



<b>At3g61130</b>	LDWRERLAMQSVRSLSFSKEILDVIATSTADLGPLSLDSFKKNNLSASWRGTGVDPSFRHS	120
At2g46480	-----MTDACCLKGNEDKMVPRFGHGTWIGKAFN--	29
At4g38270	NIRLGRVKMGDLSPSWVLENPAYQVSRKTKGSQLVIPRDSFQNDTGMEDNASHSTTNQTD	116
At5g47780	LNLLPRE-----SPAVLRGGLVGAVYSDKNSRRLDQLSARVLSATD-	95
At2g30575	R-----LTAIEQDE-EGLKEPKRILQ-DRDFNSVVLSSNSD	91
At1g06780	R-----LSAIEHEDGEGLKGPRLILFKDGEFNSSAES----	88
At2g38650	SPGFVTVQPASSFESFTRINATKHTQRDVSERVDEVLQKINPVLPKKSDINVGSRD VNAT	108
At3g25140	-----MANHHRLLRGGGSPAI I-	17
At3g02350	-----MAVAFRGGRGVGVSGQS-	17
At2g20810	-----MRRRGGDSFRR-	11
At1g18580	-----MRRWPVDHRR-	10
At5g54690	-----	
At3g01040	-----	
At5g15470	-----MRSGRRPQGRRIAIRNETETELRSRIGESGSEKRNL	37
At3g58790	-----	
At1g19300	-----	
At3g50760	-----	
At1g13250	-----	
At3g06260	-----	
At1g02720	-----	
At4g02130	-----	
At3g62660	-----	
At1g24170	-----	
At1g70090	-----	
At3g28340	-----	
At1g54940	TKTHNSRGKIFMIYLILVLSLLGLLIP-----FKP----	33
At1g08990	-----	
At4g33330	MKMAPSKSALIRFNLVLLGFSFLLYTAI-----FFHPSSS	42
At1g77130	SSPMESRHRLSFSNEKTSRRRFQRIEKG-----VKFNT	37
At3g18660	TTGGDSRRRLSASIEAICKRRFRNRNSKGGGRSDMVKPFNIINFSTQDKNSSCCCF'TKFQI	72
At1g56600	-----	
At1g09350	-----	
At2g47180	-----	
At1g60450	-----	
At1g60470	-----	
At4g26250	-----	
At5g23790	-----	

<b>At3g61130</b>	ENPATPDVKSNNLNEKRDSISKDSIHQKVETPTKIHRRLREKRREMRANELVQHNDTTI	180
At2g46480	-----DTPPEMLHERSLRQEKRLERANELMN--DDSL	58
At4g38270	ES-----ENQFPNVDFASPAKLKRQILRQERRGQRTLELIRQEKETD	158
At5g47780	-----DDTHSHTDISIKQVTHDAASDSHINRENMHV	126
At2g30575	KS-----NDTVQSNEGDQKNFLSEVDKGNNHKPKEE-QAVSQKTTVSSNAE	136
At1g06780	-----DGGNTYKNREEQVIVSQKMTVSSDEK	114
At2g38650	SG-----TDSKKRGLPVSPTVVANPSPANKTKSEASYTG	142
At3g25140	-----GGR---ITLTAFASTIALFLFTLSFFFASDS	45
At3g02350	-----TGLRSFFSYRIFISALFSFLFLATFSVVLNS	48
At2g20810	-----AGRRKISNVVWVLS--GIALLLFFLILSKA	40
At1g18580	-----RGRRLSSWIWFLGFSFSVAGLVLFIVQHYH	41
At5g54690	-----MQLHISPS-LRHVTVVT-----GKG	19
At3g01040	-----	
At5g15470	IG-----SDVGMQLHISPS-MRSITISS-----SNE	62
At3g58790	-----MKFYISATGIKKVTISNPGVGIGKGS	27
At1g19300	-----	
At3g50760	-----	
At1g13250	-----	
At3g06260	-----	
At1g02720	-----	
At4g02130	-----	
At3g62660	-----	
At1g24170	-----	
At1g70090	-----	
At3g28340	-----	
At1g54940	-----LFRITSPSSTLRIDLPSQVKNKPKWLRLIRNYL	67
At1g08990	-----	
At4g33330	VYFSSGASFVGCSEFRDCTPKVVRGVKMQELVEENEINKKDLLTASNQTKLEAPSFMEEIL	102
At1g77130	LKLVLICIMLGALFTIYRFRYPPLQIPEIPTSFGLTTDPRYVATAEINWNHMSNLVEKHV	97
At3g18660	VKLLLFILLSATLFTIYS--PEAYHHSLSHSSSRQDPRYFSDLDINWDDVTKTLENIE	130
At1g56600	-----	
At1g09350	-----	
At2g47180	-----	
At1g60450	-----	
At1g60470	-----	
At4g26250	-----	
At5g23790	-----	



<b>At3g61130</b>	--LKNKNDLLQELQARLKDSQ-----RVLGEATSDADLPRSAHEKLRAMGQVLA	283
At2g46480	--FTNNLALHQEIEETQLMK-----LAWEEESTDIDQEQRVLDSIRDMGQILA	160
At4g38270	--SKNVTNLYVFLMQQCGENK-----RVIGKATSDADLPSSALDQAKAMGHALS	261
At5g47780	--AKANAHFVRELRLRIKEVQ-----RALADASKDSLDPKTAIEKLKAMEQTLA	226
At2g30575	--PGNNSQIVKELRVRTKELER-----ATGDTTKDKYLPKSSPNRLKAMEVALY	240
At1g06780	--PGSNSQVVKELRGRLKELER-----SVGDATKDKDLKSGALRRVKPMENVLY	218
At2g38650	--MPSQSKLTRDMKQNIQEFER-----ILSESSQDADLPPQVDKKLQKMEAVIA	246
