**Additional file 3.**

Putative cis-acting regulatory elements identified in the *F3'H* and *F3'5'H* promoters. Promoter analysis was performed using New PLACE database.

“+” – coding strand, “–” – template strand.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Motif | Sequence | Gene | Position (chain orientation) | Description |
| “+” | “- ‘’ |
| PALBOXAPC | CCGTCC | *F3'5'H-1* | -  | - 480 | One of three putative cis- acting elements (boxes P, A, and L) of phenylalanine ammonia- lyase (PAL; EC 4.3.1.5) genes in parsley. These elements appear to be necessary but not sufficient for elicitor- or light- mediated PAL gene activation. |
| *F3'5'H-4* | - 631 | -  |
| SORLIP1AT | GCCAC | *F3'H-1* | - 467 -  -  | -  - 358 - 367 | One of "Sequences Over- Represented in Light- Induced Promoters (SORLIPs) in Arabidopsis. |
| *F3'5'H-1* | - 328 | -  |
| SORLIP2AT | GGGCC | *F3'5'H-1* |  - 396 |  | One of "Sequences Over- Represented in Light- Induced Promoters (SORLIPs) in Arabidopsis. |
| SORLIP5AT | GAGTGAG | *F3'H- 1* |  -  -  - 376 |  - 442 - 438 -  | One of "Sequences Over- Represented in Light- Induced Promoters (SORLIPs) in Arabidopsis. |
| GATABOX | GATA | *F3'H- 2* |  - 536 |  -  | Required for high level, light regulated, and tissue specific expression. |
| *F3'5'H- 1* |  - 323 - |  - -160 |
| *F3'5'H- 2* |  |  - 356 |
| *F3'5'H- 3* |  - |  - 492 |
| *F3'5'H- 4* |  - 557 |  - |
| IBOXCORE | GATAA | *F3'H- 2* |  -  |  - 678 | Conserved sequence upstream of light- regulated genes of both monocots and dicots. |
| *F3'5'H- 4* |  - 557 |  - |
| GT1CONSENSUS | GRWAAW | *F3'H- 1* |  -  |  - 545 | Consensus GT-1 binding site in many light- regulated genes. |
| *F3'H- 2* |  - - - - |  - 679 - 649 - 525 - 505 |
| MYCCONSENSUSAT | CANNTG | *F3'H- 1* |  - 390 -  | -  - 318 | MYC recognition site found in the promoters of the dehydration- responsive gene rd22 and many other genes in Arabidopsis. |
| *F3'H- 2* |  - - 340 |  - 451 - |
| *F3'5’H- 1* |  - 382 - 356 |  - - |
| *F3'5'H- 2* |  - 515 -  - 227 |  - - - |
| MYCATERD1 | CATGTG | *F3'5'H- 1* |  -  |  - 382 | MYC recognition sequence necessary for expression of erd1 (early responsive to dehydration) in dehydrated Arabidopsis. |
| *F3'5'H- 2* | - | - 425 |
| MYCATRD22 | CACATG | *F3'5'H- 1* |  - 382 |  -  | Binding site for MYC (rd22BP1) in Arabidopsis (A.t.) dehydration- resposive gene, rd22. |
| *F3'5'H- 2* | - 425 | - |
| MYBZM | CCWACC | *F3'5'H- 1* |  - 374 |  -  | Core of consensus maize P (myb homolog) binding site. |
| *F3'5'H- 3* |  - |  - 756 |
| MYBCORE | CNGTTR | *F3'5'H- 1* |  - 147 |  -  | Binding site for all animal MYB and at least two plant MYB proteins ATMYB1 and ATMYB2. |
| *F3'5'H- 3* |  - 757 -  - 667 -  - 596 - 505 - 456 - 414 - 390 |  -  - 686 -  - 599 -  -  -  -  - |
| MYBPLANT | MACCWAMC | *F3'5'H- 1* |  - 376 |  -  | Plant MYB binding site; Consensus sequence related to box P in promoters of phenylpropanoid biosynthetic genes such as PAL, CHS, CHI, DFR, CL, Bz1. |
| *F3'5'H- 3* |  - |  - 756 |
| MYB1AT | WAACCA | *F3'H- 2* | - 658 -  | -  - 630 | MYB recognition site found in the promoters of the dehydration- responsive gene rd22 and many other genes in Arabidopsis. |
| *F3'5'H- 1* |  -  |  - 419 |
| *F3'5'H- 4* |  - |  - 582 |
| MYBST1 | GGATA | *F3'5'H- 2* |  -  |  - 356 | Core motif of MybSt1 (a potato MYB homolog) binding site. |
| MYB2CONSENSUSAT | YAACKG | *F3'5'H- 3* |  -  - 599 |  - 667 -  | MYB recognition site found in the promoters of the dehydration- responsive gene rd22 and many other genes in Arabidopsis. |