

Table S1. Information of CYP85A genes.

OsCYP85A1-1	..MVLVAIGVVVAAAVVSSILLRNNEVRYSRKRLGLPPGTMGWELFGETTEFLKCGHSFMRARLRYGSLERTHILGCTVVCMEFELNRRLASDGRFF	98
ZmCYP85A1	..MALLLLLLLAVIGVVLASSILLRNNEVRYSRKRLGLPPGTMGWELFGETTEFLKCGHSFMRARLRYGSLERTHILGCTVVCMEFELNRRLASDGRFF	98
PtCYP85A-1	.MAVFFVVLVVVLFLEGISSALLRNNEVRY.RKKGLPPGTMGWELFGETTEFLKCGHSFMRARLRYGSLERTHILGCTVVCMEFELNRRLASDGRFF	98
PtCYP85A-2	.MAVLLMVLVAVLFLEGISSALLRNNEVRY.RKKGLPPGTMGWELFGETTEFLKCGHSFMRARLRYGSLERTHILGCTVVCMEFELNRRLASDGRFF	98
PtCYP85A1	MAVLVLASWLFVGLFVCFVAMKWNNEVRY.GRKGGLPPGTMGWELFGETTEFLKCGHSFMRARLRYGSLERTHILGCTVVCMEFELNRRLASDGRFF	99
Consensus	ne ry glppgtmgw el fget eflk gp fmk ryg f h lg pt elnr l e g	
OsCYP85A1-1	VFGYPCSLDILGRNNTAAVCGPLHRAARGAMLSIVREHMRSSSLPRTDAFMRSELAAMSSSSSSAVVDICAPTRVALLSALRCIAGVSAGPLSDALK	198
ZmCYP85A1	VFGYPCSLDILGRNNTAAVCGPLHRAARGAMLSIVREHMRSSSLPRTDAFMRSELAAMSSSSSSAVVDICAPTRVALLSALRCIAGVSAGPLSDALK	194
PtCYP85A-1	VFGYPCSLDILGRNNTAAVCGSTHXYRGALLSLISFTMIRECLLPDIEFMRTELSDWSKI...IDICQNTREVALLSALKCIAGVDSISISQAFM	194
PtCYP85A-2	VFGYPCSLDILGRNNTAAVCGSTHXYRGALLSLISFTMIRECLLPDIEFMRTELSDWSKI...IDICQNTREVALLSALKCIAGVDSISISQAFM	194
PtCYP85A1	VFGYPCSLDILGRNNTAAVCGSTHXYRGALLSLISFTMIRECLLPDIEFMRTELSDWSKI...IDICQNTREVALLSALKCIAGVDSISISQAFM	195
Consensus	vpgyqqs dilg n v g h rg l l p m i l l id r l w d q t e a a i	
OsCYP85A1-1	AEFLYTVIGTSLIEINLPGTNYVCGFKRKKRLVAMLEQMTAERRSSGQVHEDYLDALLTGVEGTREKIDDEQIDILLITLLYSGYETVSTTSMMAVKYLS	298
ZmCYP85A1	AEFLYTVIGTSLIEINLPGTNYVCGFKRKKRLVAMLEQMTAERRSSGQVHEDYLDALLTGVEGTREKIDDEQIDILLITLLYSGYETVSTTSMMAVKYLS	294
PtCYP85A-1	AEFLYTVIGTSLIEINLPGTNYVCGFKRKKRLVAMLEQMTAERRSSGQVHEDYLDALLTGVEGTREKIDDEQIDILLITLLYSGYETVSTTSMMAVKYLS	293
PtCYP85A-2	AEFLYTVIGTSLIEINLPGTNYVCGFKRKKRLVAMLEQMTAERRSSGQVHEDYLDALLTGVEGTREKIDDEQIDILLITLLYSGYETVSTTSMMAVKYLS	293
PtCYP85A1	AEFLYTVIGTSLIEINLPGTNYVCGFKRKKRLVAMLEQMTAERRSSGQVHEDYLDALLTGVEGTREKIDDEQIDILLITLLYSGYETVSTTSMMAVKYLS	294
Consensus	e l gt sl i pgt y g r m i rr s d l l d id it ysgyet stt mma ky	
OsCYP85A1-1	DEKRLQELREEFELIRKGAAPEDALDNDIKSMITRAVIFETLRATVNGILRKTQDVENGYVIFKGRWLYVYTRINDEFLYFPEMTFNEFRW	398
ZmCYP85A1	DEKRLQELREEFELIRKGAAPEDALDNDIKSMITRAVIFETLRATVNGILRKTQDVENGYVIFKGRWLYVYTRINDEFLYFPEMTFNEFRW	387
PtCYP85A-1	DEKRLQELREEFELIRKGAAPEDALDNDIKSMITRAVIFETLRATVNGILRKTQDVENGYVIFKGRWLYVYTRINDEFLYFPEMTFNEFRW	393
PtCYP85A-2	DEKRLQELREEFELIRKGAAPEDALDNDIKSMITRAVIFETLRATVNGILRKTQDVENGYVIFKGRWLYVYTRINDEFLYFPEMTFNEFRW	393
PtCYP85A1	DEKRLQELREEFELIRKGAAPEDALDNDIKSMITRAVIFETLRATVNGILRKTQDVENGYVIFKGRWLYVYTRINDEFLYFPEMTFNEFRW	394
Consensus	d p l r eh r ped d d k m ft avi et r a vng l rkt e n pkgwr yv rein dp yp p	
OsCYP85A1-1	LEKNVESHPEHMFEGGGRCPGKDVGTVEITFLHYFVTCYRWEDEGNNITIKFPRVDAENGLFIRVQD	468
ZmCYP85A1	LEKNVESHPEHMFEGGGRCPGKDVGTVEITFLHYFVTCYRWEDEGNNITIKFPRVDAENGLFIRVQD	456
PtCYP85A-1	LDKSLPESQNYLFFEGGGRCPGKDVGTVEITFLHYFVTCYRWEDEGNNITIKFPRVDAENGLFIRVQD	463
PtCYP85A-2	LDKSLPESQNYLFFEGGGRCPGKDVGTVEITFLHYFVTCYRWEDEGNNITIKFPRVDAENGLFIRVQD	463
PtCYP85A1	MDNGDENHNYCFVFGGGRCPGKDVGTVEITFLHYFVTCYRWEDEGNNITIKFPRVDAENGLFIRVQD	464
Consensus	e fggg r cpgke g i tflhyft yrwee kfprv a ngl irv	