At3g25140	LENSKLVRI FADLSRNYTDLINKPTYRALYSDGASIEESVLRQFEKEVKERIKMTRQVI	165
At3g02350	LDASKQLKLFEDLAINFSDLQSKPGLKSAVSDNGNALEEDSFRQLEKEVKDKVK'TARMMI	168
At2g20810	--ESKNLQFAWDLSAQIRNSQ-----LLLSSAATRRSPLTVLESESTIRD---MAVLLY	143
At1g18580	--EHNHLHLAWELSSKIRSCQ-----LLLSKAAMRGQPISFDEAKPIITG---LSALIY	145
At5g54690	PKLLGRRVDSGNVPEAMY-----QVLEQPLSEQELKGRSDIPQTLQDFMS	124
At3g01040	PRLLGRIDDSEQRLVRDF-----YKILNEVSTQEIPDGLKLPESFSQLVS	100
At5g15470	PRLLGRVDDSE-RLARDF-----YKILNEVSTQEIPDGLKLPNSFSQLVS	162
At3g58790	R----GGDTSLKIGEELT-----RALVEETTDHQDVNGRGTGKSLESFDD	128
At1g19300	-----MSQHLLLLLILLSL	13
At3g50760	-----MHSKFILYLSI	11
At1g13250	-----MSS-----LRLRLCL	10
At3g06260	-----MASRSLSYTQLLGLLSFI	18
At1g02720	-----MHWITRFSAFFSAALAM	17
At4g02130	-----MLWITRFAGLFSAAAMAV	17
At3g62660	-----MRFSGLFSAAALVI	13
At1g24170	-----MSSRFSLTVVC	11
At1g70090	-----MRLRFPMKSAVLAFAIF	17
At3g28340	-----MMSGSRLASRLIIIFSI	17
At1g54940	----EEASTCPEIPLPQPEGS DANVDVIVARVPCDGWSANKGLRDVFRQLQVNLAANLAV	176
At1g08990	-----MEGSEADVDVVVKVPCDGFSEKRGLRDVFRQLQVNLAANLVV	43
At4g33330	EEEETEVPTCPEIPMPDFESLEK-LDLVVVKLPCN-YPEEGWRREVLRLQVNLAANLAA	211
At1g77130	EVEEFVPTCPSLPLIQ-IPGKPRIDLVI AKLPCD--KSGKWSRDVARLHLQLAAARVAA	209
At3g18660	EEQETEVVPCPNIPNIK-VPTR-RLDLIVVKLPCR--KEGNWSRDVGRHLHLQLAAATVAA	242
At1g56600	-----	
At1g09350	-----	
At2g47180	-----	
At1g60450	-----	
At1g60470	-----	
At4g26250	-----	
At5g23790	-----	

<b>At3g61130</b>	KAKMQLYDCKLVTGKLRAMLQTADEQVRSLLKKQSTFLAQLAAKTIPNPIHCLSMRLTIDY	343
At2g46480	RAHEQLYECKLVTNKLRLAMLQTVDELENEQTYITFLTQLASKALPDAIHCLTMRLNLEY	220
At4g38270	LAKDELYDCHELAKKFRAILQSTERKVDGLKKKGTFLLIQLAAKTFPKPLHCLSLQLAADY	321
At5g47780	KGKQIQDDCSTVVKKLRAMLHSADEQLRVHKKQTMFLTQLTAKTIPKGLHCLPLRLTTDY	286
At2g30575	KVSRAFHNCPAIAATKLQAMTYKTEEQARAQKKQAAAYLMQLAARTTPKGLHCLSMRLTTEY	300
At1g06780	KASRVFNCPAIAATKLRAMNYNTEEQVQAQKNQAAAYLMQLAARTTPKGLHCLSMRLTSEY	278
At2g38650	KAKSFPVDCNNVDKLLRQILDLTTEDEASFHMKQSVFLYQLAVQTMPKSLHCLSMRLTVEH	306
At3g25140	AEAKESFDNQLKIQKLLKDTIFAVNEQLTNAKKQGAFFSSLIAAKSIPKGLHCLAMRLMEER	225
At3g02350	VESKESYDTQLKIQKLLKDTIFAVQEQLTKAKKNGAVASLISAKSVPKSLHCLAMRLVGER	228
At2g20810	QAQQLHYDSATMIMRLKASIQALEEQMSSVSEKSSKYGQIAAEEVPKSLYCLGVRLTTEW	203
At1g18580	KAQDAHYDIATMTMMTKSHIQALEERANAATVQTTIFGQLVAEALPKSLHCLTIKLTSDW	205
At5g54690	EVKRSKSDAREFAQKLEKEMVTLMEQRTRAKIQEYLVRHVASSSIPQLHCLLAKLANEH	184
At3g01040	DMKNNHYDAKTFALVFRAMVEKFERDLRESKFAELMKNKHFASSIPKGIHCLSLRLTDEY	160
At5g15470	DMKNNHYDAKTFALVLRAMMEKFERDMRESKFAELMKNKHFASSIPKGIHCLSLRLTDEY	222
At3g58790	LVKEMTLKRRDIRAFASVTKKMMERKQVSAKHHELVIWHLASHGIPKSLHCLSLRLTTEY	188
At1g19300	LLLHKPISATT-----IIQKFKEAPQFYNSADCLIDDSED	50
At3g50760	LAVFTVSFAG-----GERFKEAPKFFNSPECLTIENDED-	45
At1g13250	LLLLPITISCVTV-----TLTDLP-----AFREAPAFRNGRECSKTTWIPSD	52
At3g06260	LLLVTTTTMAVRVGVILHKPSAPTLP-----VFREAPAFRNGDQCG-----	59
At1g02720	ILLSPSLQSFSPAAAIRSSHPYADEFKPQQNS--DYSSFRESMPFRNAEQCRSSGEDSGV	75
At4g02130	IVLSPSLQSFPPAAAIRSSP--SPIFR-----KAPAVFNNGDECLSSG---GV	60
At3g62660	IVLSPSLQSFPPAAEAIRSSHLDAYLRFPSDPPPHRFVFRKAPVFRNAADCAAADIDSGV	73
At1g24170	LIALLLPFVVGIRLIPARITSVGDGGGGGGNNGFVKLGPFMFAPEYRNGKECVSSSVNREN	71
At1g70090	LVFIFLPSVVGIRMIIPGRLTAVSATVNG-----FDLGSFVEAPEYRNGKECVSQSLNREN	72
