

At4g08850 1 -- I I Y I L V P I I G A I I I L S V C A G I F I C F R K R T K Q I E ----- E H T D S E S G G E T L S I F S F D G -----
AT4g00340 1 --- I I L C S V V G S I S V L G F T L L V L L L L L R S R R K K --- K T R K Q D E D G - - F A V L N L K -
At3g17420 1 - I I V I A L F A A F I V I L V - - - L S V W L S F R K K S K R S N A T T I P - - V T Q S P R F T E E I K E I S - - - - - V D H G S S N N N G T S Y Q T L D E K F V E D I E N G D K F S G S L E K K P L V G S H L P P - - - - -
At3g59110 1 M W V L I C L V G T F V V L V F C I L S L W I A F R R K S R R S S H K I P - - F S Q I P R V A K D I R V D D R V G F Q N H N E N L S I T N A D K S S D R N S G K M M S Y L G R T K S S D N D S I S Q C S S V H H H E R A C S S H S G E D G S F G A
At4g01330 1 - W V V I G I L L G S L I V I A L F F L S L C L T S R R R N R K P R H A D F A S A A V A T P P S K E I Q E I V R - - - P P A Q D H C H P T Q V P A E I Q V D I G K T E H R V V F S D R V S S G E S R G T V S - - - - -
At1g01540 1 - W V V I G I L L G S L I V I A L F F L S L C L T S R R R N R K P R - A D F A S A A I A P P I S K E I Q E I V - - - P A Q N - - - Q S V P A E I Q V D I G K I E H R V V F S D R V S S G E S R G T A S A - - - - -
At5g18610 1 --- M S G L P C F G S S A K D A S K D S V K K E L S A K D G S V T Q S H H I S L D K S K S R R G E P Q K K E L T A P K E G P - - - - -
At5g46560 1 --- M G N C W C R F E P L N H R V S A N - - - A K S E S P K E Q S P T V E D K H I E V Q K L P S N P K E V E D L R R D - - - - -
At4g35600 1 --- M G A C I S F F S S S S P K T G L H S H A T T N N H S N G T E F S S T T G A T T N S S V G Q Q S Q F S D I S T G I I S - - - - -
At3g09830 1 --- M K C F L F S G G D K R G E Q K T P I S V S I T S I F S D R E I N R S G S E F N S R D V S G T S T E S S M G R K N S Y P P V S T - - - - -
At5g38560 1 --- I V A I G V I V G L V F L S L F M G V W F T R K - R K R K D P G T F - - - V G Y T M P P S A Y S S P Q G S D V V L F N S R S S A P P K M R S H S G S D Y M Y A - - - - -
At4g02010 1 --- L I L I F S I A A G V L I L A I I T V L V I C S R A L R E E K A P - - - D P H K E A V K P R N L D A G S F G G S L P H P A S T R - - - - -
At3g58690 1 --- A A L V A I V V L A C L A L S S L F V A F S Y Y C Y - - - I R N K E G D C Q K V Q D V T E N G L Q - - - - -
At4g22130 1 --- M K N G S I S R I R S P I T A S - - - - -
At3g14350 1 --- A G G V A G I V I S L I V V T A V I A F F L I K R K R S K R S S S T D I E K T D N N I N Q P I I L A S N D F H Q E N K S V Q N P P L V E T K K L D T S L S M N L R P P P S E R H K S F D D D D S T M R K P I V A K K A A V V V P S - - - - -
At5g54380 1 --- I I G S L V G A V T L L I L L I A V C C Y C C L V A S R R Q R S T S P - - - Q E G G N G H P - W L P L P L Y G L S Q T L T K S T A S H K S - - - - -
At3g46290 1 --- L I V G S A I G S L L A V V F L G - S C F V L Y K K R R G - - - - - Q D G H S K T - W M P F S I N G - - - - - T S M G S K Y - - - - -
At3g51550 1 --- A I I A G A S G A V V L A L I I G F C V F G A Y R R R K R G D Y - - - Q P A S D A T S G W L P L S L Y G N S H S - - - A G S A K T N - - - - -
At5g24010 1 --- V W I V V G S V L G G F V F L S L F L S V L C L C R R K N N K - - - T R S S E S T G W T P L R R F R - - - - - G S S N S R - - - - -
At2g37050 1 --- G V I I G A S V G A F V L L I A T I I S C I V M C K S K K N N K L - - - G K T S A E L T - N R P L P I Q R - - - - -
At3g19300 1 --- V P T I G I A V T V F A L V M V V L I V L I Q R K K R E L D D S - - - K S I A C N L T R T S P S P R P R - - - - -
