



ATT GAA GCT GAT ATG TGG AGT ATA GGT GTG ATT GCA TAT ATT CTA TTG AGT GGA AGC CGA 2466  
781 I E A D M W S I G V I A Y I L L S G S R 800  
CCG TTT TGG GCT AGG ACA GAA TCA GGA ATC TTT CGT GCT GAT AAT AAT CTT TTG AAT AAT 2526  
801 P F W A R T E S G I F R A D N N L L N N 820  
AAA GAG GAC CAT CCT AAA TGG TGG CCT TCA GTG TCT GCA GAG GCA AGA GAT TTT GTA AAG 2586  
821 K E D H P K W P S V S A E A R D F V K 840  
CGG CTT AAT AAA GAC CAT CCG CGT AAA AGA ATG ACA GCT TCT CAA GCC TTA AGT CAT CCA 2646  
841 R L N K D H P R K R M T A S Q A L S H P 860  
TGG TTA AGG ACG TCA AAC GAC GCA AAG GTT CCA TTA GAT ATT CTG ATT TTC AAA CTT ATG 2706  
861 W L R T S N D A K V P L D I L I F K L M 880  
AGA GCT TAT TTA CGA TCA TCA TCT CTC CGT AAA GCT GCA TTA AAA GCT TTA TCG AAA ACA 2766  
881 R A Y L R S S S L R K A A L K A L S K T 900  
CTT ACG GTT GAT GAA CTG TTT TAT CTG AAG GAG CAG GCC AAA GCC CTG AAA AAG TGG CGT 2826  
901 L T V D E L F Y L K E Q A K A L K K W R 920  
ATG ATG GCT CGT AAA AAG AAA GCT GTT TCT CAT AAA TCA ACG GTG GTG TCA GTT ATG CAT 2886  
921 M M A R K K A V S H K S T V V S C M H 940  
CTG AAG GAG CAG TTT GCT TTG TTA GAA GAA TCT TCT GAT ACG AAT TCC TCC ATT GAT GAA 2946  
941 L K E Q F A L L E E S S D T N S S I D E 960  
ACG AAA GTG AAG CAA GAC ATC AAA GCT GGC GCT TAT GAG TTT CCT AGT CCT ACG GCA ACG 3006  
961 T K V K Q D I K A G A Y E F P S P T A T 980  
AGG GCT CAA TTC TTA GAA CCG AAA TCA CTC AAC AAT TTT CTT ACT AAA CAA ATG ACT GAT 3066  
981 R A Q F L E P K S L N N F L T K Q M T D 1000  
GCC ATG ATC GAT GAA CTC GCT TCG GAA CTC CCG CTC AGC CCA AGC CTT CAC GAT CAC GCT 3126  
1001 A M I D E L A S E L P L S P S L H D H A 1020  
AGA CAT CAC GAT TGG CTT GGC CTT AGT GAT GGG AAG CTT AAT TTT CTC GGA TTT GTG AAA 3186  
1021 R H H D W L G P S D G K L N F L G F V K 1040  
TTC CTA CAT GGT GTG ACC AGC CGC TCG ATC AAA ACC CAT AGC CAT CAT GCT CCA ACT GGA 3246  
1041 F L H G V T S R S I K T H S H H A P T G 1060  
ACG AGA ACC TGT AAT TCT CGC CAG GAT TTC ACC GAC ACA AAG GAT GAG CCA GAC ACA AGC 3306  
1061 T R T C N S R Q D F T D T K D E P D T S 1080  
AGA GAA GAT CAT AAT CCA AAA AGC CAC AAT GGG AGA AAT TTT TGC AGA GAT GAT GCT GTC 3366  
1081 R E D H N P K S H N G R N F C R D D A V 1100  
GAA GCA AAG AAC AGC TCA AAT TCT ACA GAG GAG AGC TTG ACA AAT CAT GAC ATG AGT GAA 3426  
1101 E A K N S N S T E E S L T N H D M S E 1120  
GAT GGA AAA ATG TTT GAT CAA ACA AAG CCG AAT ACT ATC ATC ACA GAA GAA GAG AGA GCA 3486  
1121 D G K M F D Q T K P N T I I T E E R A 1140  
CTT CCT TTA GAA GCT GCC AAG AAC AAA CCT GAG CCT AAA CCA CAA AAG TCA AAA AAC TGG 3546  