At3g28340	ISTSFFTVESIRLFPDSFDDASS-----DLMEAPAYQNLDCSLVLAKNRLL	63
At1g54940	QSGLRITVNVQAVYVVFIGSCGPMHEIFPCDERVMRVEDYVWYKPYLPRLKQKLLMPVGSQC	236
At1g08990	ESGRNRVDRTVYVVFIGSCGPMHEIFRCDERVKRVGDYVWYRDPDLTRLKQKLLMPPGSCQ	103
At4g33330	KKGKTDWRWKSXVLFWSKCPMIEIFRCDDLEKREADWVLYRPEVVRLQQRSLPVGSCN	271
At1g77130	SS---KGLHNHVHILVSDCFPIPNLFTGQELVARQGNIWLYKPNLHQLRQKLQLPVGSCE	266
At3g18660	SA---KGFFRGHVFFVSRCFPIPNLFRCKDLVSRRGDVWLYKPNLDTLRDKLQLPVGSCE	299
At1g56600	-----MAPEINT--	7
At1g09350	-----MAPEMNN--	7
At2g47180	-----MAPGLTQTA	9
At1g60450	-----MTPETHVD-	8
At1g60470	-----MAPEISVN-	8
At4g26250	-----MAQMSMTVEKS-	11
At5g23790	-----MTMTVEKR-	8

<b>At3g61130</b>	YLLSP----	EKRKFPRSENLENPNLYHYALFSDNVLAASVVVNSTIMNAKDPSKHVFLV	399		
At2g46480	HLLPL----	PMRNFPRRENLENPKLYHYALFSDNVLAASVVVNSTMNAQDPSRHVFLV	276		
At4g38270	FILGFNEEDAVKEDVSQKKLEDP	SLYHYAIFSDNVLATSVVVNSTVLNAKEPQRHVFFHIV	381		
At5g47780	YALNS----	SEQQFPNQEKLEDTQLYHYALFSDNVLATSVVVNSTITNAKHPLKHVFFHIV	342		
At2g30575	FSLDH----	EKRQLL-QQSYNDPDLHYVVFSDNVLASSVVVNSTISSSKEPERIVFHV	355		
At1g06780	FSLDP----	EKRQMPNQNYFDANFNHYVVFSDNVLASSVVVNSTISSSKEPERIVFHV	334		
At2g38650	FKSDS-----	LEDPISEKFSDPSLLHFVVIISDNILASSVVINSTVHVHARDSKNFVFLV	360		
At3g25140	IAHP--	EKYTDEGKDRPRELEDPNLYHYAIFSDNVIAASVVVNSAVKNAKEPKHVFFHV	283		
At3g02350	ISNP--	EKYKDAPPDP--AAEDPTLYHYAIFSDNVIAVSVVVRVVMNAEEPWKHVFFHV	284		
At2g20810	FQNLDLQRTLKERSRVDSKLTDN	SLYHFCVFSDNIIATSVVVNSTALNSKAPEKVVFFHLV	263		
At1g18580	VTEP--	SRHELADENRNSPRLVDNNL	YHFCIFSDNVIAVSVVVNSTVSNADHPKQLVFFHIV	264	
At5g54690	SINAAAR-LQLPEAELVPLVDN	NNYFHFVFLASDNILAASVVAKSLVQNALRPHKIVLHII	243		
At3g01040	SSNAHAR-RQLPSPPELLPVLS	DNAYHHFVLATDNILAASVVVSSAVQSSSKPEKIVFFHVI	219		
At5g15470	SSNAHAR-RQLPSPPEFLPVLS	DNAYHHFVLSTDNILAASVVVSSAVQSSSKPEKIVFFHII	281		
At3g58790	SVNAMAR-MRLPPPEVSRLTDP	SFHHIVLLTDNVLAASVVISSTVQNAVNPKEFVFFHIV	247		
At1g19300	DDVVAKP-----	IFCSRAVHVAMTLDAAAYIRGSVAAVLSVLQHSSCPENIVFFHV	101		
At3g50760	-----	FVCSDKAIHVAMTLDTAYLRGSMAVILSVLQHSSCPQNIIVFFHV	89		
At1g13250	-----	HEHNPSIIHIAMTLDAIYLRGSVAGVFSVLQHASCPENIVFFHI	96		
At3g06260	-----	TREADQIHIAMTLDTNYLRGTMAAVLSLLQHSSTCPENLSFFHL	102		
At1g02720	CN-----	PNLVHVAITLTDIDYLRGSAAVNSILQHS MCPQSVFFHFL	117		
At4g02130	CN-----	PSLVHVAITLTDVEYLRGSAAVNSILQHSVCPEVFFHFI	102		
At3g62660	CN-----	PSLVHVAITLDFEYLRGSAAVHSLKHSSCPESVFFHFL	115		
At1g24170	-FVSSSS-----	SSNDPSLVHIAMTLDSEYLRGSAAVHSLRHSASCPENVFFHFI	121		
At1g70090	-FVSS-----	CDASLVHVAMTLDSEYLRGSAAVHSLRHSASCPENVFFHLI	118		
At3g28340	-LACD-----	PSAVHIAMTLDPAYLRGTVAVHLSILKHTSCPENIFFHFI	107		
At1g54940	IAPSFAQ-FGQEAWRPKHEDN	LASKAVTALPRRLRVAYVTVLHSSSEAYVCGAIALAQSIR	295		
At1g08990	IAP--	LG-QGEAWIQDKNRNLTSEKTTLSSFTAQRVAYVTVLHSSSEYVCGAIALAQSIR	160		
At4g33330	LALP-----	LWAPQGVDKVYDLTKIEAETKRPKREAYVTVLHSSSEYVCGAITLAQSL	325		
At1g77130	LSVP-----	LQAKDNFYSAKAKKEAYATILHSAQFYVCGAIAAAQSIR	309		
At3g18660	LSLP-----	LGIQDRPSLGNPKREAYATILHSAHVYVCGAIAAAQSIR	342		
At1g56600	-----	KLTVPVHSATGGEKRAYVTF	LAGTGDYVKGVVGLAKGLR	46	
At1g09350	-----	KLSY-----	GEKKRAYVTF	LAGTGDYVKGVVGLAKGLR	40
At2g47180	DAMS-----	TVTITKPSLPSVQSDRAYVTF	LAGNGDYVKGVVGLAKGLR	54	
At1g60450	-----	MINASEKAPKE---	RAYVTF	LAGNGDYVKGVVGLAKGLR	44
