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Supplementary Material

Early increased expression of a cyclin-dependant protein kinase (*LtCDKA1;1*) during inflorescence initiation of the long day grass *Lolium temulentum*

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| | (1) | 10 | 20 | 30 | 40 | 50 | 60 | 70 | Section 1 | 81 | | | | |
|-----------|-------|-------|-------|---------------------|---------------------|---------|--------|--------|-----------|-----------|-----------|-------|------|-------|
| CDKAB | (1) | ----- | ME | DTKIEKIGEGTYGVVYKGR | RKTI | IGOVVAM | KKIRLE | SEEGV | PSTAI | REISLLKE | LPHPN | ----- | IVSL | QDDV |
| SpCDKA | (1) | ----- | MEN | YKVEKIGEGTYGVVYKAR | RKLS | GRIVAM | KKIRLE | DESE | GVVPS | TAIREIS | LLKEV | DN | NRS | NCVRL |
| AtCDKA1;1 | (1) | ----- | MDQ | EKVKKIGEGTYGVVYKARD | KVTN | ETIA | KKIRLE | QDE | GVVPS | TAIREIS | LLKE | M | QNS | ----- |
| AmCDKA1;1 | (1) | MVSS | HRSL | HEQ | EKVKKIGEGTYGVVYKARD | KVTN | ETIA | KKIRLE | QDE | GVVPS | TAIREIS | LLKE | M | QNS |
| AmCDKA2;1 | (1) | ----- | ----- | AY | GVVYKARD | ETI | ETIA | KKIRLE | QDE | GVVPS | TAIREIS | LLKE | M | QNS |
| OsCDKA2;1 | (1) | ----- | MEQ | EKVKKIGEGTYGVVYKARD | KVTN | ETIA | KKIRLE | QDE | GVVPS | TAIREIS | LLKE | M | QNS | ----- |
| ZmCDKA1;1 | (1) | ----- | MEQ | EKVKKIGEGTYGVVYKARD | KVTN | ETIA | KKIRLE | QDE | GVVPS | TAIREIS | LLKE | M | QNS | ----- |
| LtCDKA1;1 | (1) | ----- | MEQ | EKVKKIGEGTYGVVYKARD | KVTN | ETIA | KKIRLE | QDE | GVVPS | TAIREIS | LLKE | M | QNS | ----- |
| OsCDKA1;1 | (1) | ----- | MEQ | EKVKKIGEGTYGVVYKARD | KVTN | ETIA | KKIRLE | QDE | GVVPS | TAIREIS | LLKE | M | QNS | ----- |
| OsCDKA1;2 | (1) | ----- | MEQ | EKVKKIGEGTYGVVYKARD | KVTN | ETIA | KKIRLE | QDE | GVVPS | TAIREIS | LLKE | M | QNS | ----- |
| Consensus | (1) | ----- | MEQ | EKVKKIGEGTYGVVYKARD | KVTN | ETIA | KKIRLE | QDE | GVVPS | TAIREIS | LLKE | M | QNS | ----- |
| | (82) | 90 | 100 | 110 | 120 | 130 | 140 | 150 | Section 2 | 162 | | | | |
| CDKAB | (70) | EM | DSR | ELDFE | ELSD | LKK | ELDS | IR | FG | ----- | QY | MD | S | S |
| SpCDKA | (74) | EA | ES | SK | LV | FE | EL | DM | DL | KK | HM | DR | IS | E |
| AtCDKA1;1 | (70) | VH | SE | K | R | L | V | FE | EL | DM | DL | KK | HM | DR |
| AmCDKA1;1 | (78) | VH | SE | K | R | L | V | FE | EL | DM | DL | KK | HM | DR |