At5g65700 1 --- L L V L G L L V C S I A F A V V A I I K A R S L K K - - - A S E S R A W R L T - - - - -
At3g53380 1 --- I A G V V T A G A F F L A L F A G A L F W V Y S K K F K R - - - V E R S D S F A S E I I K A P K E F S - - - - -
At4g21380 1 --- I I G S S I G V S V L L L S F I I F F L W K R K Q K R S I L I - - - E T P I V D H Q L R S R D L L M N E V I S S R R H I S R E N N T D D L E L - - - - -
At4g33430 1 --- G Y S A T G A I A G G V A A G A A L L F A A P A L A F A W W R R R - - - K P Q E F F D V P A E E D P E V H L G Q L K R F S - - - - -
At1g71830 1 --- I A G G V A A G A A L L F A A P A I A F A W W R R R - - - K P L D I F F D V P A E E D P E V H L G Q L K R F S - - - - -
At2g48010 1 --- V L V S S F S V L L V A S V L V I T A W F W Y C R R K K S K L L - - - K P R D T S L E A G T Q S R L D S M S E S T T L V K F S - - - - -
At2g01820 1 --- I I V P V V G G V V G A L C L V G L G V C L Y A K R R K P A R V Q - - - S P S S N M V I H P H S G D N D D K L T V A A S L N S G G G S D S Y S H S G - - - - -
At1g55610 1 - V A T A V I A G I A F S F M C F V M L V M A L Y R V R K V Q K K E Q K R E K - - - Y I E S L P T S G S C S W K L S S V P E P L S I N - - - - -
At3g13380 1 - I A T G M S A G I V F S F M C I V M L I M A L Y R A R K V Q K K E K Q R E K - - - Y I E S L P T S G S S W K L S S V H E P L S I N - - - - -
At5g58150 1 - I G L G L A I S M A F L I G L L L I L V A L R - V R R K S R T W A T K L A - - - I N N T E P N S P D Q H D S T T D I K Q A T Q I P - - - - -
At3g28450 1 - I I I A A G V F G A A S M L L A F G I W W Y Y H L K W T R R R R S G - - - L T E V G V S G - - - L A Q R L R S H K L T Q - - - - -
At3g54030 1 --- M G A R C S K F S F C I F P S H F K S A S V L E S P D I E N G G K - - - - -
At5g59010 1 --- M G P R C S K L S L C W W P T H L K S T H N - E A S D L D N G T D - - - - -
At4g35230 1 --- M G C C Q S L F S G D N P I G K D G V Q P Q P I S Q N N H G G A T T A D N G S G G A S G V G G G G G G - - - - -
At3g02880 1 --- G A I V G I V I G C V V G L L L L L L I L F C L C R K R K K E E N - - V P S R N V E A P - - - V A A T S S A A I P K E T - - - V V V V P P A K A T G S - - E S - - -
At5g16590 1 --- A G A I V G I V I G C F V L L V L F L I V F C L C R K K K E Q V - - V Q S R S I E A - - - A P V P T S S A A V A K E S N G P P A V V A N G A S E N G V S K N P - - - - -
At3g17840 1 --- I A G I V G C V V G L S L I V M L M V L F R K K G N E R T R A I D L A T I K H H E - - - V E I P G E K A A V E A P E N R S Y V N E Y S P S A V K A V E V N S - - - - -
At5g58300 1 --- I P I A A G G A A L L L I T V I - I L C C C I K K K D K R E D S - I V K V K T - - - L T E K A - - - K Q E F G - - S G V Q - - - - -
At3g08680 1 --- G A I V G I A V G G S V L L F I L A I - I T L C C A K K R D G G Q D S - T A V P K A K - - - P G R S D N K - - - A E E F G - - S G V Q - - - - -
At2g26730 1 --- A I V A I V A S A L V A L L L A L - L L F L C L R K R R G S N E A R T K Q P K P A G - - - V A T R N V D L P P G A S S K - - - E E V T G T S S G M G G - - - - -
At5g53320 1 --- V V L G I A L S V C F A I L A L L A I - L L V I I H N R E E Q R R S S K D K P S K - - - R R K D S - - - D P N V G - - - - -
At2g36570 1 G I K P G I I A A V I G G C V A V I V L V S F G F A F C C G R L D R N G E R S K S G S V E T G - - - F V G G G E G K R R S S - - - Y G E G G - E S D A T S - - - - -
At3g51740 1 --- I L I A T G A L L A I L L L C C I L L C C L I K K R A A L K Q D G K D K T S E K T V S A - - - - - G V A G T A S A G G - - - - -
