# Evolution of an intron-poor cluster of the CIPK gene family and expression in response to drought stress in soybean

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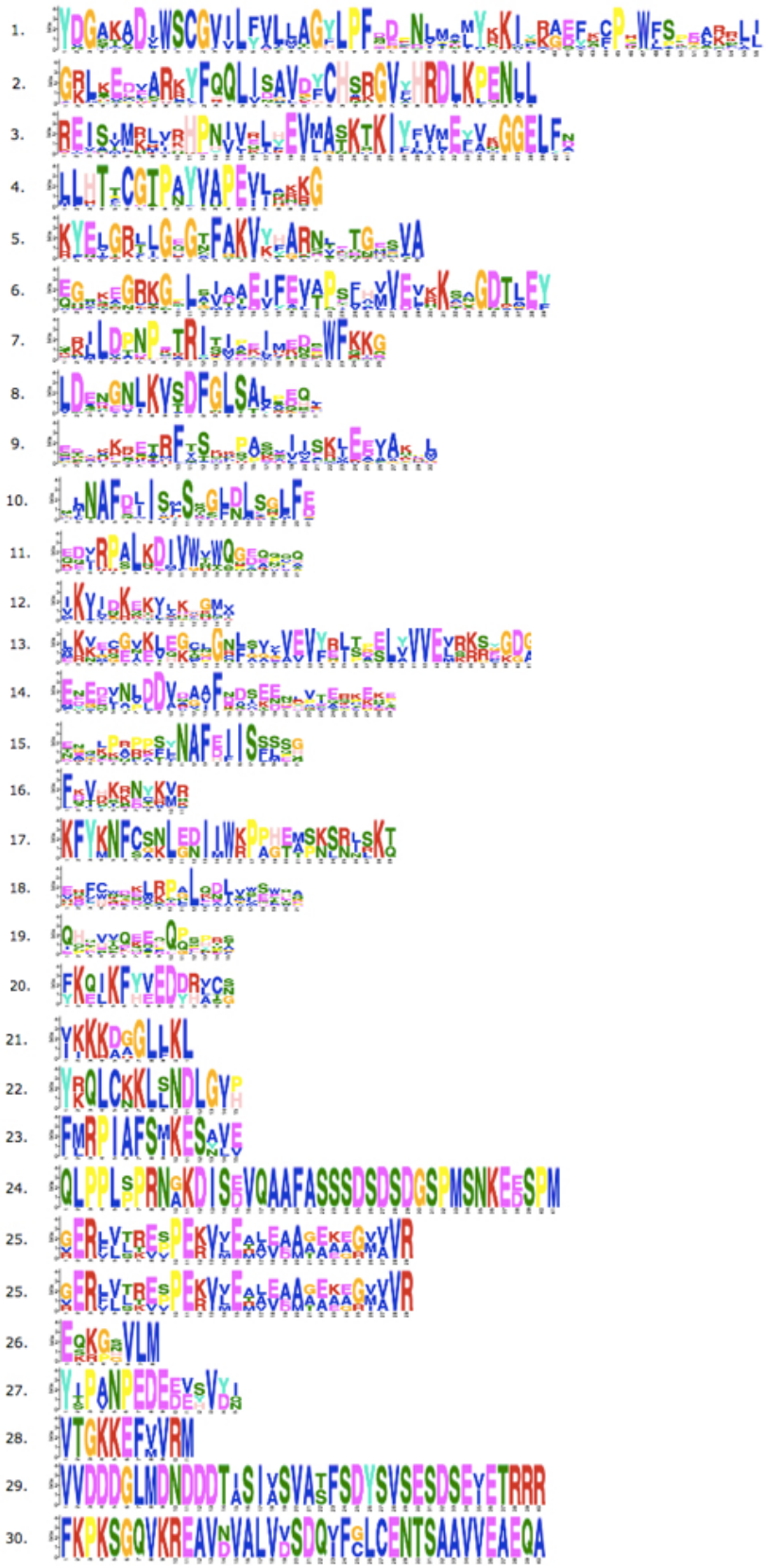
## Supplementary information

**Figure S1.** Schematic diagram presentation of predicted motifs in the 52 soybean CIPK proteins.

**Figure S2.** Drought treatment affected the growth of soybean seedlings and soil water content.

**Table S1.** List of primer sequences used in qRT-PCR assays.

17 Figure S1



18 **Figure S1. Schematic diagram presentation of predicted motifs in the 52 soybean**

19 **CIPK proteins.** Motif prediction was performed using the MEME software suite.