Figure S1. Sequence alignment of *Populus tomentosa* and *Z. mays*.

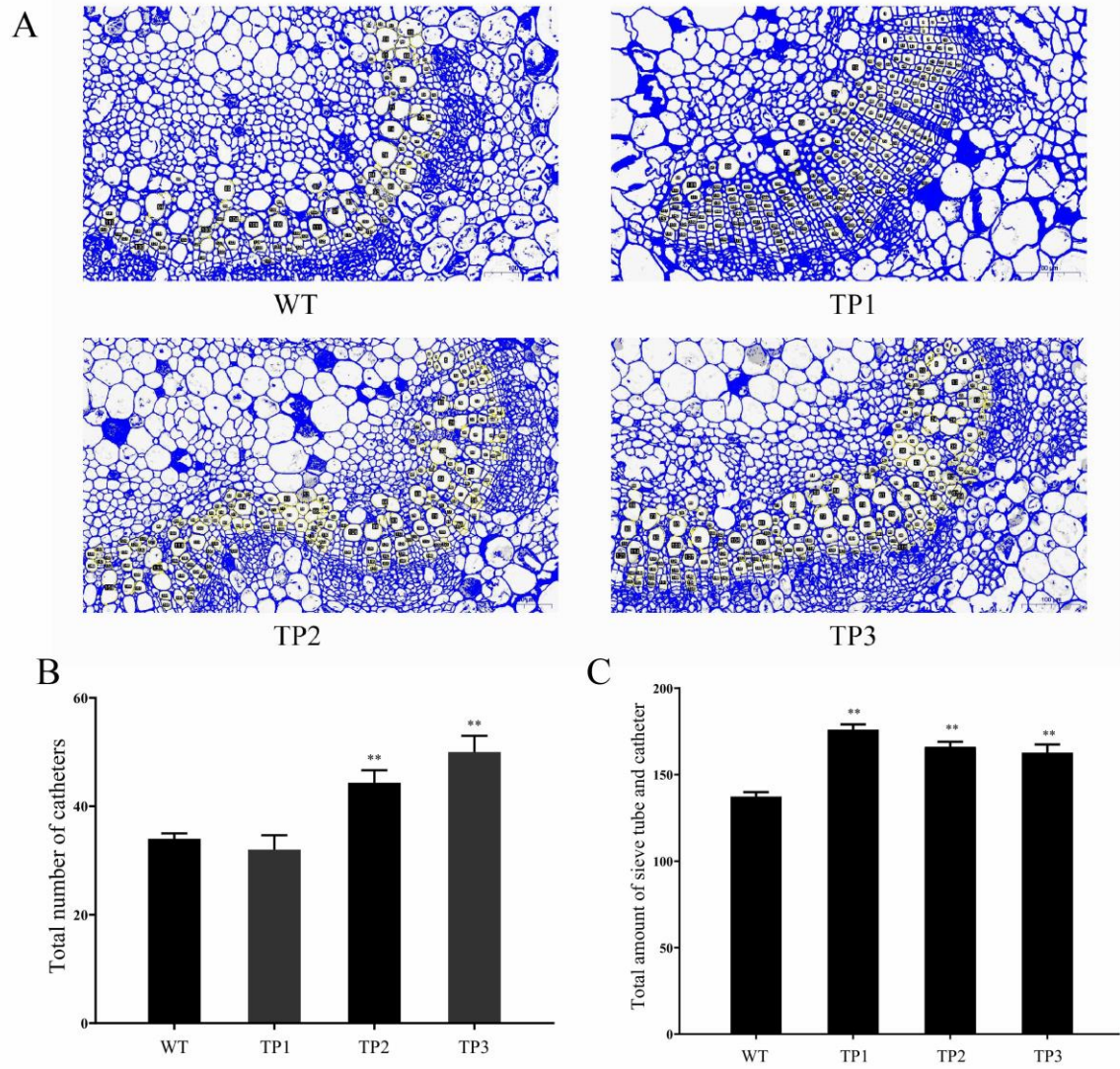


Figure S2. Morphometric analyses with the quantification of petiole cross sections of transgenic lines.
 **P < 0.01