At1g60470	-----	PMYLSEKAHQAPPRRAYVTF	LAGNGDYVKGVVGLAKGLR	47	
At4g26250	-----	IKADVTVSHDRVKRAYVTF	LAGNKDYWMGVVGLAKGLR	49	
At5g23790	-----	IEADVTVSHEGVERAYVTF	LAGNKDYWMLVVGLAKGLR	46	

<b>At3g61130</b>	TDKLNFGAMNMWFLLN--PPGKATIHVENVDEFKWLNSSYCPVLRQLESAAAMREYYFKA-	456
At2g46480	TDKLNFGAMSMWFLLN--PPGEATIHVQRFEDFTWLNSSYSPVLSQLESAAAMKKFYFKT-	333
At4g38270	TDKLNFGAMKMWFRIN--APADATIQVENINDFKWLNSSYCSVLRQLESARLKEYYFKA-	438
At5g47780	TDRLNYAAMRMWFLDN--PPGKATIQQVQVVEEFTWLNSSYSPVLKQLSSRSMIDYFFRA-	399
At2g30575	TDSLNYPAISMWFLLN--PSGRASIQILNIDEMNVLPLYHAELLMKQNSS-----	403
At1g06780	TDEQNYFAMKQWFIRN--PCKQSTVQVLNIEKLELDDSDMKLSLSAEFRVSFSPGDLLAS	418
At2g38650	TDRMNLGAMQVMFKLK-EYK-GAHVEVKAVEDYTFNLSSYVPVLKQLESANLQKIFYFE--	339
At3g02350	TDRMNLAAAMKVVFKMR-PLDRGAHVEIKSVEDFKFLNSSYAPVLRQLESAKLQKIFYFE--	341
At2g20810	TNEINYAAMKAWFAINMDNLRGVTVEVQKFEDFSWLNASYVPVLKQLQSDTQSYFFS--	321
At1g18580	TNRVSYKAMQAWFLS--NDFKGSAAIEIRSVVEEFSWLNASYSPVVKQLLDTDARAYYFG--	320
At5g54690	TDRKTYFPMQAWFSLH--PLSPAIEVKALHHFDWLSKGGKVPVLEAMEKDQVRVRSQFRGG	301
At3g01040	TDKPTYAGMHSWFALN--SVAPAIVEVKSVMHDFDWTRENVPVLEAVESHNSIRNYYHGN	277
At5g15470	TDKPTYAGMHSWFALN--SVAPAIVEVKGVHDFDWTRENVPVLEAVESHNGVRDYHGN	339
At3g58790	TDKPTYTPMHAWFAIN--SASSPVVEVKGLHQYDWPQEVNFKVREMLDIHRLIWRRHRYQN	305
At1g19300	ASASADASS--LRATIS----SSFPYLD-F'TVYVFNVSVSRLISS-----	140
At3g50760	TSK--QSHR--LQNYVV----ASFPYLK-FRIYPYDVAAISGLIST-----	126
At1g13250	ATHRRSAD---LRRIS----STFPYLT-YHIYHFDPNLVRSKISS-----	134
At3g06260	SLPHFEND---LFTSIK----STFPYLN-FKIYQFDPNLVRSKISK-----	140
At1g02720	VSESQN---LESLIR----STFPKLTNLKIYYFAPETVQSLISS-----	155
At4g02130	AVSEETNL---LESLVR----SVFPRLK-FNIYDFAPETVRGLISS-----	140
At3g62660	VS---ETD---LESLIR----STFPELK-LKVYVFDPEIVRTLIS-----	150
At1g24170	AAEFDSASPRVLSQLVR----STFPSLN-FKVYIFREDTVINLISS-----	162
At1g70090	AAEFDPASPRVLSQLVR----STFPSLN-FKVYIFREDTVINLISS-----	159
At3g28340	ASGTSQGS---LAKTLS----SVFPSLS-FKVYTFEETTVKNLISS-----	145
At1g54940	QSGSHKDMILLHDHTIT-----NKSILGLSAGWNLRLRIDIRISP-----	335
At1g08990	QSGSTKDMILLHDDSI-----NISLIGLSLAGWNLRRVERIRISP-----	200
At4g33330	QTNTKRDLILLHDDSI-----ITKLRALAAAGWKLRRIRIRNP-----	365
At1g77130	MSGSTRDLVILVDETI-----EYHKSGLVAAGWKIQMFQIRIRNP-----	349
At3g18660	QSGSTRDLVILVDDNIS-----GYHRSGLEAAGWQIRTIQIRIRNP-----	382
At1g56600	KAKSKYPLVVAVLPDVP-----EDHRKQLVDQGCVVKEIEPVYPP-----	86
At1g09350	KTKSKYPLVVAVLPDVP-----ADHRRQLLDQGCVIKEIQPVYPP-----	80
At2g47180	KVKSAAYPLVVAVLPDVP-----EEHRRILVDQGCIVREIEPVYPP-----	94
At1g60450	KVKSAAYPLVVAVLPDVP-----EEHREILRSQGCIVREIEPVHPP-----	84
At1g60470	KVKSAAYPLVVAVLPDVP-----EEHREILRSQGCVVREIEPVYPP-----	87
At4g26250	KVKSAAYPLVVAAILPDVP-----EEHRQILLAQGCIIREIEPVYPP-----	89
At5g23790	KVKSAAYPLVVAVLPDVP-----EEHRQILVDQGCIIIRDIEPVYPP-----	86

<b>At3g61130</b>	-----DHP---TSGSSNLKYRNP KYLSMLNHLRFYLP EVYP-KLNKILFLDDDIIVQKD	506
At2g46480	-----ARSESVESGSENLKYRYPKYMSMLNHLRFYIPRIFP-KLEKILFVDDVVVQKD	386
At4g38270	-----NHPSSISAGADNLKYRNP KYLSMLNHLRFYLP EVYP-KLEKILFLDDDIIVQKD	491
At5g47780	-----HHTN----SDTNLKF RNP KYLSILNHLRFYLP EIFP-KLSKVLFLDDDIIVQKD	448
At2g30575	-----DPR IISALNHARFYLPDIFP-GLNKIVLFDHDDVVVQRD	440
At1g06780	-----DPRFISTLNHARFYLPDIFP-GLNKMVLFDHDDVVVQRD	419