At3g24660 1 --- V A G L V I G L M S G A V V V A S L L I G Y L Q N K R K S S I E - S E D D L E E - - - G D E E D I G E K - - - - -
At5g10020 1 --- I A I V A S V G A A I M I L F V L F A Y H R T Q L K D F H G R N R F T D Q A T T R D T K F G R S S R P S L F N - - - (+ 6 0 a a) R K S S S G G S P L S S P R F S D Q P - V M L D V Y S - - - - -
At2g27060 1 --- A A L I G L V V G T A L L A L V C V M F H F M L R K Q H D E E K S D V T G E K S I V P K T E P S S S N V I A A - - - (+ 6 0 a a) S S Q V S S T P S L P K I Q N S P D N P T S R Q T - - - - -
At1g25320 1 --- T A I V A I V C D F I G I C I V G F L F S C C Y L K I C A R R N S V D E E G Y V L E K - - - E G K E K K - G S F C F R R D G S E S P S S E - - - - -
At2g01210 1 --- A V I A I V L C D V F G I C L V G L L F T Y C Y S K F C A C N R - - - E N Q F G V E K - - - E S K K R A S E C L C F R K D E S E T P S - E - - - - -
At5g67200 1 --- I G F T A G L A S L I V L G L C L V V F S L V I K R R N D D G I Y E P N P K G E A S L S - - - Q Q Q Q S Q N Q T P R T R A V P V L N S D T E S Q K R E K E V Q F O T E Q R I P - - - - -
At4g22730 1 --- V A L I S S V I T V I T I L G A G I L T F F R Y R R R K Q K I S N T P - - - E F S E G R L S T D Q K E F R A S P L V S L A Y T K E W D P L G D S R N G A E F S - - - - -
At2g16250 1 --- A A V G G V A F I L L F V I L P I I L V L C M R H R R R A A Q R G N - - - - - N D R P K P A G E A S Q P P K G A Q T F D L S R - - - - -
At5g13290 1 --- V I V I S I V S G I I T G L V S A L V L A F L V R - - - - - S I V K F M Q T P I L K G P V V F S P K I T P K S L H A A L S N G - - - - -

At4g08850 53 -----KVRVYQFPIKATGEFDPKYVIGTGGH--GKVKYKAKLPN-----AIVAVKRLNETTSS---I
AT4g00340 49 -----VFSFKLQOSATNGFSDK--VGGGGF--GAVFKGTLPGSS-----IFVAVKRLERP
At3g17420 97 -----STPSTTAPSPLLGLPEVSHIGWGHWF--TLRDLQLATNHFSAKESIIGDGGY--GVVYHGTLINIK--TPVAVKRLLN
At3g59110 146 AWRQNSLSQGLVTASPLVGLPEISHLWGHWF--TLRDLQLATNRFPAEENVIIGGGY--GVVYKGRLLING--NDVAVKRLLN
At4g01330 101 -----ETASYSGSGCVG-PEVSHLWGRWYTLRLEEAATNGLCEENVIIGGGY--GIVYSGILLTDG--TKVAVKRLLN
At1g01540 94 -----SETASYSGSGNCG-PEVSHLWGRWYTLRLEEAATNGLCEENVIIGGGY--GIVYKGRLLTDG--TKVAVKRLLN
At5g18610 63 -----TAHIAAQTFFRLEAAATKNFRPECLGGGGF--GRVYKGRLETTG-----QIVAVKQLDR---N
At5g46560 56 -----SAANPLIAFTYELKNTISNFRQDRVLGGGGF--GSVYKGFIKEDLDGQEVPEP-LPVAVKVHDGD---N
At4g35600 61 -----DSGKLLSEPNLKVNFELDLKATKNFKPDSMLGGGGF--GKVVYKGVVDTTLLAPS RVGSGMIVA LKRLNS-----E
At3g09830 65 -----RASNLREFSITDLKSAATKNFRSRVMIGGGF--GCVFRGTVRM--LEDSSVK--IEVAVKQLGK---R
At5g38560 77 -----SSDSGMVSNQRSWFSYDDELQVATNSFSEKNNLGGGGF--GCVYKGVLSDG--REVAVKQLKI---G
At4g02010 62 -----FLSYEELKEATSNFESASILLGGGGF--GKVVYKGRLLADG--TAVAKKLLTS-----G
At3g58690 60 -----LFTFKQDHSATGGFSKSNVVGNGGF--GLVYKGVLDNG--RKVAIKLMDH---A
At4g22130 17 -----QYTVSSHQVATNSFSQENLIGGGSL--GRVYRAEFPNG--KIMALKKIDNA---A
At3g14350 114 -----NVNTYTVSDLOVATNSFSVDNLGGGTF--GRVYRAQFEDG--KVLAVKRLDSS---A
At5g54380 65 -----ATASCISLASTHLGRCEMFOQITMDATNKDESSLGGGGF--GRVYKGRLLPDG--TKVAVKRGNPRS
At3g46290 52 -----SNGTTLTSTITNANYRIPFAAVKDATNNDDESRLGVGGF--GKVVYKCELNDG--TKVAVKRGNPKS
At3g51550 62 -----TTGSYASSLPSNLCRHFFSFAELTKAATKNFDESRLGVGGF--GKVVYKGRLLPDG--TKVAVKRGNPMS
At5g24010 55 -----TTERTVSSSGYHTLR-ISEAELQSGTNNFDRSLVIGVGGF--GMVFRGSLKDN--TKVAVKRGSPGS
At2g37050 50 -----VSSTLSEAHGDAACHFTLYETEEBATKKEFR--IGSGGF--GIVYKGRLLPDG--KELAVKVLANN
At3g19300 51 -----SMIHEGNSFGFRKFSYKELRKATE--DFNAVIGGGF--GIVYKGRLLPDG--LVAVKKMNKSS