1141 L P L E A A K N K P E P K P Q K S K N W 1160  
AGC AAG CTG AAG AAG TTG CAG CTT CTG CCT CCT ACA CCT GAT CTA CTG CCT GAA CCT GAA 3606  
1161 S K L K K L Q L L P P T P D L L P E P E 1180  
ACA GTG GAT TTA AGG CAC CAA ATG ACA GAT GAG AGA AAA AAA GCA GAA AAA TGG ATG CTT 3666  
1181 T V D L R H Q M T D E R K K A E K W M L 1200  
GAT TAT GCA ATG CAG CAT ATA GTC ACC ACA CTA ACT CCA GCC AGG AAA AAC CTC CTC AAG 3726  
1201 D Y A M Q H I V T T L T P A R K N L L K 1220  
AGA TCA ATC AAG GCA CTG GAA AAA GCT AGG AAA TTT AAT CCA CGA GCA CCT AAA CTC ATA 3786  
1221 R S I K A L E K A R K F N P R A P K L I 1240  
CGA GAG GCA GTT AAC GAG ATC CTT ACA ACG CCA ATT CAA GAT GAT TCA TCT GAT ACA GAC 3846  
1241 R E A V N E I L T P I Q D D S S D T D 1260  
ATA ACC ATG GAC CAG GAG TTC TCA GAA ATG GAA AGA GTG GCG ATG CTT GTG GAA GCA TTC 3906  
1261 I T M D Q E F S E M E R V A M L V E A F 1280  
GAA GCA GTT GTT CCA CTC CCA GAA ATA ATG ACG GCG CCA TGC TGC TTG TAT GAA GCA AGC 3966  
1281 E A V V P L P E I M T A P C C L Y E A S 1300  
TGC CCA GGT TCT CCA TTG CTG CGA GTA AAA CCT AAA AGT ATG GCG GAG TTT GCT TGC TAT 4026  
1301 C P G S P L L R V K P K S M A E F A C Y 1320  
GAA GTC TTC GGA ACT GAG AGG CCA CAA ACT TCA AAT AAT CGG ACA CTA GAG CAA ATG CTT 4086  
1321 E V F G T E R P Q T S N N R T L E Q M L 1340  
CAA CTT ATG AGA GCG CTT GGA CAG TTC GGG TTG AAA TTG GGA GGT TAT TTG AGG GAG AGA 4146  
1341 Q L M R A L G Q F G L K L G G Y L R E R 1360  
GGA TCC AAA GCC CAA GTA AGA AAG CTT TTT TCC AAA AAA ATA ACC AGC TTT GAA AAA ATC 4206  
1361 G S K A Q V R K L F S K K I T S F E K I 1380  
CAG AGT ATC CGG CCG AGA GCA AAA AGT GTA GCT AAT GTT GAA ACT GTT AAA TCG GCC GGT 4266  
1381 Q S I R P R A K S V A N V E T V K S A G 1400  
TCA GTT GAC GTG AAG CCG TTG GAG ACT AGT GGC CGG TCA GAG TCA TAG AGC GGC AAT GAT 4326  
1401 S V D V K R L E T S G R S E S \*  
AAT GAT GGG CTT ATT GGG CTT TAC ACG TAT GCT TAA TGG GCC CAC ATT TTG TTT CGT TAG 4386  
GCC GTA ATT TCA GGC CTA TTT GGC CCA CCA CAA GTA TAA ACA AAC AGC TAT ACA ATT CCA 4446  
CCA TTT GAT ATT TCA TTC TTT AAA TTT TGA CAA AAT ATA TAT TCA AAT TCA AGT TGT TAT 4506  
GCA CGT TGA ATT TAG TAT TAT TTT GAG ATA GAG AGT AAT CCA CTT GTT TAT ACG AAT TAT 4566  
TTG GTA CAT GAA TTT TCT ACT TTC TGC CCA TTT AAA ATA ATA AAA GCA GTA TTA TAT ATG 4626  
TAT AGG TTG TTC ATG GAA ATA GAC GAC ATG GCT TCC ACT ATA TCA ATC AAA CCA AAT CAA 4686  
TGA GAC GGG CAT ATT TTA GAC AAA GGA TAA TGG GGA AAG TAC ACA GAT AGT TAT TTT TCA 4746  
GGC CGC TAT TTA GAG ATC AGT CAG TAC GTA TTT TAT CCT AAA AAT TTG AAC TAA AAA ACT 4806  
TAT TTC GGA ATT TTG TGT CTC AAA AAT GAT TAA AAA AAA A 4846