At2g38650	-----QQNRTHYLSLFSQSHYLLPKLFD-KLEKVVILDDDDVVVQRD	458
At3g25140	-----NKLENATKDTNMKFRNP KYLSILNHLRFYLP EYYP-KLHRILFLDDDDVVVQKD	392
At3g02350	-----NQAENATKDSHNLKFKNP KYLSMLNHLRFYLP EYYP-KLNKILFLDDDDVVVQKD	394
At2g20810	-----GHN-DDGRTP I--KFRNP KYLSMLNHLRFYIPEVFP-ALKKVVFLDDDDVVVQKD	371
At1g18580	-----EQTSQDTISEP--KVRNP KYLSLLNHLRFYIPEIYP-QLEKIVFLDDDDVVVQKD	371
At5g54690	SSVIVANNKENPVVAAKLQALSPKYNSLMNHIRIHLPELFP-SLNKVVFLDDDIVIQT	360
At3g01040	HIAGANLSETTPRTFASKLQSRSPKYISLLNHLRIYLP ELPFP-NLDKVVFLDDDIVIQKD	336
At5g15470	HVAGANL TETTPRTFASKLQSRSPKYISLLNHLRIYIPELFP-NLDKVVFLDDDIVVQGD	398
At3g58790	LKDSDFS FVEG--THEQSLQALNP SCLALLNHLRIYIPKLF P-DLNKIVLLDDDDVVVQSD	362
At1g19300	-----SIRSALDCPLNYARSYLADLLPPCVR RVVYLDSDLILVDD	180
At3g50760	-----SIRSALDSP LNYARNYLADILPTCLSRVVYLDSDLILVDD	166
At1g13250	-----SIRRALDQPLNYARIYLADLLPIAVRRVIYFDSDLVVVDD	174
At3g06260	-----SIRQALDQPLNYARIYLADIIPSSVDRIIYLDSDLVVVDD	180
At1g02720	-----SVRQALEQPLNYARNYLADLLEPCVKRVIYLDSDLVVVDD	195
At4g02130	-----SVRQALEQPLNYARSYLADLLEPCVNRVIYLDSDLVVVDD	180
At3g62660	-----SVRQALEQPLNYARNYLADLLEPCVRRVIYLDSDLIVVDD	190
At1g24170	-----SIRLALENPLNYARNYLGDILDRSVERVIYLDSDVITVDD	202
At1g70090	-----SIRQALENPLNYARNYLGDILPCVDRVIYLDSDIIVVDD	199
At3g28340	-----SIRQALDSP LNYARSYLSEILSSCVSRVIYLDSDVIVVDD	185
At1g54940	-----FSQ---KDSYNEWNYSKLRVWQVTDYDKLVFIDADFII LKK	373
At1g08990	-----FSK---KRSYNEWNYSKLRVWQVTDYDKLVFIDADFII VKN	238
At4g33330	-----LAE---KDSYNEYNYSKFR LWQLTDYDKVIFIDADIIVLRN	403
At1g77130	-----NAV---PNAYNEWNYSKFR LWQLTEYSKIIIFIDADMLILRN	387
At3g18660	-----KAE---KDAYNEWNYSKFR LWQLTDYDKIIFIDADLLILRN	420
At1g56600	-----ENQTEFAMAYYVINYSKLR IWKFVEYENKMIYLDGDIQVFDN	127
At1g09350	-----DNQQTQFAMAYYVLNYSKLR IWKFVEYSKLIYLDGDIQVFN	121
At2g47180	-----ENQQTQFAMAYYVINYSKLR IWKFVEYSKMIYLDGDIQVYEN	135
At1g60450	-----DSQDAYARAYYIINYSKLR IWNFEEYENKMIYLDADIQVFGN	125
At1g60470	-----DNQVEFAMAYYVLNYSKLR IWNFEEYSKMIYLDADIQVFDN	128
At4g26250	-----ENKTGYSMAYYVINYSKLR IWKFVEYEEKMIYLDGDIQVFSN	130
At5g23790	-----ENTTGYSMAYYVINYSKLR IWKFVEYEEKMIYLDGDIQVFKN	127

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<b>At3g61130</b>	LTPLWEVNLNGKVN GAVETCGE-----SFHRFDKYL NFN SNP HIARNFNPN-----ACGWAY	557
At2g46480	LTPLWSIDLK GKVN-----ENFDPK-----FCGWAY	412
At4g38270	LAPLWEIDMQKVN GAVETCKE-----SFHRFDKYL NFN SNP KISENF DAG-----ACGWAF	542
At5g47780	LSGLWSVDLKG NVGAVETCGE-----SFHRFDRYL NFN SNP LISKNF DPR-----ACGWAY	499
At2g30575	LTRLWSLDMTGKV V GAVETCLEGD--PSYRSMDSF INFSDAWVSQK FDPK-----ACTWAF	494
At1g06780	LSRLWSIDMKGV V GAVETCLEGE--SSFRSMSTF INFSDTWVAGKFS PR-----ACTWAF	473
At2g38650	LSPLWDLDMEGKVN GAVK SCTVR-----LGQLRSLK RGNFDTN-----ACLWMS	502
At3g25140	LTGLWEIDMDGKVN GAVETCFG-----SFHRYAQYMF SHPLIKEKFNPK-----ACAWAY	443
At3g02350	VTGLWKINLDGKVN GAVETCFG-----SFHRYGQYLN FSHPLIKENFNPS-----ACAWAF	445
At2g20810	LSSLF SIDLNKNV GAVETCME-----TFHRYHKYLN YSHPLIRSHFDPD-----ACGWAF	422
At1g18580	LTPLFSLDLHG NVGAVETCLE-----AFHRYKYLN FSNPLISSK FDPQ-----ACGWAF	422
At5g54690	LSPLWDIDMNGKVN GAVETCRGEDK FVMSKKFKSYLN FSNPTIAKNFNPE-----ECAWAY	416
At3g01040	LSPLWDIDLNGKVN GAVETCRGEDVWVMSKRLRNYFNF SHPLIAKHL DPE-----ECAWAY	392
At5g15470	LTPLWDVDLGGKVN GAVETCRGEDEWVMSKRLRNYFNF SHPLIAKHL DPE-----ECAWAY	454
