

**Figure S1. Dual-LUC transient expression assay**.Dual-LUC transient expression assay showing the *TcCHS*/*TcAOC* promoters activity in tobacco, based on the LUC/REN ratios. LUC/REN of the control, in the absence of the effector, was considered as 1. Asterisks indicate that the value is significantly different from that of the control (\*\*P<0.01).



**Figure S2. Transient overexpression of GUS gene in leaves**.After staining with X-Gluc reagent, it was found that *T. cinerariifolium* leaves with transient overexpression of GUS gene had the best staining effect on days 3 and 4, indicating that the expression of foreign genes peaked on days 3 and 4.

**Table S1. Primers used in experiments.**

| ID | Primer name | Primer sequences（5' to 3'） |
| --- | --- | --- |
| Cloning | TcbZIP60\_ORF\_F | ATGGAAGAAGAAAATATGATGATCG |
| Cloning | TcbZIP60\_ORF\_R | CTAATAAGAAGTTACTACTTTTAGCG |
| Realtime PCR | TcCHS\_RT\_F | ACGTGCATCTTCTGGACCTCTTC |
| Realtime PCR | TcCHS\_RT\_R | TGAACAATCCGACGGTTAAGAGTC |
| Realtime PCR | TcGLIP\_RT\_F | GCCGGGAATGCGAGCAAAACAAC |
| Realtime PCR | TcGLIP\_RT\_R | CGCTCTCGCCTTCCTTAAAACCATA |
| Realtime PCR | TcAOC\_RT\_F | ATCGTGGAAGTCCTGCTTATCTAC |
| Realtime PCR | TcAOC\_RT\_R | AATGGCTTCGTATCTGTCACCTT |  |
| Realtime PCR | TcALDH\_RT\_F | CATTCCGCTACTTTGCTGGTGC |  |
| Realtime PCR | TcALDH\_RT\_R | TCCAAGGAATGATGTGTCCAACTAC |  |
| Realtime PCR | TcGAPDH\_RT\_F | AAGGAGGAATCTGAAGGAAAGCTG |  |
| Realtime PCR | TcGAPDH\_RT\_R | GTTGTTGTTCAAAGCGATTCCAGC |  |
| Realtime PCR | TcbZIP60\_RT\_F | TCTACTTCTCCTGATGTTGTTG |
| Realtime PCR | TcbZIP60\_RT\_R | TTCCTCTTCATAGTACCTGCTT |
| linking to pHis2.1 vector | TcCHS\_Pro\_pHis\_F | GACTCACTATAGGGCGAATTCGCTATTATAAAATCCCGTGTCTATGC |
| linking to pHis2.1 vector | TcCHS\_Pro\_pHis\_R | ATTACTAGTGGATCCACGCGTCATTTACAACAGAATCTTAATGTGAGTGT |
| linking to pHis2.1 vector | TcAOC\_Pro\_pHis\_F | GACTCACTATAGGGCGAATTCTATTTAACTTGTATATATACATGGGTTGAAGC |
| linking to pHis2.1 vector | TcAOC\_Pro\_pHis\_R | ATTACTAGTGGATCCACGCGTAGTTGTTAAGATTTGTTTTAATGTTTAATGC |
| linking to pGADT7 vector | bZIP60\_pGADT7\_F | GTACCAGATTACGCTCATATGATGGAAGAAGAAAATATGATGATCGA |
| linking to pGADT7 vector | bZIP60\_pGADT7\_R | ACGATTCATCTGCAGCTCGAGCTAATAAGAAGTTACTACTTTTAGCGGAGA |
| linking to pSuper1300GFP vector | bZIP60\_s1300g\_F | GGGCCCGGGGTCGACATTTAAATATGGAAGAAGAAAATATGATGATCGA |
| linking to pSuper1300GFP vector | bZIP60\_s1300g\_R | GCCCTTGCTCACCATGGTACCATAAGAAGTTACTACTTTTAGCGGAGAATC |
| linking to pGreenⅡSK62 vector | bZIP60\_SK62\_F | CAGGAATTCGATATCAAGCTTATGGAAGAAGAAAATATGATGATCGA |
| linking to pGreenⅡSK62 vector | bZIP60\_SK62\_R | GTCGACGGTATCGATAAGCTTCTAATAAGAAGTTACTACTTTTAGCGGAGA |
| linking to pGreenⅡ0800 LUC vector | CHS\_LUC\_F | GTCGACGGTATCGATAAGCTTGCTATTATAAAATCCCGTGTCTATGC |
| linking to pGreenⅡ0800 LUC vector | CHS\_LUC\_R | CAGGAATTCGATATCAAGCTTTTACAACAGAATCTTAATGTGAGTGTATGT |
| linking to pGreenⅡ0800 LUC vector | AOC\_LUC\_F | GTCGACGGTATCGATAAGCTTTATTTAACTTGTATATATACATGGGTTGAAGC |
| linking to pGreenⅡ0800 LUC vector | AOC\_LUC\_R | CAGGAATTCGATATCAAGCTTAGTTGTTAAGATTTGTTTTAATGTTTAATGC |
| linking to pET6HN-C vector | TcbZIP60\_pET6N\_F | GATCTCTAAGCTTGCGAATTCTATGGAAGAAGAAAATATGATGATCG |
| linking to pET6HN-C vector | TcbZIP60\_pET6N\_R | ACCAGGCGGCCGCCAGAATTCGCATAAGAAGTTACTACTTTTAGCG |
| Probes used in EMSA | Probe\_proCHS \_F | TTTGAAGGCAAGTGATGTAAAGTGCTAAGTGTTAAGTCAATGATTATAT |
| Probes used in EMSA | Probe\_proCHS \_R | ATATAATCATTGACTTAACACTTAGCACTTTACATCACTTGCCTTCAAA |
| Probes used in EMSA | Probe\_proAOC\_F | CAACTAATCACACACCGCCACGTGTCCACCGTCCACCTACT |
| Probes used in EMSA | Probe\_proAOC\_R | AGTAGGTGGACGGTGGACACGTGGCGGTGTGTGATTAGTTG |
| Probes used in EMSA | mProbe\_proCHS \_F | TTAAAAAGCAAAAAATGTAAAGTGCTAAGTGTTAAAAAAAAAATTATAT |
| Probes used in EMSA | mProbe\_proCHS \_R | ATATAATTTTTTTTTTAACACTTAGCACTTTACATTTTTTGCTTTTTAA |
| Probes used in EMSA | mProbe\_proAOC\_F | CAACTAATCACACACCGCTCTTCTTCCACCGTCCACCTACT |
| Probes used in EMSA | mProbe\_proAOC\_R | AGTAGGTGGACGGTGGAAGAAGAGCGGTGTGTGATTAGTTG |
| ptrv1\_check\_F | PTRV1\_3807\_F | GGCCTTGCGCCGTTCCAGAT |
| ptrv1\_check\_R | PTRV1\_4667\_R | CCCAAAGGAAGGCCGCCCAC |
| ptrv2\_check\_F | PTRV2\_1604\_F | TTATTACGGACGAGTGGACTTAG |
| ptrv2\_check\_R | PTRV2\_1761\_R | AACTTCAGACACGGATCTACTT |
| linking to pTRV2 vector | TcbZIP60\_VIGS\_F | AGAAGGCCTCCATGGGGATCCGATCCGTGCTCCAATGCTTT |
| linking to pTRV2 vector | TcbZIP60\_VIGS\_R | CGTGAGCTCGGTACCGGATCCTGAATCGTTTACCCACCATAAGG |