**B.**

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1 ----- AtCDPK3
1 ----- soybean CDPK
1 ----- lily CCaMK
1 ----- AtCRK5
1 ----- CaMK II a-subunit
1 ----- maize MCK1
1 ----- NtCBK2
1 ----- NtCaMK1
1 MSLQSHLENSVVCADTDQTLIPDDEQHVKKS PENFLDLPPESFWIPKDSEQDWF DENATIQRMTSMMKLG

1 ----- AtCDPK3
1 ----- soybean CDPK
1 ----- lily CCaMK
1 ----- AtCRK5
1 ----- CaMK II a-subunit
1 ----- maize MCK1
1 ----- NtCBK2
1 ----- NtCaMK1
71 FFGKANHHKSF SHRSFTSTL FNHHQKPKSTSLFALPQSKKTSSTEGNLKQKVPKSLFRSRSEPRKGI

1 ----- AtCDPK3
1 ----- soybean CDPK
1 ----- lily CCaMK
1 ----- AtCRK5
1 ----- CaMK II a-subunit
1 ----- maize MCK1
1 ----- NtCBK2
1 ----- NtCaMK1
141 RHVREPGSPKVCIGRVDYALQKAISQLAPTQQRKVELLIKAFETVVPQGDNSQVAFPKLFVSRGKEG

1 ----- AtCDPK3
1 ----- soybean CDPK
1 ----- lily CCaMK
1 ----- AtCRK5
1 ----- CaMK II a-subunit
1 ----- maize MCK1
1 ----- NtCBK2
1 ----- NtCaMK1
211 RASSEHLQKTNKENEEWMLAGDTGKIAEKVISRSKKDRGIRTFGWKKLRNLIKIRPRAKSVANVETVK

1 ----- AtCDPK3
1 ----- soybean CDPK
1 ----- lily CCaMK
1 ----- AtCRK5
1 ----- CaMK II a-subunit
1 ----- maize MCK1
1 ----- NtCBK2
1 ----- NtCaMK1
281 SAGSVDKRLETSSGRSESMGLCTSKPGIDSKCEEKDIQPSIPRQKLEVC SKYKDDDSASKDEVLVEAKA
          MGLCTSKP
          MGQCYGKARG
          MGACTSKP

1 ----- AtCDPK3
1 ----- soybean CDPK
1 ----- lily CCaMK
1 ----- AtCRK5
1 ----- CaMK II a-subunit
1 ----- maize MCK1
1 ----- NtCBK2
1 ----- NtCaMK1
351 QKEDKQFNKETS SVVSAKQEDSSNDEKAPKAVRGFSLLLAMQKQKSNDESDAASQNKQVRNYISMWHMK

1 ----- AtCDPK3
1 ----- soybean CDPK
1 ----- lily CCaMK
1 ----- AtCRK5
1 ----- CaMK II a-subunit
1 ----- maize MCK1
1 ----- NtCBK2
1 ----- NtCaMK1
421 SQKKDEDNSHVLSQEDSNVASSVGNELLDGDKTDDEVSNSDSPVARN SPLPASEFYSPSVKPSSSSVNNS
          MRRN
          MAAKSSSSS
          NSSNSDOTPARNSPLPASE
          SVKPSSSSVNG
          ASSRADHDADPSGAGSVAPPS
          PLPANGAPLPAT
          SNFSVDDITVAGDGAIFPVK
          SGPSNDDVDN

