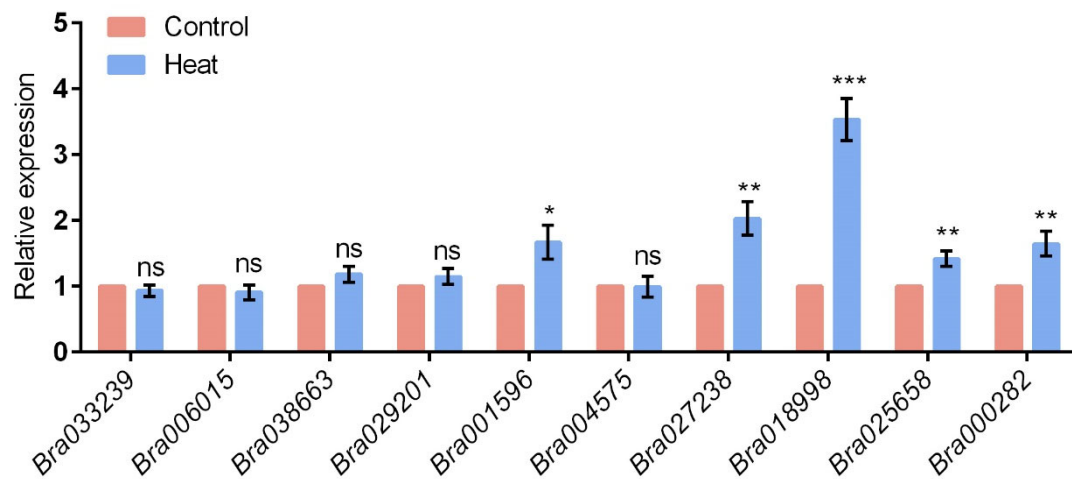
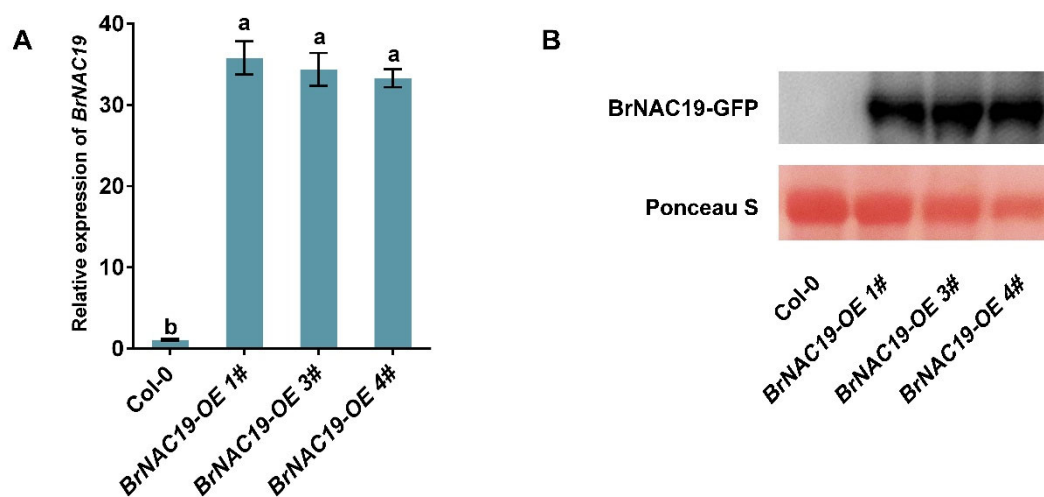


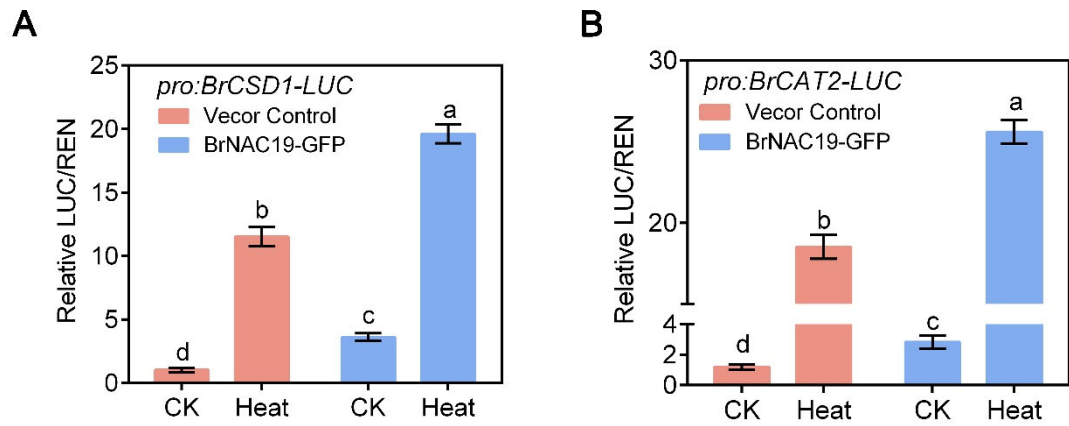
## Supplementary Figures



**Figure S1. RT-qPCR detected the expression of partial NACs tested under normal and high temperature conditions.** 2-week-old Chinese cabbage seedlings grown in the normal condition were transferred to high temperature (43 °C) for 2 h and then harvested for RNA extraction. the expression level of each gene under normal conditions was set to one. Significant differences compared with the Control are noted (student's t-test, \* $p < 0.05$ , \*\* $p < 0.01$ , \*\*\* $p < 0.001$  and ns indicates no significance).