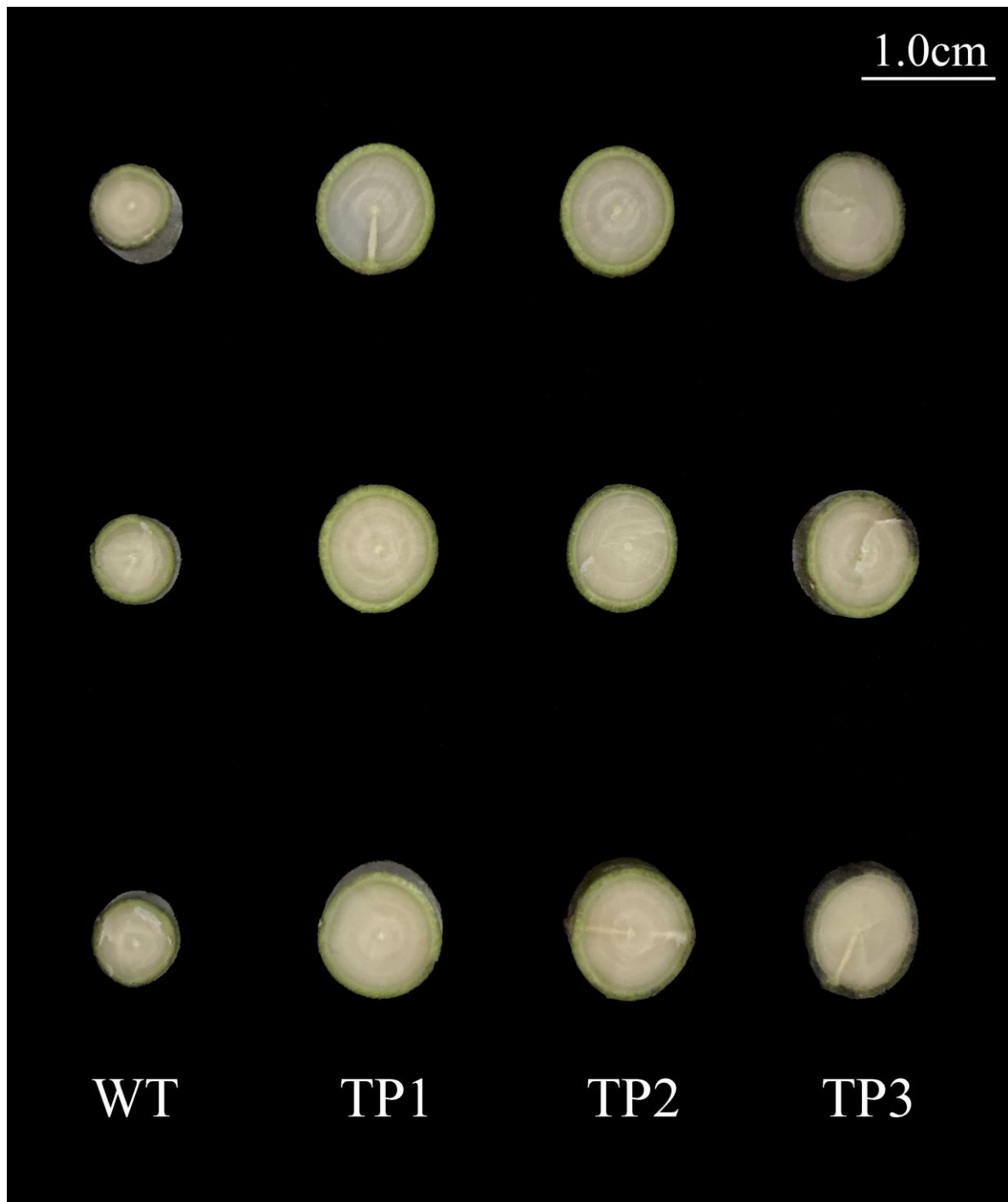


Figure S3. Cross sections of stems from the same parts of 90-d-old wild-type and transgenic plants are shown (lines 1, 2 and 3).

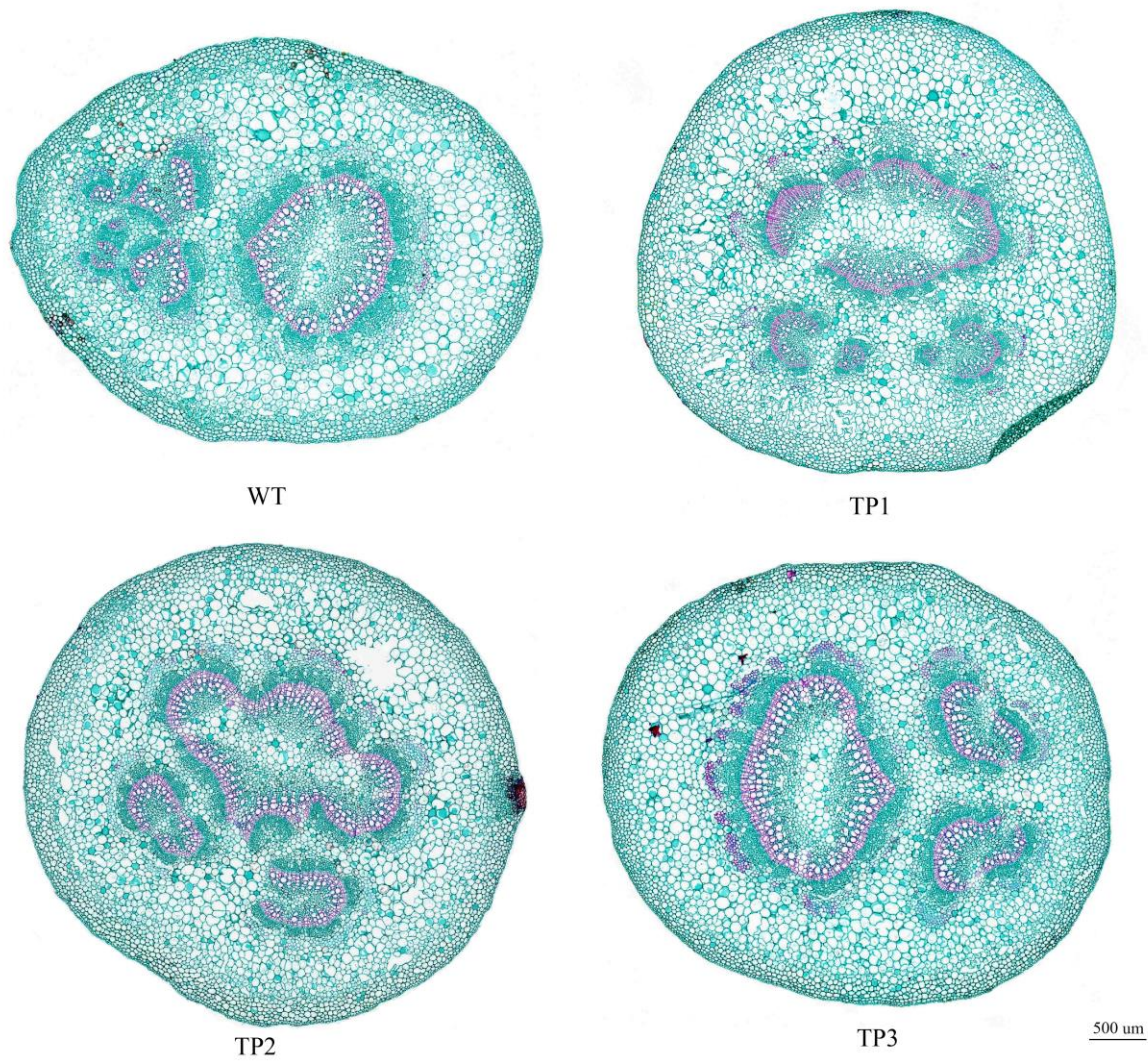


Figure S4. Morphological characteristics of complete petiole cross section of transgenic plants. A. The number of vessels and sieve tubes on the transverse section of petiole of transgenic lines per unit area. B. Number of catheters. C. Total number of conduits and sieve tubes. Error bars represent the SDs from three biological replicates. * and ** indicate significant differences in comparison to WT at $p < 0.05$ and $p < 0.01$, respectively (Student's t-test).