5 -----VDNQ-----SYVVLGHKTPNIR----- AtCDPK3
10 -----TTTNVVTLK-----AAWVLPQRTQNI----- soybean CDPK
1 -----MSRHESRKL----- lily CCaMK
39 ---EDQCVTTTNNEGKSPFFFFYSPPAHYFFSKKTPARSPATNS-TNSTPKRFF-----KRPF AtCRK5
1 -----MATITCTRFT----- CaMK II a-subunit
44 P--RRHKSGSTPVHHHQAAATFGAAAWPSPYPAGGASPLPAGVSPSPARSTPRRFF-----KRPF maize MCK1
39 ---SHQTKNDEFSVGGKSPFFFFYSPPAHYLFSSKSPATN--AS-SNSTPMRFF-----KRPF NtCBK2
491 TPGEDQCVTTTNNEGKSPFFFF---SPAHYFFSKVKPKTPARSPA-TNPT-KRFFGFSGFKSKSTAKRPF NtCaMK1

22 ----- AtCDPK3
32 ----- soybean CDPK
11 ----- lily CCaMK
95 PPPSPAKHIRAVLARRHGSVKPNSSAIEPGSE---AEGGGVG-----LDKSFSGFSKSF AtCRK5
11 ----- CaMK II a-subunit
102 PPPSPAKHIKATLAKRLGGGKPKEGTIP EEGGAGAGAGAGAGAAVGAADS AEA DRPLDKTFGFAKNFG maize MCK1
92 PPPSPAKHIRSLLARRHGTVKPNESAIEPGNESEVGDGGGAG-----LDKSFSGFSKNEFV NtCBK2
555 PPPSPAKHIRAVLARRLG---SNSSAIEGAK---AEGGGVG-----LDK----- NtCaMK1

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22 DLYTLSRKLGQGGQFGTTYLC~~TDIAT~~---GVDYACKSISK-----RKLISKE AtCDPK3  
32 EVYEVGRKLGQGGQFGTTFECTRRAS---GGKFACTSIPK-----RKLCKE soybean CDPK  
11 DDYEVVDVLGKGGFSVRRGISKSRG-KNNDVAIKTLRRYGYTLPGAQRSQPGQRLSPLGMPTLKQVSV lily CCaMK  
146 SKYELGDEVGRGHFGYTCAAKFKKGDNKGQQVAVKVIK-----AKMTTAT AtCRK5  
11 BEYQLFEELGKGAFSVRRCKVLAG-QEY--AAKIIN-----TKKLSAR CaMK II a-subunit  
172 AKYDLGKEVGRGHFGHTCSAVVKKGEHKGHTVAVKIISK-----AKMTTAT maize MCK1  
146 NKYEMGEEVGRGHFGYTCAKAFKKGVEVKGQVAVKVIK-----SKMTTAT NtCBK2  
595 -KGRKG-EVGRGHFGHTCWA~~KFKK~~GELKNPQVAVKIISK-----AKMTTAT NtCaMK1  
  
65 DVEDVRREIQIMH---HLAGHKNIVTKGAYEDPLYVHVIELCAGGELFDRIIHRG-HYSERKAAE-L AtCDPK3  
139 IKTIVEVVEACHSLGVMHRDLKPENLFDTIDEDAKLKATDFGLS-VFYKPGESFCDVVGSPYYVAPEVL soybean CDPK  
80 SDALLTNEILVMRRIVEDVSPHPNVIHLHDVYEDANGVHLVLELCSGGELFDRIVAQD-RYSESEAAE-V lily CCaMK  
192 AIEDVRREVVKILR---ALSGHNNLPHFYDAYEDHDNVYIVMELCEGGELLDRI~~LSRGGKYTEEDA~~KT-V AtCRK5  
53 DHQKLEREARICR---LLKHPNIVRLHDSISEEGHYLIFDLVTGGELFEDIVARE-YYSEADASH-C CaMK II a-subunit  
218 SIEDVRREVVKILK---ALSGHNDLVRFYDACE~~DALNVYIVMELCEGGELLDRI~~LARGGRYTEEDA~~KA~~-I maize MCK1  
192 AIEDVRREVVKILR---ALTGHNNLVKFYDAYEDPNNVYIVMELCEGGELLDRI~~LSRGGKYTEEDA~~KS-V NtCBK2  
639 AIEDVRREVVKILK---ALSGHQNLVRFYDAYEDVNNVYIVMELCEGGVLLDRI~~LSRGGKYTEEDA~~KSIV NtCaMK1  
  
