

Figure S1 **Analysis of cis regulatory elements of *ZmAHL10* promoter** The distribution of predicted cis regulatory elements within the 2000bp upstream promoter region of the *ZmAHL10* gene, with a particular focus on elements related to environmental stress response.

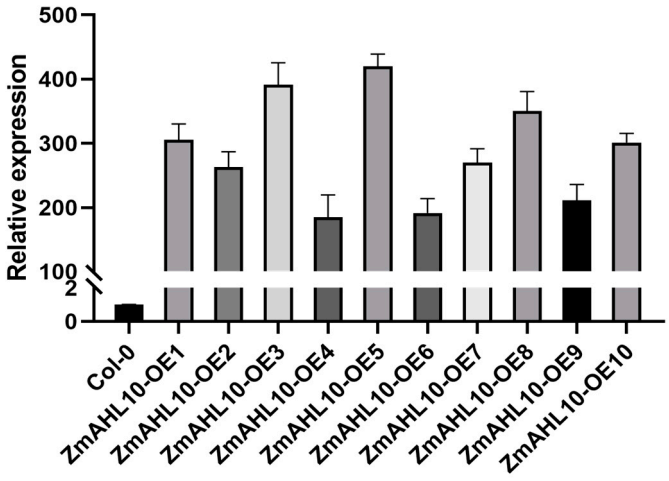


Figure S2 **Expression level of *ZmAHL10* in transgenic *Arabidopsis thaliana*** The expression level of *ZmAHL10* in transgenic lines and Col-0 *Arabidopsis thaliana*. *AtActin* serves as an internal reference gene. The bar chart represents the mean ± standard deviation (n=3 independent biological replicates).

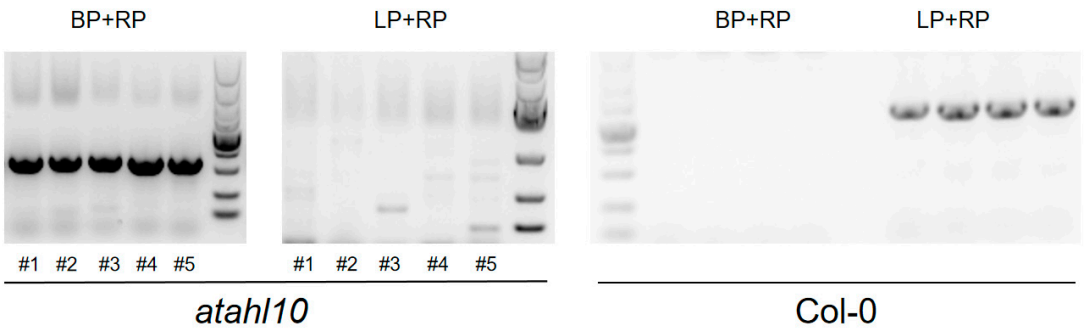


Figure S3 **Identification of the *atahl10* mutant** The agarose gel electrophoresis image for PCR identification of the *atahl10* mutant, with LP, RP, and BP as PCR identification primers.