| AmCDKA2;1 | (57) | VH | SE | K | R | L | V | FE | EL | DM | DL | KK | HM | DR |
| ZmCDKA1;1 | (70) | VH | SE | K | R | L | V | FE | EL | DM | DL | KK | HM | DR |
| LtCDKA1;1 | (70) | VH | SE | K | R | L | V | FE | EL | DM | DL | KK | HM | DR |
| OsCDKA1;1 | (70) | VH | SE | K | R | L | V | FE | EL | DM | DL | KK | HM | DR |
| OsCDKA1;2 | (69) | VH | SE | K | R | L | V | FE | EL | DM | DL | KK | HM | DR |
| Consensus | (82) | VH | SE | K | R | L | V | FE | EL | DM | DL | KK | HM | DR |
| | (163) | 153 | 170 | 190 | 190 | 200 | 210 | 220 | 230 | 243 | Section 3 | | | |
| CDKAB | (148) | GL | AR | AF | CG | DI | RV | TE | H | V | T | L | W | Y |
| SpCDKA | (154) | GL | AR | AF | CG | DI | RV | TE | H | V | T | L | W | Y |
| AtCDKA1;1 | (148) | GL | AR | AF | CG | DI | RV | TE | H | V | T | L | W | Y |
| AmCDKA1;1 | (156) | GL | AR | AF | CG | DI | RV | TE | H | V | T | L | W | Y |
| AmCDKA2;1 | (135) | GL | AR | AF | CG | DI | RV | TE | H | V | T | L | W | Y |
| OsCDKA2;1 | (148) | GL | AR | AF | CG | DI | RV | TE | H | V | T | L | W | Y |
| ZmCDKA1;1 | (148) | GL | AR | AF | CG | DI | RV | TE | H | V | T | L | W | Y |
| LtCDKA1;1 | (148) | GL | AR | AF | CG | DI | RV | TE | H | V | T | L | W | Y |
| OsCDKA1;1 | (147) | GL | AR | AF | CG | DI | RV | TE | H | V | T | L | W | Y |
| OsCDKA1;2 | (147) | GL | AR | AF | CG | DI | RV | TE | H | V | T | L | W | Y |
| Consensus | (163) | GL | AR | AF | CG | DI | RV | TE | H | V | T | L | W | Y |
| | (244) | 244 | 250 | 260 | 270 | 280 | 290 | 300 | 312 | Section 4 | | | | |
| CDKAB | (229) | PG | V | S | L | P | D | Y | K | S | A | F | P | K |
| SpCDKA | (235) | PG | V | S | L | P | D | Y | K | S | A | F | P | K |
| AtCDKA1;1 | (229) | PG | V | S | L | P | D | Y | K | S | A | F | P | K |
| AmCDKA1;1 | (237) | PG | V | S | L | P | D | Y | K | S | A | F | P | K |
| AmCDKA2;1 | (216) | PG | V | S | L | P | D | Y | K | S | A | F | P | K |
| OsCDKA2;1 | (229) | PG | V | S | L | P | D | Y | K | S | A | F | P | K |
| ZmCDKA1;1 | (229) | PG | V | S | L | P | D | Y | K | S | A | F | P | K |
| LtCDKA1;1 | (229) | PG | V | S | L | P | D | Y | K | S | A | F | P | K |
| OsCDKA1;1 | (228) | PG | V | S | L | P | D | Y | K | S | A | F | P | K |
| OsCDKA1;2 | (228) | PG | V | S | L | P | D | Y | K | S | A | F | P | K |
| Consensus | (244) | PG | V | S | L | P | D | Y | K | S | A | F | P | K |