129 TKIIVGVVPECHSLGVMHRDLKPENFLLVNKDDDFSLKAIDFGLS-VFFKPGQIFKDVVGSPPYYVAPEVL AtCDPK3  
139 IKTIVEVVEACHSLGVMHRDLKPENLFDTIDEDAKLKATDFGLS-VFYKPGESFCDVVGSPYYVAPEVL soybean CDPK  
148 VQQTIASGLAALHKSTIIHRDLKPENCLFNLQEKRTLKI~~MD~~FGLS-SVEDFTDPIVALFSGSIDYVSPEAL lily CCaMK  
257 MIQILNVVAFC~~HLQGVVHRDLKPENFLFTSKEDT~~SQ~~LKAID~~FGLS-DVYRPDERLNDIVGSAYYVAPEVL AtCRK5  
116 IQQILEA~~VHLCHQGVVHRDLKPENLLASL~~KLGA~~AVKLAIEV~~GEQQA~~WFGFAGT~~PGYLSPEVL CaMK II a-subunit  
283 IVQILSVVAFCHLQGVVHRDLKPENFLFTTRDESAPMKLIDFGLS-DFIRPDERLNDIVGSAYYVAPEVL maize MCK1  
257 MIQILKVVAFC~~HLQGVVHRDLKPENFLFTSKED~~NAQLKAIDFGLS-DFVYK~~PDERLNDIVGSAYYVAPEVL~~ NtCBK2  
705 VIQILNVVAFC~~HLQGVVHRDLKPENFLFTRKEE~~DA~~PQKVID~~FGLS-DFIRP~~DQRLNDIVGSAYYVAPEVL~~ NtCaMK1  
  
198 LKHYPG--EADVWTAGVILYILLSGVPPFWAETQQGIFDAVLKGYIDFD~~TD~~PF--W~~PF~~VISDSAKDLIRKML AtCDPK3  
208 RKLYGP--ESDVWSAGVILYILLSGVPPFWA~~ESEPGIF~~ILLGL~~LD~~DFHSE~~P~~--W~~PS~~ISDSAKDLIRKML soybean CDPK  
217 SQRQVS--SASDMWSLGVILYILLSGCPPFHAPS~~NREKQ~~ORILAG~~DF~~SFE~~HT~~--W~~KTIT~~SSAKDLISSLL lily CCaMK  
326 HRSYT--EADIWSVGVIVYILLCGSRPFWARTESGIFRAVLKAD~~PS~~FD~~DP~~--W~~PL~~LSSEARD~~FV~~KRL AtCRK5  
186 RKDPYG-KPVDLWACGVILYILLVGYPPFWD~~EDQHRLYQ~~IKAGAY~~DF~~PS~~PE~~--W~~DTVT~~PEAKDLINKML CaMK II a-subunit  
352 HRSYM--EADIWSGIVITYILLCGSRPFWARTESGIFRSVLRAD~~PN~~FD~~DS~~E--W~~PS~~VSAEAKDFVKRFL maize MCK1  
326 HRSYT--EADVWSIGVIAYILLCGSRPFWARTESGIFRAVLKAD~~PS~~F~~DE~~Q~~P~~--W~~PTL~~SSEAKDFVKRLL NtCBK2  
774 HXSYSVP~~IEADM~~WSIGVIAYILLSGSRPFWARTESGIFRAD~~NNLN~~NKED~~HPK~~W~~WPS~~VSAEARD~~FV~~KRLN NtCaMK1  
  