**Table S2. Part of cis-acting regulatory elements in promoters of *TcCHS, TcAOC,TcALDH, TcGLIP.***

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Gene Name | Motif-Name | Core sequence | Num | Predictive function |
| TcALDHTcAOCTcCHSTcGLIP | ABRE3aABREABRE4as-1CGTCA-motifG-boxABRE3aTGACG-motifG-boxas-1GARE-motifE-boxTC-rich repeatsas-1TC-rich repeatsABRE4 | TACGTGGCAACGTGTCCACGTATGACGCGTCACACGACTACGTGTGACGACACGTGGCTGACTCTGTTGCAAGTGGTTTTCTTACTGACATTCTCTAACCACGTA | 6965566585759996 | cis-acting element involved in the ABA responsivenesscis-acting element involved in the ABA responsivenesscis-acting element involved in the ABA responsivenesscis-acting element involved in the SA responsivenesscis-acting element involved in the MeJA responsivenesscis-acting regulatory element involved in light responsivenesscis-acting element involved in the ABA responsivenesscis-acting element involved in the MeJA responsivenesscis-acting regulatory element involved in light responsivenesscis-acting element involved in the SA responsivenessgibberellin-responsive elementbinding site of bZIP binding proteincis-acting element involved in defense and stress responsivenesscis-acting element involved in the SA responsivenesscis-acting element involved in defense and stress responsivenesscis-acting element involved in the ABA responsiveness |
| G-box | TACGTG | 6 | cis-acting regulatory element involved in light responsiveness |

**Table S3.** **Genbank accession of the genes used in the assay**

|  |  |  |
| --- | --- | --- |
| Name | GenBank accession | Species |
| AtbZIP60 | AT5G11260.1 | *Arabidopsis thaliana* |
| AaHY5 | PWA35981.1 | *Artemisia annua* |
| TcbZIP60 | OM988163 | *Tanacetum cinerariifolium* |
| AtHY5 | AT5G11260 | *Citrus unshiu* |
| NbbZIP60 | QBA30963.1 | *Nicotiana benthamiana* |
| NabZIP60-like | XP\_019252016.1 | *Nicotiana attenuata* |
| ZmbZIP60 | PWZ40661.1 | *Zea mays* |
| OsbZIP60 | XP\_015647746.1 | *Oryza sativa* |
| GmbZIP60 | ABI34648.1 | *Glycine max* |
| JcbZIP60-like | XP\_022867730.1 | *Jatropha curcas* |