Fig. S1. Comparison of the predicted amino acid sequence for *Lt;CDKA1;1* with *CDKA* transcripts from other species. Predicted amino acid sequences of *CDKA* kinases: yeast *SpCDKA* (*Schizosaccharomyces pombe*, M12912); human *CDKA8* (P06493); *Arabidopsis thaliana* *AtCDKA1;1* (X57839); snapdragon *AmCDKA1;1* (X97637) and *AmCDKA2;1* (X97638); rice *OsCDKA2;1* (X60374); maize *ZmCDKA1;1* (M60526); *Lolium* *LtCDKA1;1* and rice *OsCDKA1;1* (X60375). Accession Numbers are in brackets. Dashes indicate gaps to maximise alignment. Amino acids that are identical in five or more of the proteins are blocked while those which are similar are shaded.

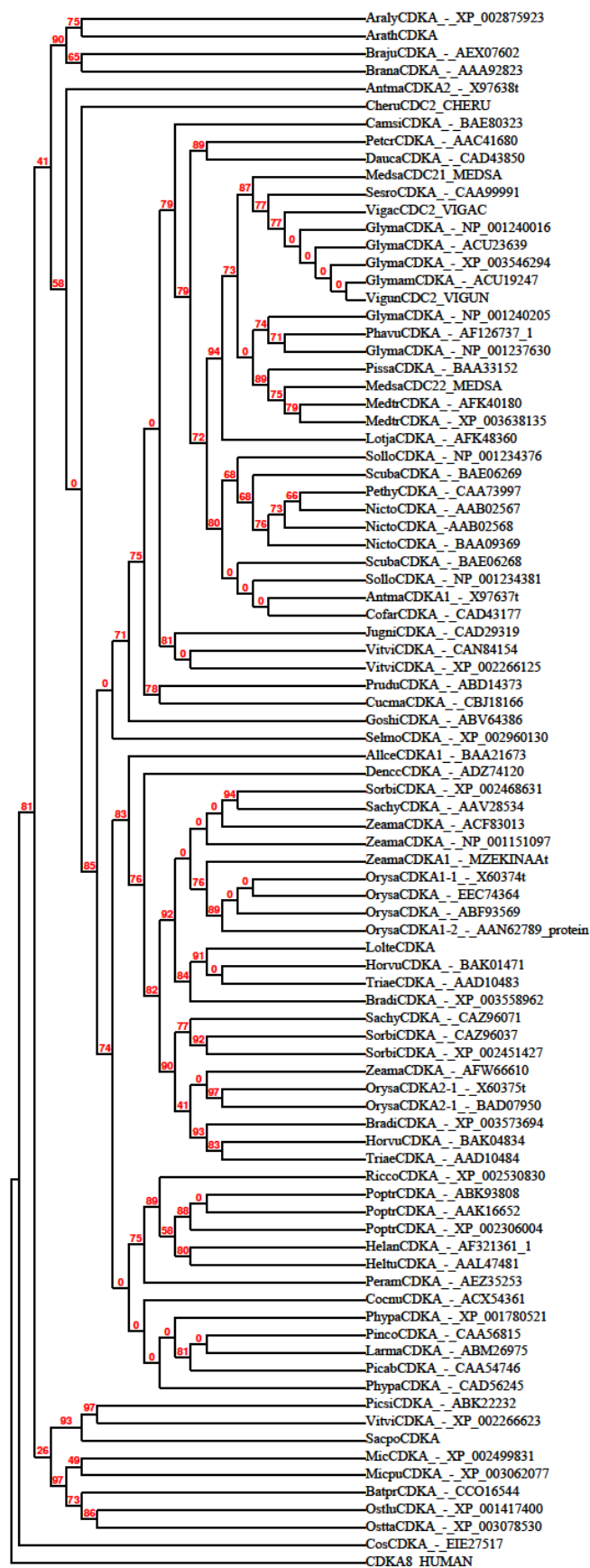


Fig. S2. A phylogenetic comparison of 88 plant CDKA kinases and particularly of monocotyledons. This analysis was performed using the web tools available at www.phylogeny.fr/version2cgi/simple_phylogeny.cgi. For all fully sequenced Gramineae genomes, there are two CDKA protein types. This is the case for *Brachypodium*, *Oryza*, *Zea*, *Triticum*, *Sorghum* and *Saccharum* and is expected to be the case for *Lolium*. Onion (Allce) and *Dendrobium* (Denc) are the outgrouping monocots. Human CDKA was used as the outgroup. Abbreviated species names are shown along with Accession Numbers. (For method see Dereeper A., Guignon V., Blanc G., Audic S., Buffet S., Chevenet F., Dufayard J.-F., Guindon S., Lefort V., Lescot M., Claverie J.-M., Gascuel O. Phylogeny.fr: robust phylogenetic analysis for the non-specialist. *Nucleic Acids Research*. 2008 Jul 1; 36 (Web Server Issue):W465-9. Epub 2008 Apr 19.)