At5g65700 37 -----AFORLDFTCDDVLDLKL--EDN--IIGAGGA--GIVYKGVMPNG--DLVAVKRLAAMSR
At3g53380 49 -----YKELKATKNFNSRLIGGGAF--GVVYKGRLLPDG--GDIVAVKRCSH
At4g21380 71 -----PLMEFEVAMATNNSFNANKLGGGGF--GIVYKGRLLD--GQEMAVKRLSK
At4g33430 60 -----LRRLQVATDSFSNKNLGGGGF--GKVVYKGRLLADG--TLVAVKRLKEE
At1g71830 53 -----LRRLQVADSGFSNKNLGGGGF--GKVVYKGRLLADG--TLVAVKRLKEE
At2g48010 61 -----FDLTKKATNNSFRHNLGGGGY--GNVFKGALPDG--TQVAVKRFKN
At2g01820 76 -----SAASDIHVVEAGNLVLSIQVLRNVNNSSEENLGGGGF--GIVYKGRLLPDG--TKLAVKRLKESS---V
At1g55610 64 -----VATFEKPLRKLTFFAHLEATNGFSAETMVGSGGGF--GEVYKQLRDG--SVVAIKKLIRITG
At3g13380 64 -----VATFEKPLRKLTFFAHLEATNGFSADSMIGSGGF--GIVYKGRLLADG--SVVAIKKLQVGTG
At5g58150 63 -----VVMIDKPLMKMLADLKAATFNDRGTMLEWCKS--GPTYGAVLPGG--FRAALKVLPSTGT
At3g28450 56 -----VSLFQKPLVKVKGDLMAATNNSSENLIIVSTRT--GTYKALLPDG--SALAVKHLSTCK
At3g54030 34 -----VWPTFKEFKLEQLKSAATGGFSSDNIVSEHGKAPNVVYKGRLLDGD--RLVAVKRFNRLAWA
At5g59010 33 -----DLPSFTEFSFDQRAATCGFSTDSIVSEHGKAPNVVYKGRLLDGD--RWIAVKRFNRSAWP
At4g35230 54 -----GIPSFSEFSFADLKAATNNSSDNIVSESGEKAPNLVYKGRLLQNR--RWIAVKRFNRSAWP
At3g02880 71 -----GAVNKDLTFVKSFGFDLDDLKASAEVLGKGTG--GSSYKASFEHC--LVAVAVKRLRDVV
At5g16590 77 -----AAVSKDLTFVKSFGFDLDDLKASAEVLGKGTG--GSSYKASFEHC--LVAVAVKRLRDVV
At3g17840 78 -----SGMKK-LVFFGNATKVFDLEDLLRASAEVLGKGTG--GTAYKAVLDV--TLVAVKRLKDVT
At5g58300 53 -----EPEKNLVFFNGCSYNFDLEDLLRASAEVLGKGSY--GTAYKAVLEES--TTVVVAVKRLKEVA
At3g08680 59 -----EAEKNLVFFEGSYNFLEDLLRASAEVLGKGSY--GTAYKAVLEES--TTVVVAVKRLKEVA
At2g26730 72 -----ETERNKLVFFTEGGVYSFDLEDLLRASAEVLGKGSY--GTAYKAVLEES--TTVVVAVKRLKDVM
At5g53320 52 -----EGDNKLVFFTEGGVYSFDLEDLLRASAEVLGKGSY--GTAYKAVLEES--TTVVVAVKRLKEVS
At2g36570 101 -----ATDRSRLVFFE-RRKQFELDDLKASAEVLGKGSY--GTAYKAVLEES--TTVVVAVKRLKDANP
At3g51740 57 -----EMG-GKLVHFD-GPFVFTADDLLCATAETMGKSTY--GTAYKAVLEES--NEVAVKRLREKTT
At3g24660 51 -----EGGEGKLVVFFQ-GGENTLDDVNLATGQVMEKTSY--GTAYKAVLEES--GNIALLRLREGTC
At5g10020 144 -----PDRLAGELFLDVSLKLTAEELSRAPAEVLGKSSH--GTYKATLNDG--HMLTVKVLRVGLV
At2g27060 143 -----SMRLDGNLYIFDLSLKTAEELSRAPAEVLGKSSH--GTYKATLNDG--SVLAVKMLREGTA
At1g25320 67 -----NLEPQQDLVLLDKHIALDLELLKASAEVLGKGSY--GTAYKAVLEES--LTVAVKRLGEGGS
At2g01210 63 -----NVE-HCDIVPLDAQVAFNLEELLKASAEVLGKSGI--GTYKAVLEES--LTVAVKRLGEGGS
At5g67200 86 -----NSGNLVFCGESRSQGMVTMEQLMRSAEVLGKGSY--GTYKAVLEES--LTVAVKRLDAAKT
At4g22730 79 -----QEPHLFVVNSFRNLEDLIESATQCEANLNSNSF--TSVFKGVLDG--SPVALRSLNINSSCK
At2g16250 61 -----LGNAFSYEQLQATEEENDANLIKRGHS--GNLFRGFLNG--IPVAVKRLDVRE
At5g13290 87 -----IQLLGSDLN--GKYYKAVLDNG--LVAVAVKRLGSLGCVGSPSS

At4g08850 104 SNPSTKQEFLLNEIRALTEIR--HRNVKLFQFCFSHR-----RNTFLVVEYMERGSLRKVLEND---D-EAKKLDWGRINNVKGVVAHALSYMHDR---
 AT4g00340 95 --GSESEFAEVCITIGNIQ--HVNLVRLRGFCSENG-----LHRLLVYVYMPGSSLSYLSR-----T-SPKLLSWETRFRIALGTAKGLAYLHEGC---
 At3g17420 167 NPGQADKDFRVEBAIGHVR--HKNLVRLIGYCVFEG-----THRMLVVEYMNNGNLEQWLHGDMI---HKGHLTWEARKVLVGTAKALAYLHEAI---
 At3g59110 223 NLGQAEKFRVEBAIGHVR--HKNLVRLIGYCVFEG-----VNRMLVVEYVNSGNLQWLHGAMG---KQSTLTWEARKVILVGTAKALAYLHEAI---
 At4g01330 169 NRGQAEKFRVEBAIGHVR--HKNLVRLIGYCVFEG-----AYRMLVYVYVDNNGNLEQWLHGDVG---DKSPLTWDIRMNIILCMAGLGLAYLHEGL---
 At1g01540 163 NRGQAEKFRVEBAIGHVR--HKNLVRLIGYCVFEG-----AYRMLVYVYVDNNGNLEQWLHGDVG---DVSPLTWDIRMNIILCMAGLGLAYLHEGL---
 At5g18610 118 GLQGNRE-FLVEVFMGLSLH--HPNLVNLGYCAD--GDQ---RLLVVEYVYMPGSLLEDDHLDLPP---DKEPLDWSTRMIAAAGAAKLEYLHDKA---
 At5g46560 120 SFQGHRE-FLAEVIFLGLS--HPNLVKLIGYCFE--DNH---RVLVVEYVYMPGSENNLFSR-----VLLPLSWAIRMKIAGAAKGLAFLEHAK---
