a) *EF1α*; (b) *UBQ*; (c) *VviFAD2-1*; (d) *VviFAD2-2*; (e) *VviFAD3-1*; (f) *VviFAD4*; (g) *VviADS*; (h) *VviFAD6*; (i) *VviFAD7*; (j) *VviFAD8*; (k) *VviSAD-1*; (l) *VviSAD-2*.