264 CSSPSERLTAHEVLRHPWICENGVA~~PARALDPAVLS~~R~~LKQFSAMNKLK~~MAL~~KVIAESL~~SEEEIAGL~~RAM~~ AtCDPK3  
274 DQNPKTRLTAHEVLRHPWIVDDNIAPDKL~~ESAVLSR~~LK~~QFSAMNKLK~~MAL~~RVIAERL~~SEEEIGL~~KL~~ soybean CDPK  
284 SVDPYKRPTANDLLKHPWVIG-~~DSAKQ~~ELIEPEVVSRL~~RSFN~~-AR--RKLRAAAIASVLS~~SKVLL~~RT~~KKL~~ lily CCaMK  
392 NKDPRKRLTAAQALSHPWIKDSNDA-KVEMDILVFKLMRAYLRSSSLRKAALRALSKTLTVDEL~~FYL~~REQ AtCRK5  
253 TINPSKRITAAEALKHPWISHRSTVASC~~MHRQETV~~DCL~~KKFN~~-AR--RKLKGA~~IL~~TMLATRN~~FSG~~KSG CaMK II a-subunit  
418 NKDYRKRMTAVQAL~~THP~~WRDEQ-R-QIPLDILIFRLV~~KQYLRAT~~PLKRLAL~~KALS~~KALSEDELLYLRLQ maize MCK1  
392 NKDPRKRMTAAQALGHPWIKNSHM-EEPLDILIFKLMKAYMRSSALRKAALRALSKTLTVDEL~~FYL~~KEQ NtCBK2  
844 KDHPRKRMTASQALSHPWLR~~T~~SNDA-KVPLDILIFKLMRAYLRSSSLRKAAL~~KALS~~SKTLTVDEL~~FYL~~KEQ NtCaMK1  
  
334 FEAMD-----TDNSGAI~~T~~FD~~EL~~KAGLRK-----YGSTLES-TEIH~~DL~~MDA--ADVDNSGTID-YSEFIAA AtCDPK3  
344 FKMID-----TDNSGTIT~~F~~DELK~~DL~~KLR-----VGSELME-SEIK~~DL~~MDA--ADIDKSGTID-YGEFIAA soybean CDPK  
350 KNLLG-----SHDMKSELENLRAHF~~KRICANGDNATL~~PEFEEVLKAM~~MNSLI~~PLAPRV~~DL~~FDN~~NRD~~G lily CCaMK  
461 FALLE-----PSKNGTISLENI~~K~~SALMK-----MATDAMKDSRIPE~~FL~~GQ--LSALQYRRMD-~~FE~~EFCAA AtCRK5  
320 GNKK-----NDGVKESSE~~TNTT~~IE-----DEDTKVRKQEI~~IKVTEQ~~-LIEA~~ISNGDF~~ESYTKMCDP CaMK II a-subunit  
486 FKLLE-----PRDGFVSLDN~~FRTALTR~~-----YSTDAMRESRVLE~~FQHA~~--LEPLAYRKMD-~~FE~~EFCAA maize MCK1  
461 FALLE-----PNKNGTISFNNI~~K~~TALMK-----HATDAMKEARMH~~DF~~LAS--L~~NAL~~QYRRMD-~~FE~~EFCAA NtCBK2  
913 AKALKKWRMMARKK~~KA~~VSHKSTV~~V~~SCMH-----LKEQFALLEESS~~DT~~NSS--IDETKVK-----QDIKAG NtCaMK1  
  