 At4g35600 130 SVQGFAP-VRSEVNFGLMS--HRNLVKLIGYCFE--DKE---LLVVEYVYMPGSESHLFR---NDFFPDLRTRKIVTGAARGLAFLEHLS-L---
 At3g09830 124 GLQGHKE--VTEVNFGLIVE--HTNLVKLIGYCAD--DDEGRI--RLLVVEYVYMPNRSVEFHLSPRS-----LTVLTWDLRLRIAQDAARGLTYLHEEM---
 At5g38560 136 GSQGERE-FKAEVEITSRVH--HRHLVTLVGYCTS--EQH---RLLVYVYVPPNNTLHYHLHAP---GR-P--VMTWETRVRVAAGAARGLAYLHEDC---
 At4g02010 109 GPQGDKE-FQVEIDMLSRLLH--HRNLVKLIGYVSSRDSQ---HLLCYELVVPNGSLEAWLHGP--LG-LNCPDLDWTRMKIALDAARGLAYLHEDS---
 At3g58690 107 GKQGEFE-FKMEVELLSRLR--SPYLLALIGYCS--NSH---KLLVVEYVYMPGSLQEHLYLPNRSQS--VPPRLDWTRMIAVBAAGLEYLHEQV---
 At4g22130 65 LSLQEDNFLEAVSNMSELR--HPNTVPLAGYCFE--GQR---LLVVEYVYVGNGLDDTLFTND--RSMNLTWNARVKVALGTAKALEYLHEVC---
 At3g14350 165 LPTDTADDFTIIVSKIAHLD--HENVTKLDGYCSFH--GQH---LVVVEYVYVHNRGSLHDFLELAE---ESKPLIWNPRVKIALGTARALEYLHEVC---
 At5g54380 128 --EQMAEFRTIEMLSKLR--HRHLVSLIGYCFE--SEMILVVEYVYMPGSLRSHLYCAD-----LPPLSMKQRLIETIGAARGLHYLHTGA---
 At3g46290 115 --QQLAERTEIEMLSQFR--HRHLVSLIGYCFE--NEMILVVEYVYMPGSLRSHLYCAD-----LPPLSMKQRLIETIGAARGLHYLHTGD---
 At3g51550 126 --EQVHEFQTEIEMLSKLR--HRHLVSLIGYCFE--CEMILVVEYVYMPGSLRSHLYCAD-----LPPLSMKQRLIETIGAARGLHYLHTGA---
 At5g24010 117 --RQLPEFLSEITILSKIR--HRHLVSLIGYCFE--SEMILVVEYVYMPGSLRSHLYCAD-----LPPLSMKQRLIETIGAARGLHYLHTGS---
 At2g37050 110 --YQKREFANEVILLRIH--HRNLVQVIGYCFE--GKNMLVVEYVYMPGSLRSHLYCAD-----LPPLSMKQRLIETIGAARGLHYLHTGC---
 At3g19300 109 --EQAEDEFCELELLARLH--HRHLVALKGYCFE--NERFLVVEYVYMPGSLRSHLYCAD-----LPPLSMKQRLIETIGAARGLHYLHTGC---
 At5g65700 88 --GSSHDHGFNAEIQTLGRIR--HRHTVRLIGFCSNH-----ETNLLVVEYVYMPGSLRSHLYCAD-----LPPLSMKQRLIETIGAARGLHYLHTGC---
 At3g53380 93 SSQDKKNEFLSEITILSKLR--HRNLVRLIGYCFE--EILLVYVYVMPGSLRSHLYCAD-----LPPLSMKQRLIETIGAARGLHYLHTGC---
 At4g21380 118 TSVQCTDEFKNEVKLIARLQ--HINLVRLIACQVDP-----EKMLTYEYELNLSLDSHLD--KSR---NSKLNWQMRFDIINGIARGLLYLHDS---
 At4g33430 104 RTPGGELQFQTEVEMISMV--HRNLRLRGFCMTPT-----ERLLVVEYVYMPGSLRSHLYCAD-----LPPLSMKQRLIETIGAARGLHYLHTGC---
 At1g71830 97 RTPGGELQFQTEVEMISMV--HRNLRLRGFCMTPT-----ERLLVVEYVYMPGSLRSHLYCAD-----LPPLSMKQRLIETIGAARGLHYLHTGC---
 At2g48010 104 CSAGGDANFAHEVEVIASIR--HVNLALRGYCTATTPYEG--HRTIVCPLVSNGLSHDHLFG--DL---EAQDAPLQRRIALGMARGLAYLHYGA---
 At2g01820 138 VSDKLTPEFKSEITILSKIR--HRHLVRLIGYCFE--NERLLVVEYVYMPGSLRSHLYCAD-----LPPLSMKQRLIETIGAARGLHYLHTGC---
 At1g55610 122 ---QDREFMAEMETIGKIK--HRNLVPLIGYCKVG-----ERLLVVEYVYMPGSLRSHLYCAD-----LPPLSMKQRLIETIGAARGLHYLHTGC---
 At3g13380 122 ---QDREFMAEMETIGKIK--HRNLVPLIGYCKIG-----ERLLVVEYVYMPGSLRSHLYCAD-----LPPLSMKQRLIETIGAARGLHYLHTGC---
 At5g58150 121 ---LTDTEVSIABERLARIN--HPNLFPLIGYCIAT-----EORLAIYEDLDVNLQSLHNG-----DSDAPWRLRHKIALGTARALEYLHGC---
 At3g28450 113 ---LGEREFREYNQLWELR--HSNLAPLIGYCFVVE-----EERLLVVEYVYMPGSLRSHLYCAD-----LPPLSMKQRLIETIGAARGLHYLHTGC---
 At3g54030 93 ---DHRQFLDEAKAVGSLR--SDRLANLIGCCFEG-----EERLLVVEYVYMPGSLRSHLYCAD-----LPPLSMKQRLIETIGAARGLHYLHTGC---
 At5g59010 92 ---DTRQFLDEAKAVGSLR--SDRLANLIGCCFEG-----EERLLVVEYVYMPGSLRSHLYCAD-----LPPLSMKQRLIETIGAARGLHYLHTGC---
 At4g35230 113 ---EPKQFAEFAWGVKLR--HRNLANLIGYCFE--DERLLVVEYVYMPGSLRSHLYCAD-----LPPLSMKQRLIETIGAARGLHYLHTGC---
 At3g02880 129 ---VPEKEFRERLHVLCGMS--HANLVTLIAYYFS-----RDEKLLVVEYVYMPGSLRSHLYCAD-----LPPLSMKQRLIETIGAARGLHYLHTGC---
 At5g16590 135 ---VPEKEFRERLHVLCGMS--HANLVTLIAYYFS-----RDEKLLVVEYVYMPGSLRSHLYCAD-----LPPLSMKQRLIETIGAARGLHYLHTGC---
 At3g17840 135 ---MADREFEKELEVVGAMD--HENLVPLRAYYYS-----GDEKLLVVEYVYMPGSLRSHLYCAD-----LPPLSMKQRLIETIGAARGLHYLHTGC---