At3g58790	LSSLWETDLNGKVV GAVVDSWCGDNC CPGRKYDYFNF SHPLISSNLVQE-----DCAWLS	418
At1g19300	IAKLAATDLGRDSV LA APEYCNAN----FTSYFTSTFW SNPTLSLTFADR---KACYFNT	233
At3g50760	ISKLFSTHIP TDV VLA APEYCNAN----FTTYFTPTFW SNPSLITLSLNR RATPCYFNT	222
At1g13250	VAKLWRIDLR-RHV VGAPEYCHAN----FTNYFTSRFW SSQGYKSALKDR---KPCYFNT	226
At3g06260	IEKLWHVEME-GKVVA APEYCHAN----FTHYFTTRTFW SDPVLVKVLE GK---RPCYFNT	232
At1g02720	IVKLWKTGLG-QRT IGAPEYCHAN----FTKYFTGGFW SDKRFGN GTFKGR---NPCYFNT	247
At4g02130	IAKLWKTSLG-SRI IGAPEYCHAN----FTKYFTGGFW SEERFSGTFRGR---KPCYFNT	232
At3g62660	IAKLWMTKLG-SKT IGAPEYCHAN----FTKYFTPAFW SDERFSGAFSGR---KPCYFNT	242
At1g24170	ITKLWNTVLTGSRV IGAPEYCHAN----FTQYFTSGFW SDPALPGLISGQ---KPCYFNT	255
At1g70090	ITKLWNTSLTGSRI IGAPEYCHAN----FTKYFTSGFW SDPALPGFFSGR---KPCYFNT	252
At3g28340	IQKLWKI SLSGSR IGAPEYCHAN----FTKYFTSDFW SDKLSVDFSK---TPCYFNT	238
At1g54940	LDHLFYYPQLSASGNDK VLFNSGIMVLEPSACMF KDLMEKQKLESYNGG---DQG--FL	428
At1g08990	IDYLF SYPQLSAGN NKVLFNSGVMVLEPSACL FEDLMLKSF KIGSYNGG---DQG--FL	293
At4g33330	LDLLFHF PQMSATGN DVWLYNSGIMVIEPSNCTFTT IMSQRSEIVSYNGG---DQG--YL	458
At1g77130	IDFLF EFPEISATGN NATL FNSGLMVVEPSNSTF QLLMDNINEVVS YNGG---DQG--YL	442
At3g18660	IDFLF SMPEISATGN NGT L FNSGVMVIEPCNCTF QLLMEHINEIES YNGG---DQG--YL	475
At1g56600	IDHLFDL P NQGFYAVMDC FCEKTWSHSPQYKIGYCQQCPDKV TWPEAKLG---PKPPLYF	184
At1g09350	IDHLFDL PDGNFYAVKDC FCEKTWSHTPQYKIGYCQQCPDKV TWPESELG---PKPPLYF	178
At2g47180	IDHLFDL PDG YLYAVMDC FCEKTWSHTPQYKIRYCQQCPDKV QWPKAELG---EPPALYF	192
At1g60450	IDDLFDMQDGYLHGVL SCFCEKIWSY TPLYSIGYCQYCPEKVVWPAEMES---APSPYF	182
At1g60470	IDHLFDLSDAYFYAVMDC FCEKTWSHSLQYSIGYCQQCPEKVTWPEDMES---PPPPLYF	185
At4g26250	IDHLFDTPRGYLYAVKDC FCEISWSKTPQFKIGYCQQCPEKVTWPVESLG---SPPPVYF	187
At5g23790	IDHLFDTPRGYLYAVKDC FEVSWSKTPQYKIGYCQQSPEKVTWPVESLG---APPPVYF	184

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<b>At3g61130</b>	GMNMFDLKEWKKRDITGIYHKWQNMNENR--TLWKLGTLPPLGITFYGLTHPLNKAHWVL	615
At2g46480	GMNIFDLKEWKKNNITETIYHFQNLNENR--TLWKLGTLPPLGITFYNLTPQLQRKWHLL	470
At4g38270	GMNMFDLKEWRKRNITGIYHYWQDLNEDR--TLWKLGSPLPPGLITFYNLTYAMDRSWHVL	600
At5g47780	GMNVFDLDEWKRQNI TEVYHRWQDLNQDR--ELWKLGTLPPLGITFWRRRTYPLDRKWHIL	557
At2g30575	GMNLFDLLEWRRQELTSVYLKYFDLGVKG--HLWKAGGLPVGWLTFFGQTFPLEKRWNVG	552
At1g06780	GMNLIDLLEWRIRKLTSTYIKYFNLGTKR--PLWKAGSLP IQASLTFYRQTLALDKRWHVM	531
At2g38650	GLNVVDLARWRALGVSETYQKYKEMSSGD--ESSEAIALQWALLTFYRQDQVYALDDKWAALS	561
At3g25140	GMNFFDLDAWRREKCTEYHYWQNLNENR--ALWKLGTLPPLGITFYSTTKPLDKSWHVL	501
At3g02350	GMNIFDLNAWRREKCTDQYHYWQNLNEDR--TLWKLGTLPPLGITFYSKTKSLDKSWHVL	503
At2g20810	GMNVFDLVEWRKRNVGTGIYHYWQEKNVDR--TLWKLGTLPPLGLLTFYGLTEALEASWHIL	480
At1g18580	GMNVFDLIAWRNANVTARYHYWQDQNRER--TLWKLGTLPPLGLLSFYGLTEPLDRRWHVL	480
At5g54690	GMNVFDLAAWRRNTNISSTYYHWLDENLKSDSLWLQGLTLPPLGLIAFHGHVQTIDPFWHML	476
At3g01040	GMNIFDLRTWRKTNIRETYHSWLKENLKSNLTMWKLGTLPPLALIAFKGHVQPIDSSWHML	452
At5g15470	GMNIFDLQAWRKTNIRETYHSWLRENLKSNLTMWKLGTLPPLALIAFKGHVHIIDSSWHML	514
At3g58790	GMNVFDLKAWRQTNITEAYSTWLRLSVRSGLQLWQPGALPPTLLAFKGLTQSLEPSWHVA	478
At1g19300	GVMVIDLSRWREGAYTSRIEEMAMQKR--MRIYELGSLPPFLLVFAGLIKPVNHRWNQH	291
