



**Fig.S1 Phylogenetic tree analysis of *ABF* family, the expression of *MdABF1* in apple treated by nitrate and identification of transgenic material.**

(a) The phylogenetic tree was analysis of ABF genes in apple and *Arabidopsis*. (b-d) Expression of *MdABFs* gene under nitrate treatment. (e-f) Identification of *MdABF1* transgenic *Arabidopsis* by DNA (e) and RNA levels (f). (g-h) Identification of *MdABF1* transgenic apple calli by DNA (g) and RNA levels (h). Error bars exhibit the means  $\pm$  SD of three independent replicates. Asterisks indicate significant differences (LSD test,  $*P < 0.05$ ).