Figure S2

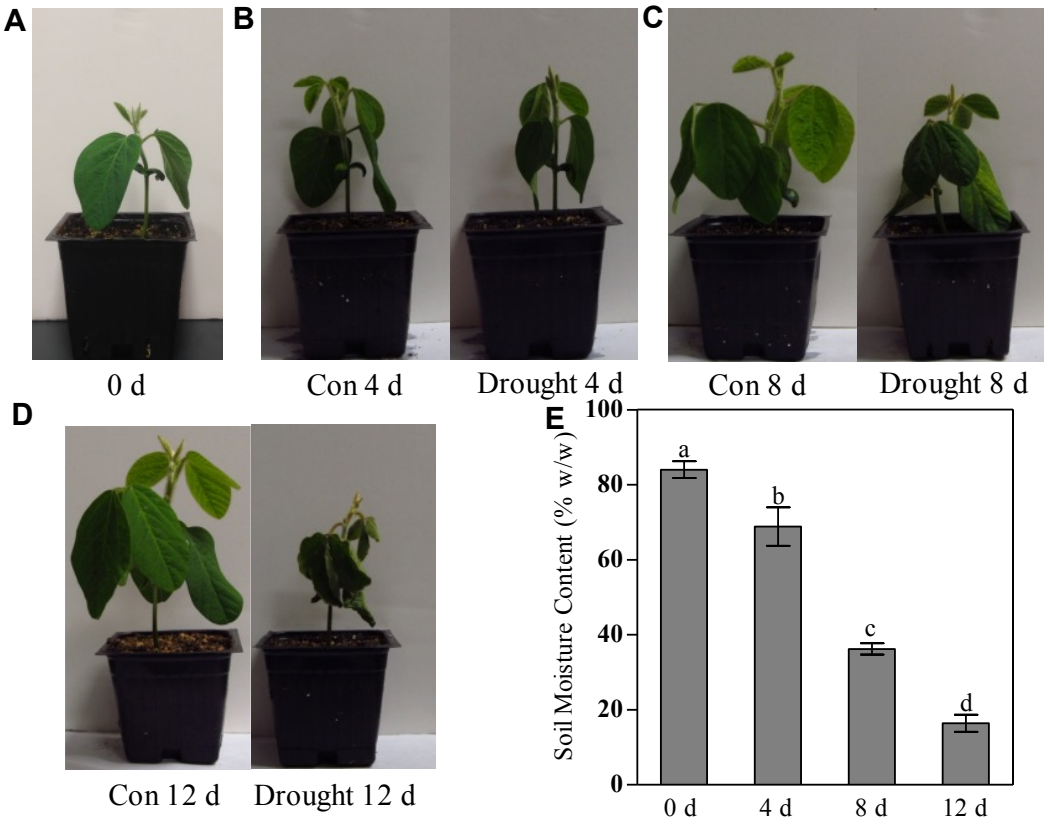



**Figure S2. Drought treatment affected the growth of soybean seedlings and soil water content.** Fifteen-day-old soybean seedlings were imposed to drought stress by withholding water for 0 (control, A), 4 (B), 8 (C), and 12 (D) days. (E) Soil moisture content at 0, 4, 8 and 12 day post drought application. Values are means ± SE of three independent experiments, each with three replicates. Bars with different letters signify statistically significant differences at $P < 0.05$ according to Duncan's multiple range tests.

**Table S1.** List of primer sequences used in qRT-PCR assays.

| Gene | Sequence |
|---|---|
| *GmCIPK2F* | GGAGGTCAAGAAGGACAATG |
| *GmCIPK2R* | TGGGAGGAATTCCAGAAGA |
| *GmCIPK4F* | GGTGGAGGTGAAGAAATCAA |
| *GmCIPK4R* | CTTGCCAAACCCAAACAAC |
| *GmCIPK8F* | TCTTACTACTGCTCGACTTAGA |
| *GmCIPK8R* | CCCTAGAGGTTGCTTAATTCTT |
| *GmCIPK9F* | AATACGCCAAGTTCTGTGAG |
| *GmCIPK9R* | CCCTGACTTGCTCTTTCAC |
| *GmCIPK11F* | GGTGAATCAAAGTTCGAATGTC |
| *GmCIPK11R* | GTCATTCTCCTGCTACCTTAAT |
| *GmCIPK12F* | CTCGAATATGACAGATGGGAAC |
| *GmCIPK12R* | GGATGCTTGGAGCTGTATTT |
| *GmCIPK14F* | TTGTGACGGTGTTTGATTTG |
| *GmCIPK14R* | CCAGCCAACTGAAACTCTAA |
| *GmCIPK20F* | TCTCCGTACGAAGTACAGTC |
| *GmCIPK20R* | ATCCTCCAATACCCACTCTT |
| *GmCIPK22F* | GATTTGGAAGAGCCGGTATC |
| *GmCIPK22R* | ACCCTTGAGTAAACACCAATC |
| *GmCIPK24F* | TGTGGTTGAGGTGTTTGAG |
| *GmCIPK24R* | CATGCCATGAGAGAACAAGA |
| *GmCIPK28F* | GAGAGGTTGAAGCCATTGT |
| *GmCIPK28R* | CTCAGGTTCTTGTTCCTGTT |
| *GmCIPK30F* | CTAGCTATCATAATGCAACATACAC |
| *GmCIPK30R* | TCCTTTCCTTCTCCCAAGA |
| *GmCIPK31F* | ATTGCAGGGTGAGTTTGG |
| *GmCIPK31R* | CTCCACCACAACCAAAGAA |
| *GmCIPK33F* | CACCAGTAACGCAATGGA |
| *GmCIPK33R* | AAGCTTGGAGGAGGAAATAAG |

| | |
|---|---|
| *GmCIPK38F* | CCTACTGATGATTGAAGACTGAG |
| *GmCIPK38R* | GAGAGAGAGAGAGAGAGAAA |
| *GmCIPK41F* | CGCCCTGCAAATGAAATC |
| *GmCIPK41R* | ACCCTTCCTTCCACTCTTA |
| *GmCIPK47F* | TTTGAATGGCTTGGGTTAAATC |
| *GmCIPK47R* | CCTTCCAACTTCCATCCATC |
| *GmCIPK49F* | CCGGCCTCAATCATAATCTC |
| *GmCIPK49R* | TTCCTGCCTTCTTTGGAAC |
| *RSP s20eF* | GATGCCCACTAAGGTTCTTC |
| *RSP s20eR* | GTGCACACGAAGTTCAAATC |

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