At3g50760	GVMVIELKKWREGDYTRKIEIEMELQKR--IRIYELGSLPPFLLVFAGNIAPVDHRWNQH	280
At1g13250	GVMVIDLGKWRERRVTVKLETWMIQKR--HRIYELGSLPPFLLVFAGDVEPVEHRWNQH	284
At3g06260	GVMVDVNVKWRKGMYTQKVEEWMTIQKQ--KRIYHLGSLPPFLLIFAGDIKAVNHRWNQH	290
At1g02720	GVMVIDLKKWRQFRFTKRIEKWMEIQKI--ERIYELGSLPPFLLVFAGHVAPISHRWNQH	305
At4g02130	GVMVIDLKKWRRGGYTKRIEKWMEIQRR--ERIYELGSLPPFLLVFSGHVAPISHRWNQH	290
At3g62660	GVMVMDLERWRRVGYTEVIEKWMEIQKS--DRIYELGSLPPFLLVFAGEVAPIEHRWNQH	300
At1g24170	GVMVMDLVRWREGNYREKLEQWMQLQKK--MRIYDLGSLPPFLLVFAGNVEAIDHRWNQH	313
At1g70090	GVMVMDLVRWREGNYREKLETWMIQKK--KRIYDLGSLPPFLLVFAGNVEAIDHRWNQH	310
At3g28340	GVMVIDLERWREGDYTRKIENWMIQKED--KRIYELGSLPPFLLVFGGDIEAIDHQNQH	297
At1g54940	NEIFVWWHRLSKRVNTMKYFDE--KNHRRHD-----LPENVEGLHYLG-LKPWVCYRD	478
At1g08990	NEYFVWWHRLSKRLNTMKYFGDESRRHDKARN-----LPENLEGIHYLG-LKPWVCYRD	345
At4g33330	NEIFVWWHRLPRRVNFKNFWSNTTKERNIKNNLFA-AEPPQVYAVHYLG-WKPWLCYRD	516
At1g77130	NEIFTWHRIPKHMNFKLHFWEGDEPEIKMKTSFLGADPPILYVLHYLGYNKPWLCFRD	502
At3g18660	NEVFTWHRIPKHMNFKLHFWIGDEDDAKRKKTELFGAEPVLYVLHYLG-MKPWLCYRD	534
At1g56600	NAGMFVYEPNLSYHNLLLETVKIVPPTLFAEQDFLNMYFKDIYKPIPPVYNLVLAMLWRH	244
At1g09350	NAGMFVYEPSPITYYNLLETLKVVPPTPFAEQDFLNMYFKDIYKPIPPVYNLVLAMLWRH	238
At2g47180	NAGMFLYEPNLETYEDLLRTLKITPPTPFAEQDFLNMYFKKIYKPIPLVYNLVLAMLWRH	252
At1g60450	NAGMFVFEPNLTYESLLQTLQVTPPTPFAEQDFLNMFVFKVFKVSPVYNLILSVLWRH	242
At1g60470	NAGMFVFEPSPLTYESLLQTLKITPPSPFAEQDFLNMFVFEKVYKPIPLVYNLVLAMLWRH	245
At4g26250	NAGMLVFEPNLLTYEDLLRVVQITPTTYFAEQDFLNEYFTDIYKPIPSTYNLVMAMLWRH	247
At5g23790	NAGMLVFGPNLVITYEDLLRVVQITPTTYFAEQDFLNIYFRDIYKPIPSTYNLVMAMLWRH	244

<b>At3g61130</b>	<b>GLG</b> -YNPSIDKKDIEN--AAVVHYNGNMKPWLELAMSKYRPYWTKYIKFDHPYLRRCNLH	672
At2g46480	<b>GLG</b> -YDKGIDVKKIER--SAVIHYNGHMKPWTEMGISKYQPYWTKYTNFDHPYIFTCRLF	527
At4g38270	<b>GLG</b> -YDPALNQTAIEN--AAVVHYNGNYKPWLGFLAFAYKPYWSKYVEYDNPYLRRCDIN	657
At5g47780	<b>GLG</b> -YNPSVNQRDIER--AAVIHYNGNLKPWLEIGIPRYRGFWSKHVDYEHVYLRECNIN	614
At2g30575	<b>GLG</b> -HESGLRASDIEQ--AAVIHYDGMKPWLDIGIDKYKRYWNIHVPYHHPHLQRCNIH	609
At1g06780	<b>GLG</b> -RESGVKAVDIEQ--AAVIHYDGMKPWLDIGKENYKRYWNIHVPYHHTYLQCCNLQ	588
At2g38650	<b>GLG</b> -YDYINAQAIAKN--AAILHYNGNMKPWLELGI PNKYKRYWRRHLSREDRFLSDCNVN	618
At3g25140	<b>GLG</b> -YNPSISMDEIRN--AAVVHFNGNMKPWLDIAMNQFRPLWTKHVYDYLEFVQACNFG	558
At3g02350	<b>GLG</b> -YNPGVSMDEIRN--AGVIHYNGNMKPWLDIAMNQYKSLWTKYVDNEMEFVQMCNFG	560
At2g20810	<b>GLG</b> -YTN-VDARVIEK--GAVLHFNGNLKPWLKIGIEKYKPLWERYVDYTSPFMQCCNFH	536
At1g18580	<b>GLG</b> -YDVNIDNRLIET--AAVIHYNGNMKPWLKLAIGRYKPFWLKFLNSSHPYLQDCVTA	537
At5g54690	<b>GLG</b> YQETTS-YADAES--AAVVHFNGRAKPWLDIAFPHLRPLWAKYLDSSDRFIK SCHIR	533
At3g01040	<b>GLG</b> YQSKTN-LENAKK--AAVIHYNGQSKPWLEIGFEHLRPFWTKYVNYSNDFIKNCHIL	509
At5g15470	<b>GLG</b> YQSKTN-IENVKK--AAVIHYNGQSKPWLEIGFEHLRPFWTKYVNYSNDFIKNCHIL	571
At3g58790	<b>GLG</b> SRSVKSPQEILKS--ASVLHFSGPAKPWLEISNPEVRSWYRYVNSSDIFVRKCKIM	536
At1g19300	<b>GLG</b> GDNFRGLCRDLHPGPVSLHWSGKGPWARLDAGRPCPLDALWAPYDLLQTPFALDS	351
At3g50760	<b>GLG</b> GDNFRGLCRDLHPGPVSLHWSGKGPVRLDDGRPCPLDALWVPYDLLESRFDLIE	340
At1g13250	<b>GLG</b> GDNLEGLCRNLHPGPVSLHWSGKGPWLRLDSRRPCPLDSLWAPYDLFRYSPLISD	344
At3g06260	<b>GLG</b> GDNFEGRCRTLHPGPI SLLHWSGKGPWLRLDSRKPCIVDHLWAPYDLYRSSRHSLE	350