 At5g58300 111 ---AKREFEQQMEIISRGNHPSVPLRAYYYS-----KDEKLLVVEYVYMPGSLRSHLYCAD-----LPPLSMKQRLIETIGAARGLHYLHTGC---
 At3g08680 117 ---AKREFEQQMEIISRGNHPSVPLRAYYYS-----KDEKLLVVEYVYMPGSLRSHLYCAD-----LPPLSMKQRLIETIGAARGLHYLHTGC---
 At2g26730 130 ---ASKREFEQQMEIISRGNHPSVPLRAYYYS-----KDEKLLVVEYVYMPGSLRSHLYCAD-----LPPLSMKQRLIETIGAARGLHYLHTGC---
 At5g53320 109 ---VPQREFEQQMEIISRGNHPSVPLRAYYYS-----KDEKLLVVEYVYMPGSLRSHLYCAD-----LPPLSMKQRLIETIGAARGLHYLHTGC---
 At2g36570 160 ---CPRKEFEQYMEIIGRLK--HONVVKLRAYYYA-----KEKLLVVEYVYMPGSLRSHLYCAD-----LPPLSMKQRLIETIGAARGLHYLHTGC---
 At3g51740 114 ---KVEKEFEQYMEIIGRLK--HONVVKLRAYYYA-----KEKLLVVEYVYMPGSLRSHLYCAD-----LPPLSMKQRLIETIGAARGLHYLHTGC---
 At3g24660 109 ---KDRSSCLPVRQLGRIR--HENLVPLRAYYQK-----RGEKLLVVEYVYMPGSLRSHLYCAD-----LPPLSMKQRLIETIGAARGLHYLHTGC---
 At5g10020 203 ---RHKKDFAREAKKIGSLK--HPNTVPLRAYYWGPR-----EERLLVVEYVYMPGSLRSHLYCAD-----LPPLSMKQRLIETIGAARGLHYLHTGC---
 At2g27060 202 ---KKEKFEAREAKKIGSLK--HPNTVPLRAYYWGPR-----EERLLVVEYVYMPGSLRSHLYCAD-----LPPLSMKQRLIETIGAARGLHYLHTGC---
 At1g25320 126 ---QRCKEFQTEVBAIGKLR--HPNTVSLRAYYWS-----VEEKLLVVEYVYMPGSLRSHLYCAD-----LPPLSMKQRLIETIGAARGLHYLHTGC---
 At2g01210 121 ---QRCKEFQTEVBAIGKLR--HPNTVSLRAYYWS-----VEEKLLVVEYVYMPGSLRSHLYCAD-----LPPLSMKQRLIETIGAARGLHYLHTGC---
 At5g67200 145 --AVTSEAFENHMEIVGGLR--HTNLVPLRAYYFQSN-----GERLLVVEYVYMPGSLRSHLYCAD-----LPPLSMKQRLIETIGAARGLHYLHTGC---
 At4g22730 141 ---NBEVEFMNGKLLSLS--HENLVKLIGYCFCSR---GRGECRLTYDFASKKLSNFLDLQERE---TNLVLAWSARTSHIKGTAKGLAYLHGSDQQK---
 At2g16250 112 ---GKSEGMISELELFSKAG--HORLVPFLGHCLFN-----ESQKFLVYKEMRHGDLASSLFRKSENEGDLKSLDWITRKLIALGAAGLSYLHHECS---
 At5g13290 161 SSKSVKRRLOKELELLAGLR--HRNLSLRAYYVRS-----DEFSLVYVYMPGSLRSHLYCAD-----LPPLSMKQRLIETIGAARGLHYLHTGC---

At4g08850 189 SEATVHRDTSKSNILLG--EDYFAKLSDFGLAKLL--KPDSS-----NWSAVAGTYGYVAPELAYAMK--VTEKCDVY
AT4g00340 177 RDCIITHCDIKPENILLD--SDYNKAVSDFGLAKLL--GRDFSR-----VLATMRGTWGYVAPELISGLP--ITTKADVY
At3g17420 253 EFKVVHRDIKSNILLMD--DNFPAKLSDFGLAKLL--GADSNY-----VSTRVMGTFGYVAPEYANGL--INEKSDVY
At3g59110 309 EFKVVHRDIKSNILLID--DDFNKLSDFGLAKLL--DSGESH-----ITTRVMGTFGYVAPEYANTGL--INEKSDIY
At4g01330 255 EFKVVHRDIKSNILLD--RQNNKAVSDFGLAKLL--FSSESY-----VTTTRVMGTFGYVAPEYACTGM--ITTEKSDIY
At1g01540 249 EFKVVHRDIKSNILLD--RQNNKAVSDFGLAKLL--GSESSY-----VTTRVMGTFGYVAPEYACTGM--INEKSDIY
At5g18610 201 NPPVLYRDLKSNILLG--DGMHPKLSDFGLAKLG--PVGDKT-----HVSTRVMGTYGYCAPEYACTGQ--ITLTKSDVY
At5g46560 203 KE--VIYRDFKTSNILLD--MDYNKLSDFGLAKDG--PVGDKS-----HVSTRVMGTYGYAAPEYIMTGH--ITPGSDVY
At4g35600 211 QREVIYRDFKSNILLD--SNYDAKLSDFGLAKLG--PADEKS-----HVSTRVMGTYGYAAPEYMATCH--LYVKSDFV
At3g09830 211 EFQIYHRDFKSNILLD--EDMKAKLSDFGLARLG--PSEGLT-----HVSTIDVGTMGYAAPEYIQTGR--ITTSKSDVW
At5g38560 219 HPRIIHRDIKSNILLD--NSFFALVADFGLAKLA--QELDLNT-----HVSTRVMGTFGYMAPEYATSGK--LSEKADVY
At4g02010 196 QPSVIHRDFKSNILLE--NNFNKAVADFGLAKQA--PEGRGN-----HLSTRVMGTFGYVAPEYAMTGH--ILLVKSDFV
At3g58690 195 SEPPVIHRDFKSNILLD--RNFNKAVSDFGLAKVG--SDKAGG-----HVSTRVLGTQGYVAPEYALTGH--ITTKSDVY
At4g22130 151 LPSIVHRNFKSNILLD--EELNPHLSDSGLAALT--PNTERQ-----VSTQVVGSGFGYSAPELALSCI--YITVKSDFV
At3g14350 251 SESIVHKNKSNILLD--SELNPHLSDSGLASFT--PTANEL-----LNQNDE--GYSAPETSMSGQ--YSLKSDVY
At5g54380 210 SQSIIHRDKVTNILLD--ENLVAKVADFGLSKT--GPSLDQT-----HVSTAVKGSFGYLDPEYFRRQ--ITTEKSDVY
At3g46290 197 SKPVIHRDKSNILLD--ENFMKAVADFGLSKT--GPELDQT-----HVSTAVKGSFGYLDPEYFRRQ--ITDKSDVY
At3g51550 208 KHTIIHRDKVTNILLD--EKVWAKVADFGLSKT--GPTLDHT-----HVSTVVKGSFGYLDPEYFRRQ--ITTEKSDVY