390 TIHLNKL-----REEHLVSAFYFDKDGSGYITIDELQ~~QSCIEHG~~-----MTD-VFLEDII AtCDPK3  
400 TVHLNKL-----REENLVSAF~~SYFDKDGSGYITID~~ELIQACKDFG-----LDD-IHIDDMI soybean CDPK  
415 TIDMREILCGLSNL~~RNSQGDALQ~~LCFQ~~MYDADRSGCISKEELASMLRALP~~-EDCVPADITE~~PGKL~~DEIF lily CCaMK  
518 ALSVHQLEA---T---DRWEQHARCAYELFEKEGNR~~PTIM~~DELAS---ELG-----LGPSV~~VH~~AVL AtCRK5  
376 GMTAFEPEA-LGNL--VEGLDFHRFYFENLWSRNSKPVHTTILNPHIHLMGDESACIAYIRITQYLDAGG CaMK II a-subunit  
542 AISPYQLEA---L---ERWEEIAGTAFQHFEGE~~GNR~~VSVE~~ELAQ~~---ELN-----LAP--THYSIV maize MCK1  
518 ALSVHQLEA---T---DRWEQHARCAYE~~I~~FEKEGNRA~~IMIE~~ELAS---ELG-----LSPSV~~VH~~AVL NtCBK2  
971 AYEFPSP~~TA~~---T---RAQFLEPKSLN~~NFLTKQMT~~-DAMIDELAS---ELP-----LSPSL~~H~~DHARH NtCaMK1  
  
441 KEVDQNDNGRIDYEFVAMMQKGNAGVGRRTMKN~~SNLIS~~---MRDV AtCDPK3  
451 KEIQDNDGQIDYGEFAAMMRKGGIGRR~~TMRKTLNLRD~~LAGLVDNGSNQVIEGYFK soybean CDPK  
484 QMDANSDGVVTFDEFKAAMQR--DSSLQDVVLS~~SLRTI~~ lily CCaMK  
571 HDWLRHTDGKLSFLG~~FVKLLH~~---GVSSRTIKAH AtCRK5  
443 IPRTAQSEETR~~VWHR~~RDGK~~WQI~~--VHFHRSGAPS~~VLP~~H CaMK II a-subunit  
593 QDWIRKSDGKLNFLGFTK~~FLH~~---GV~~TIR~~GSN~~TRRH~~ maize MCK1  
571 HDWLRHTDGKLSFLG~~FAKLLH~~---GVSSRSIT~~KVQ~~ NtCBK2  
1023 HDWLGP~~SDGKLNFLG~~VK~~FLH~~---GV~~T~~SR~~SIK~~THSHHAPT-GTR~~T~~CNSRQ~~DF~~TD~~T~~K~~D~~EP~~D~~T~~S~~REDHNP~~K~~ NtCaMK1  
  
483 AtCDPK3  
508 soybean CDPK  
520 lily CCaMK  
601 AtCRK5  
478 CaMK II a-subunit  
625 maize MCK1  
602 NtCBK2  
1088 SHNGR~~NFCR~~DDAVEAKNSNSTEESL~~TNH~~DMSEDGKMF~~DQ~~TKPNTIITEERALPLEAAKNKPEPK~~PQ~~KS NtCaMK1

483		AtCDPK3
508		soybean CDPK
520		lily CCaMK
601		AtCRK5
478		CaMK II a-subunit
625		maize MCK1
602		NtCBK2
1158	KNWSKLLKQLLPPTPDLLPEPETVDLRHQMTDERKKAEKWMLDYAMQHIVTTLTPARKNLLKRSIKALE	NtCaMK1
483		AtCDPK3
508		soybean CDPK
520		lily CCaMK
601		AtCRK5
478		CaMK II a-subunit
625		maize MCK1
602		NtCBK2
1228	KARKFNPRAPKLIREAVNEILTTPIQDDSSDITMDQEFSEMERYVAMLVEAFEAVVPLPEIMTAPCCLY	NtCaMK1
483		AtCDPK3
508		soybean CDPK
520		lily CCaMK
601		AtCRK5
478		CaMK II a-subunit
625		maize MCK1.
602		NtCBK2.
1298	EASCPGSPLLRVKPKSMAEFACYEVFGTERPQTSNNRTLEQMLQLMRALGQFGLKGGYLRERGSKAQVR	NtCaMK1
483		AtCDPK3
508		soybean CDPK
520		lily CCaMK
601		AtCRK5
478		CaMK II a-subunit
625		maize MCK1
602		NtCBK2
1368	KLFSKITSFEKIQSIRPRAKSVANVETVKSAGSVDVVRLETSGRSES	NtCaMK1

C.