**Figure S2. Molecular characterization of *BrNAC19-OE* transgenic seedlings.** A. Quantitative reverse transcription-PCR analysis the mRNA levels of *BrNAC19* in the indicated genotypes. *ACTIN2* expression was used as an internal reference. The data represent mean  $\pm$  SD of three biological replicates. B. Immuno-blot analysis for BrNAC19-GFP abundance in Col-0 and transgenic materials. Ponceau S was used as a loading control, and Col-0 was used as a negative control.



**Figure S3. BrNAC19 activated *BrCSD1* and *BrCAT2* transcription under heat.** A and B. Dual-luciferase assays in tobacco leaves indicated that BrNAC19 positively modulates the transcription of *BrCSD1* and *BrCAT2* after heat shock. Letters 'a' to 'd' above the bars indicate statistically significant differences between samples, and the presence of same letters between two groups indicates no significant differences (two-way ANOVA with Tukey's post hoc test;  $p < 0.05$ ).

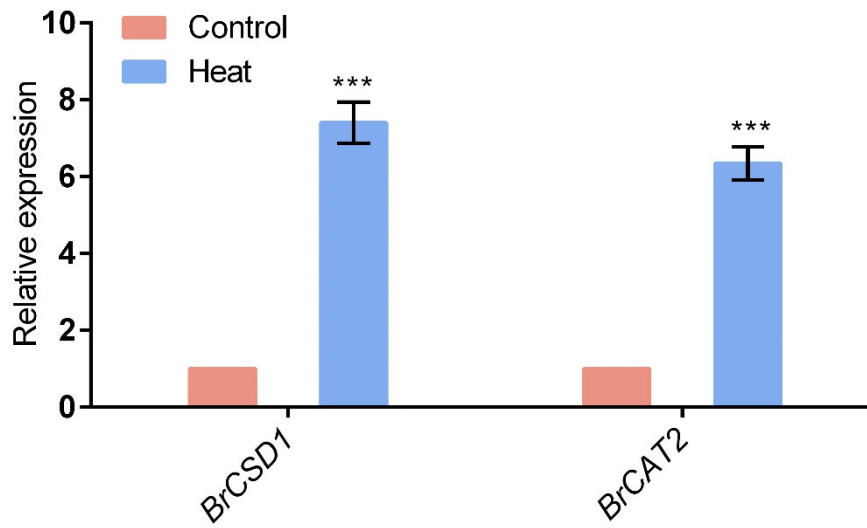


Figure S4. Heat treatment induced the expression of *BrCSD1* and *BrCAT2* in Chinese cabbage. RT-qPCR detected the expression of *BrCSD1* and *BrCAT2* under normal and high temperature conditions. 2-week-old Chinese cabbage seedlings grown in the normal condition were transferred to high temperature (43 °C) for 2 h and then harvested for RNA extraction. the expression level of each gene under normal conditions was set to one. Significant differences compared with the Control are noted (student's t-test, \*\*\* $p < 0.001$ ).

**Supplementary Table**

Table S1. Primers used for RT-qPCR

primer	Sequences
BrNAC19-QF	TGGGTATTCAGGGCAAGTTG
BrNAC19-QR	CTCGTCTCGCTCTCAGTTTTC
Bra033239-QF	GTACTTTGACACGTCGGACTC
Bra033239-QR	AAGGCTACTTTTCTCACCCG
Bra006015-QF	ATTCCGATTCCATCCCACG
Bra006015-QR	GGCTTTCCAATAACCAGTTCC
Bra038663-QF	AATAAGAAAGGAACAATGGAGAAGTG
Bra038663-QR	AACTGAGGGACAAAAGGGTC
Bra029201-QF	AAGAAAGGAACGGTGGAGAAG
Bra029201-QR	GACTGATACGGAACTGAGGG
Bra001596-QF	ACCAAGTAAGGCGCTATTCG
Bra001596-QR	AGTCTTGGTCCCTTTTGGTG
Bra004575-QF	CATCTTCATCTTCCCATAACCCG
Bra004575-QR	ATAAACCCGAGCCTTCACAG
Bra027238-QF	GAGCTAGGACGGAATCTTAACG
Bra027238-QR	CGGGTCAACACTGAACTTTG
Bra025658-QF	CGATTGGGTATTGCGGTG
Bra025658-QR	ATCTTCGGTTTCTTGGTCGG
Bra000282-QF	CTTAGACTCCGATCACACCAG
Bra000282-QR	AGTCTCCAATAAAATCTCCACCG
BrCSD1-QF	GACTGGAAGTGTCTGGTCTTA
BrCSD1-QR	TCTGGCTGTCAGTGATTGTG
BrCAT2-QF	TCCACTCATTGTCCGTTTCTC
BrCAT2-QR	CCATGACTCTCCAGTTCTCTTG
AtCSD1-QF	GCGAAAGGAGTTGCAGTTTTG
AtCSD1-QR	ACCATGAAGACCAGGCTTAAG

AtCSD2-QF	CTCCAATCCTTCAACTCTCCG
AtCSD2-QR	GAGTGAGACCAGTGATACGAAC
AtCAT1-QF	TGTCTGCTCTGGAAATCGTG
AtCAT1-QR	AGTTGCTAGTTTCTGTCCCAG
AtCAT2-QF	ACTTGTGCTGACTTTCTCCG
AtCAT2-QR	GGATGTGAGATTTTGGGTTCG
AtHSFA1D-QF	TTTCTCCAGCTTCGTTAGACAG
AtHSFA1D-QR	CAACACATGCGCTAACAGATG
AtHSF3-QF	GTTTTCACCCAACACAGTTCAG
AtHSF3-QR	GAAATTGCATCGCCTTCTGAC

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