At5g24010 199 SQGIYHRDIKSNILLD--NNVWAKVADFGLSRS--GPCIDET-----HVSTGVKGSFGYLDPEYFRRQ--ITDKSDVY
At2g37050 194 VPATVHRDKTSNILLD--KHMRAKVSDFGLSKF--AVDGT--TS-----HVSSIVRGTWGYLDPEYYSQQ--ITTEKSDVY
At3g19300 191 DEPLIHRDFKSNILLD--EHPVAKLADFGLAASRDGSI--CFE-----PVNIDTRGTGTYVDPPEYVTHE--ITTEKSDVY
At5g65700 171 SELIVHRDKSNILLD--SNFEAHVADFGLAKFT--QDS--GTS-----ECMSAAGSYGYTAPEYAYTLK--VDEKSDVY
At3g53380 176 ENQVIHRDKSNILLD--ESENKAKGDFGLARQ--EHDKSP--E-----ATVAAGTMGYLAPEYLLTGR--ASEKIDVF
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At1g71830 183 DEKIYHRDKAANILLD--EEFFAVVADFGLAKLMD--YKDT--HV--TTAVRGTICHLAPEYLSGK--SSEKIDVF
At2g48010 193 QESIIHRDIKSNILLD--ERFEAKVADFGLAKFNP--EGMTHM--STRVAGTMGYVAPEYALYQ--ITTEKSDVY
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At5g58150 202 IPPMVHGEVKAATILLD--SSQEPRLADFGLVKKLDEQFP--GS--ESLDGYPPEQERNAS--PTLESDVY
At3g28450 193 RFPILHONTKSNVILLD--EDFDARLIDSLGLARLMSVPSDN--NES--SFMTGDLGEGFYVAPEYSTML--ASLKADVY
At3g54030 173 RA--LYHDLNAYRVLFD--KDGPNRISCFGLMKNS--RDGKSYSTNLAF--TPPEYLR--TGR--VITPESVVE
At5g59010 172 RA--LYHDLNAYRVLFD--QDGNPRLISCFGLMKNS--RDGKSYSTNLAF--TPPEYLR--TGR--VITPESVVE
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At3g02880 213 -GTTSHGNKSNILLG--DSYFAKVSDYGLAP--TISSTS--APNRIDGYRAPEITDARK--ISQKADVY
At5g16590 219 -ATTSHGNKSNILLG--ESYFAKVSDYCLAP--MISPTS--TPNRIDGYRAPEITDARK--ISQKADVY
At3g17840 219 -PLSSSHGNKSNILLT--NSHDARVSDFGLAQLMSAS--T--TPNRATGYRAPEVTPRR--VTSQKADVY
At5g58300 196 GPKFSGHGNKSNVIMK--QESDACSDFGLT--PLMAVP--I--APMRGAGYRAPEVMTGR--HTHKSDFV
At3g08680 202 GAKLLHGNKSNVLLT--QELHVCVSDFGLAPLMSHHTL--IPSRSLGYRAPEAETGR--HTQKSDVY
At2g26730 213 -AKLVHGNKSNILLH--PNQITCVSDYGLNQLF--SNS--S--PPNRLAGYRAPEVLETRK--VITKSDVY
At5g53320 194 GGKLVHGNKSNIFLN--GKGYCCTSGTGMATLMSHL--PRHAVGYRAPEITDARK--GTQPSDFV
At2g36570 245 ISKIPHGNKSNVLLD--RNGVALTADFGLSLLLN--PV--H--AARLGGYRAPEQSEIKR--LSQKADVY
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At5g10020 287 -RAMPHGNKPTNILLSSPDNTVRI--TDYCVHRLMTPSGVA--EQILNMSALGYSAPELLSSASKPIT--TLKSDVY
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At5g67200 231 -SALVHGNKSNILLG--QDFEACLTIDYCLSVLTDSSASPD--DPDSSSYKAPLIRK--SR--RPTSKADVY
At4g22730 230 KFTIYHRNIVKSNILLD--EOPNPLTADSLHNL--LADDMVFS--ALKTS--AMGYLAPEYVTTCK--FTEKIDIF
At2g16250 201 -EPLVHRDVQASSILLD--DKFEVRLGSLSEAYAQDAYQSRIS--RLLR--LPQIYHLRLTDRHLIGLFFSGVTNAICSYDFVY
At5g13290 247 ETQILHYNLPKPTNVMLLD--SEFFPRLADCLAKIM--PSS--HTAVSCYSAPESSQ--NR--

At4g08850 256 SFGVLELELVKIGK-----EHPGDLVSTSSPPDATLSLKSISDHRLEPEPT-PEIKFEVLEILKVALLCIHS
AT4g00340 245 SFGVLELELGGRRNVIVNSDTLGE-----KETEPEKWFPPWAAREIIQGNVDSVVD SRLNG---EYNTSEVTRMATVAIWCIQD
At3g17420 321 SFGVLELEAIGRNPVDYARPK-----EEVHVEVWELKVMVQ----QKQFEVVDKLEI---KPTTSELKRALLTALRCVDP
At3g59110 377 SFGVLELEITGRDVPDYERPA-----NEVNLVEWELKVMVQ----TRRAEVEVDSRIEIP---PPATRALKRALVALRCVDP
At4g01330 323 SFGILIMEIITGRNPVYSRPQ-----GEVNLVEWELKVMVQ----NRRSEVVDPKIPE---PPTS KALKRVLVALRCVDP
At1g01540 317 SFGILIMEIITGRNPVYSRPQ-----GETNLVDWELKVMVQ----NRRSEVVDPKIPE---PPSSKALKRVLVALRCVDP
At5g18610 272 SFGVLELEITGRKAINARAP-----GEHNLVWAWARLPFK----DRRKFPKMADPSLQG---RYPMRGLYQALAWAAMCLQE
At5g46560 271 SFGVLELELITGRNLSLKRPT-----REQNLIDWALPLFK----EKKKVLNIVDEPKMNC---EYPVKAVQMAAMLAYHCLNR
At4g35600 280 AFGVLELEITGTLTAHNTKRPR-----GQESLVDWLRPELSS---NKHRVQIMDKGKIGK---QYTTKVATEMARTITSCIEP
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At5g38560 289 SFGVLELELITGRKPLDTSQPL-----GDESLVEWARPPLIGQ-AIENEFEDELVDRLGK---NFIPCEMFRMVEAAAA CVRH