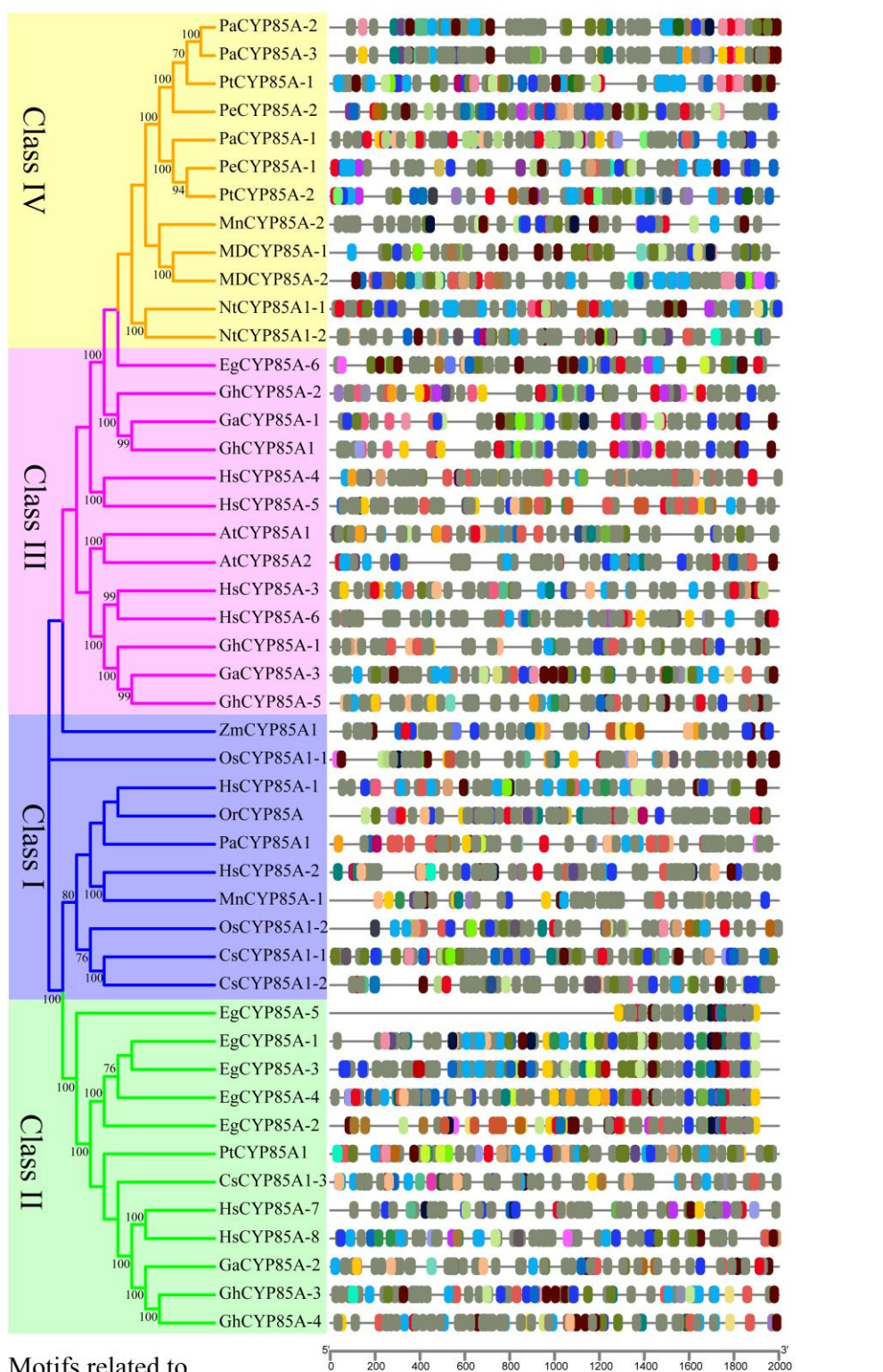


Figure S5. Several cis-acting elements, including light and hormone response and circadian rhythm elements, were present in the *OsCYP85A* promoter