At1g02720	<b>GLG</b> GDNVRGSCRDLHSGPVSLLHWSGSGKPWLRLDSKLPCLDTLWAPYDLYKXSH----	361
At4g02130	<b>GLG</b> GDNVRGSCRDLHHPGPVSLHWSGSGKPWLRLDSKRPCPLDALWTPYDLYRHSH----	346
At3g62660	<b>GLG</b> GDNVRGSCRDLHHPGPVSLHWSGSGKPWFRLDSRRPCPLDTLWAPYDLYGHYSR---	357
At1g24170	<b>GLG</b> GDNIRGSCRSLHPGPVSLHWSGKGPVRLDEKRPCPLDHLWEPYDLYKHKIERAK	373
At1g70090	<b>GLG</b> GDNVRGSCRSLHKGVPVSLHWSGKGPVRLDEKRPCPLDHLWEPYDLYEHKIERAK	370
At3g28340	<b>GLG</b> GDNI VSSCRSLHHPGPVSLI HWSGKGPVRLDDGKPCPIDYLWAPYDLHKSQRQYLQ	357
At1g54940	YDCNWDISERRVFASDSVHEKWWKVDKMSPEQLKGYCGLNLMKMEKNVEKWRKMAKLNFGP	538
At1g08990	YDCNWDLKTRRVYASESVHARWVKVYDKMPKLLKGYCGLNLMKMEKNVEKWRKMAKLNFGP	405
At4g33330	YDCNYDVDEQLVYASDAAHVRWVKVHDMSDDALQKFCRLTKKRRTINWERRKARLRGST	576
At1g77130	YDCNWNVDIFQEFASDEAHTWVRVHDAMPENLHKFCLLRSKQKAQLEWDRRQAEKGNYK	562
At3g18660	YDCNFNSDIFVEFATDIAHRKWWMVHDAMPQELHQFCYLRSKQKAQLEYDRRQAEAAANYA	594
At1g56600	PENIELDQVKVVHYCAAGAKPWRFTGEEENMDREDIKMLVKKWWDIYNDES LDYKNVVG	304
At1g09350	PENIELNEAKVVHYCAAGAKPWRFTGQEGNMEREDIKMLVKKWWDIYNDES LDYKNFNH	298
At2g47180	PENVELGKVKVVHYCAAGSKPWRYTGEANMEREDIKMLVKKWWDIYDDES LDYKPKPTV	312
At1g60450	PGKVDLESVKVVHYCPPGSKPWRYTGEENMDREDVKMLIKKWWDIYNDES LDFKPKSPA	302
At1g60470	PENVELEKVKVVHYCAAGSKPWRYTGEANMDREDIKMLVDKWWDVYNDES LDFKSKIPA	305
At4g26250	PEHIDLQISVIHYCANGSKPWRFDTEEHMDREDIKMLVKKWWDIYEDSS LDYKNFVET	307
At5g23790	PEHIDLQISVVHYCANGSKPWKFDEAEHMDREDIKMLVKKWWEIYEDSS LDYKNFVET	304

<b>At3g61130</b>	E-----	673
At2g46480	E-----	528
At4g38270	E-----	658
At5g47780	P-----	615
At2g30575	D-----	610
At1g06780	A-----	589
At2g38650	P-----	619
At3g25140	L-----	559
At3g02350	L-----	561
At2g20810	-----	
At1g18580	-----	
At5g54690	AS-----	535
At3g01040	E-----	510
At5g15470	E-----	572
At3g58790	N-----	537
At1g19300	-----	
At3g50760	S-----	341
At1g13250	S-----	345
At3g06260	E-----	351
At1g02720	-----	
At4g02130	-----	
At3g62660	-----	
At1g24170	DQSLLG FASLSELTDSSFL-----	393
At1g70090	DQSLFG FSSLSELTEDSSFF-----	390
At3g28340	YNQELEIL-----	365
At1g54940	DRHWEIEVRDPRKTNLLVQ-----	557
At1g08990	ENHWKIRIKDPRKKNRLSQ-----	424
At4g33330	DYHWKINVTDP RRRRSYLIG-----	596
At1g77130	DGHWKIKIKDKRLKTCFEDFCFWESMLWHWGETNSTNNSSTTTTSSPPHK TALPSL----	618
At3g18660	DGHWKIRVKDPRFKICIDKLCNWKSM L RHWGESNWTDYESFVPTPPAITVDRRSSLPGHN	654
At1g56600	----DSHKKQQT LQQF IEALSEAGALQYVKAPSAA-----	335
At1g09350	CGQKEDVHRKPKTLPQFFTDLSEADVLQCAKAPSAA-----	334
At2g47180	V----DTEVDLVNLKPFITALTEAGRLNYVTAPSAA-----	344
At1g60450	D-----LEATVLESTIIASVTEAPLSYSPAAPSAA-----	332
At1g60470	D-----AEETVTKSSILASVLEPEMTYFPAPSAA-----	334
At4g26250	ES-----KLSPINATLASKESVGDVLI SLAPSAA-----	336
At5g23790	ES-----KLN PVTATLASKKLVGDVLTSLAPSAA-----	333

<b>At3g61130</b>	-	
At2g46480	-	
At4g38270	-	
At5g47780	-	
At2g30575	-	
At1g06780	-	
At2g38650	-	
At3g25140	-	
At3g02350	-	
At2g20810	-	
At1g18580	-	
At5g54690	-	
At3g01040	-	
At5g15470	-	
At3g58790	-	
At1g19300	-	
At3g50760	-	
At1g13250	-	
At3g06260	-	
At1g02720	-	
At4g02130	-	
At3g62660	-	
At1g24170	-	
At1g70090	-	
At3g28340	-	
At1g54940	-	
At1g08990	-	
At4g33330	-	
At1g77130	-	
At3g18660	L	655
At1g56600	-	
At1g09350	-	
At2g47180	-	
At1g60450	-	
At1g60470	-	
At4g26250	-	
At5g23790	-	