At4g02010 265 SFGVLELELITGRKPVMSQPS-----GQENLVITWRPVLTR---DKDRIEELVD SRLLEG---KYPKEDFIYVCTIAAACVAP
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At3g58690 335 EADYRPLMADVVQSLVPIVRNRRSASKLSGSSSSFLARSPPNSPGKASIGSQ
At4g22130 290 EEFERPPMSVQVQLVRIVQRASVVKRRSSDDTGFSYRTPPEHEVDISF
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At5g54380 349 YGVD RPSMGDVLWNLEYALQLEETSSALMEPDDNSTNHIPGIPMAPMEPFDNSMSIIDRGGVNSGIGTDDDAEDAITSAVFSQLVHPRGR
At3g46290 336 YGVD RPSMGDVLWNLEYALQLEAVIDGEPEDNSTNMIGELPPQINNFSQGDTSVNVPGTAGRFEESSIDDLSGVMSKVPFSQLVKSEGR
At3g51550 347 QGIERPMSMGDVLWNLEFALQLESAAEENGKGVCGDMDMEIKYDDGNCKGKNDKSSDVYEGNVTDSSRSGIDMSIGRSLASEDSGLTPSAVFSQIMNPKGR
At5g24010 338 YGVD RPTIGDVLWNLEHLLQLESGLNIPPEEYGDVTDPR TAROGLSNGSNIERDYGDGTSGIISSTQVFSQLMTNAGR
At2g37050 334 HGNMRPMSVQVQKDIQDAIRIEKEALAARGGIDEFSRSSAHSSSLNMGMLDLAGSQSYVVIDESVLQPTAR
At3g19300 328 EGVARPSIKQVLRLLYESCPLHLGLAMAVEENKGRSLRSGSGFQSGDIRGLASSSTTSRSHCSRSFLLLETGSPHSPPNGLSF
At5g65700 309 QAVRPTMRVQVQLTEIPKLPSPKQPMTESAPESLSPKSGVQSPDPLLNL
At3g53380 320 DEAFRPTMRVQVQLIGEADVPPVVKSRPTMSFSTSHLLLSLQDTLSDCNTVALNSRSSSWSVPEHNVIIRSDDDLHV
At4g21380 345 RAEDRPTMSLVILMLGSESTTIPQPKAPGYCLERSLLDTSSSSKQRDDESWTVNQITVSVLDAR
At4g33430 330 SEMERPKMSVQVRLMLEDGLAEKWEQKVEVLRQEVLESSHPTSDWILDSTNDLHAMELSGPR
At1g71830 323 SEMERPKMSVQVRLMLEDGLAEKWEQKVEILREEIDLSPNPNSDWILDSTYNLHAVELSGPR
At2g48010 331 QLHARPTMQVQVVKMLESNEFTVIAIPQRPILVACREEIDRSVSSSSSGSKLTSPTGYQAFSFGGDPGSGNTNTT
At2g01820 367 EEFYQRPDMAHIVNVLSSITVQWKPTETDPPDDVYGDYDMLPQLVKLKWQAFELGSQTADDSSSSSAYGSKDNTQTSIPTRPSGFADSFTSVDGR
At1g55610 347 REFKRPTMIQVMTMFKELVQVDTENDSLDEFLLKETPLVEESRDKPE
At3g13380 346 REFKRPTMIQVMTMFKELVQVDTENDSLDEFLLKETPLVEESRDKPE
At5g58150 328 LPWKRPTMQVQVGLKDI SPNY
At3g28450 332 RPKERWMSMFQAYQSLKALAEKQGYSESEQDDDFPLIFDTQENEKV
At3g54030 334 SPLSLTPFGACLRLDTAIQEIILSKIGYKDDDEGIANELSFQMWTNQMQESLNSKKQGDLAFRSKDFTTAVDCTYQFIDGGTMVSPTVHARRCLSYLMNDNAQEALTDALQAQVSPDWPTALYLQAACLFKLGMEA (+20aa)
At5g59010 333 T-TSLTPLGACSRHDLTAIHEILEKVGKDDDEGVANELSFQVWTDQIQETLNSKKQGDAAFKGKDFVTAVECYTQFIEDGTMVSPTVFARRCLCYLMSNMPQEAALGDAMQAQVVSPEWPTAFYLAALFSLGMDKD (+20aa)
At4g35230 354 PORPLSPLGACSRMDLTAIHQILVMTHYRDDEG-TNELSFQEWQTMKMDMLDARKRGDQSFREKDFKTAIDCYSQFIDVGTMVSPPTVFGRRSLCYLLCDQPDALRDAMQAQCVYPDWPTAFYMQSVALAKLNM (+25aa)
At3g02880 347 FFDSPMSMAVTRLEIEVSHSSGSPNPVSD
At5g16590 353 YFDSPPTMPEVTRLEIEVSRSPA SPGLSD
At3g17840 356 HPDKRPVMEVVRRIQELRQSGADRVG
At5g58300 330 VPEVRPTMDVVVRMIEETRVSDSETTRPSSDDNSKPKDSNVQV
At3g08680 338 HPDSRPSMEVVMMEETRPSGSGPGSGNRASSPEMIRSSDSPV
At2g26730 346 VPDQRPVMQVLRMIEDVNRSET-TDDGLRQSSDDPSKSGSEGQTPPGESRTPPRSVTP
At5g53320 318 LPEKRPNMIEVVRMVEETRPEKLAGSYRSEVSTGATTPIGSLSGSPYIL
At2g36570 394 QPEKRPIMAEVVKMVEETRVEQSPVGEDFDESRSMSPLATTDG
At3g51740 332 SEAAERBEANQVVEQLEETRPETEVEVETETTPFGSGGEGKDLGSNEE
At3g24660 335 VTTVRPMSMEVVKQLEENRPNRSALYSPTETRSDAETPF
At5g10020 429 VNE-RPNTRQVLDHLTISA
At2g27060 432 AEE-RPDMKLVSQELSRIVLKRRTAI
At1g25320 367 SPEKRPMPKHADALTOCLQ
At2g01210 375 SPEKRPTRMHVSDTLDRIPVAGD
At5g67200 355 SEEQRPIMRQVIKMIQELKESVMAEENDPFR
At4g22730 357 IPNNRPNIEITLLENINCWKE
At2g16250 352 KPTRRPLMRHIVNALENPLKVVREDTNSGSGSSRLRTNSSRGSWNAIFGSRWQASADVTAQAGATTSGGGGGGNGLRNSGSGSSGRNNNNNGNSSSSRRRQSEIEVPEPAAYGVVEDNL
At5g13290 317 KRDPFLVLRVCKRR

Legend:

- S** denotes an unambiguously assigned phosphorylation site;
- ST** denotes a phosphorylation site on one of two neighbouring S or T residues;
- S** denotes a phosphorylation site in one of several related proteins that generate the same tryptic peptide.