Table S1 *PgSS* and *PgSE* primer sequences

Gene Name	Accession number	（Forward，5'→3'）	（Reverse，5'→3'）
PgSS1	Pgchr0219270T	TGGTGGAAAGAAGCTGTGGA	TTGCGCATCATTGATCCGAG
PgSS2	Pgchr0535010T	GATACCAAAGTCGCGCATGT	GCACAGCCTTGGTTGAGTTT
PgSS3	Pgchr0708670T	TCTGTTGCTCTGATGTGGGT	AAATTCCTCTCCCGGGCTAG
PgSS4	Pgchr0901060T	CTATGTGTGGTGCAGGAGGA	ATCAAGCATGTCGAAAGGGC
PgSE1	Pgchr0127850T	AAGACGAATGTGGCTCCTCA	GATGTGGATCAGCTGGCATG
PgSE2	Pgchr0217330T	TGGAATGACTGTCGCTCTGT	CTTGCGGAGGGTGTAAAAGG
PgSE3	Pgchr0220400T	TGGAATGACTGTCGCTCTGT	TGCCATTAATCTCACCTTGCG
PgSE4	Pgchr0229230T	TCCATCGCCCATCTTGTTCT	GGGATCTGAGGAGCTACGAC
PgSE5	Pgchr0328780T	CTGTTGGGATTTGCTGTGCT	GCAGGCTTTGGGAAACTTCT
PgSE6	Pgchr0328800T	AAGACTGTCGTGGCTTCTCA	ATCCCCAAGTAAGAGTGCCC
PgSE7	Pgchr0508870T	TGGAATGACTGTCGCTCTGT	GCCACTAATCTCACCTTGCG

Table S2 Protein sequences of *SS* gene families in six different plant species

Species	Gene ID	Protein sequence
Eleutherococcus senticosus	Ese07G001493.t1	MSVTLLGVVFPNSEISNVFGYLENAREGSRLLDSSRSIS RDRNLLCTSRLKKGNIHKWSSCSLNPELRYSCLGCTGL KNGGNFPVHSSMVVNPGGEMTVSSEQKVYDVVLKQ AALVKKQLRSSEDLDVKPDIILPGTLSLLSEAYDRCGE VCAEYAKTFYLGTLLMTPERRRAIWAIYVWCRRTDEL VDGPNASHITPSALDRWESRLDDIFKGRPFDMLDAALS DTVTKFPVDIQPFKDMIDGMRMDLKKSRYKNFDELYL YCYYVAGTVGLMSVPIMGIAPDSQATTESVYNAALAL GLANQLTNILRDVGEDARRGRVYLPQDELAQAGLSDE DIFAGKVTDKWRNFMKKQIKRARMFFDEAEKGVTEL SSASRWPVWASLLLYRQILDEIEANDYNNFTRRAYVSK PKKILALPVAYAKALVAPSREASPMVKATRTSNS
	Ese15G000484.t1	MSVALLGVVFPNSEISNVFEYLENAREGSRLLDSSRSIF RDRNLLCTGRHKKDKIHKWSSCSLNAELRYSCLGCSG LENGGKFPVHSSMVVNPAGEITVSSEQKVYDVVLKQA ALVKKHLRSSEDLDVKPDIIFPGTLGLLSEAYDRCGEV CAEYAKTFYLGTLLMTPERRRAIWAIYVWCRRTDELV DGPNASHITPSALDRWESRLDDLFKGCPFDMLDAALS DTVTKFPVDIQPFKDMIDGMRMDLKKSRYKNFDELYL YCYYVAGTVGLMSVPIMGIAPDSLATTESVYNAALAL GIANQLTNILRDVGEDAQRGRVYLPQDELEQAGLSDE DIFAGKVTDKWRNFMKKQIKRARMFFDEAEKGVTEL SSASRWPVWASLLLYRQILDEIEANDYNNFTRRAYVSK PKKILALPVAYAKALVAPSRAASPMVKAP
	Ese08G001983.t1	MAATTFSLVRAVCCPKESNGRFHKKNNGGEITKSRRL RSCSVNNNLSTGGVSALAMASGVVGRSSEERVYEVVL KQAALVREERTTGRPLGFKTTSSSSDYNMSSWDLLNE AYDRCGEVCAEYAKTFYLGTLLMTPERRRAVWAIYV WCRRTDELVDGPNASHITPKALDRWETRLNDLFQGRP YDMYDAALSDAVSTYPVDIQPFKDMIDGMRMDLKKS RYQTFDELYLYCYYVAGTVGLMTVPVMGIAPESKAST ESVYNAALALGIANQLTNILRDVGEDARRGRIYLPQDE LDLAGLTPDYIFRGKVTDKWRRFMKGQIERARMFFNE AEKGVAELSSASRWPVWASLLLYRQILDAIEANDYDN FTKRAYVGKAKKLVSLPVAYGRALLSPSSSVGELLTR
	Ese09G001742.t1	MSVALVWVVSPSSEISNCLGYLEIAREGSRLLDSSRLIS RDRNLNSCRLNKGKIQRWSTGTLNAELRYSCLGSSRL QNGSKFTVHSSMVANPTGEMTLSSEQKVYDVVVKQA ALVKRQLRSSEDLEVKPDIILPGTLSLLSEAYDRCGEVC

Species	Gene ID	Protein sequence
		AEYAKTFYLGTLLMTPERRRAIWAIYVWCRRTDELVD GPNASHITPSALDRWELRLEDLFKGCPFDMLDAALSD TVTKFPVDIQPFKDMIDGMRMDLKKSRYKNFDELYLY CYYVAGTVGLMSVPIMGIALDSQATTESVYNAALALG IANQLTNILRDVGEDARRGRVYLPQDELAQAGLSDEDI FAGKVTDKWRNFMRKQIKRARMFFDKAEKGVTELSP ASRWPVWASLLLYRQILDEIEANDYNNFTKRAYVSKP KKILALPAAYAKSLVAPSRRASPSLKA
	Ese06G001884.t1	MSVALVWVFPTSSEIANCFGYLESVREGSRLLDSSRLIS RDRNLNSDRLKKGKIQRWSSCTLNAELRYSCLGNSRL QNGSKFTVHSSMVANPTGEMTLSSEQKVYDVVLKQA ALVKRQLKSSEDLEVKPDSILPGTLSLLSEAYDRCGEV CAEYAKTFYLGTLLMTLERQRAIWAIYVWCRRTDELV DGPNASHITPSALDRWELRLEDLFKGRPFDMLDAALS DTVSKFPVDIQPFKDMIDGMRMDLKKSRYKNFDELYL YCYYVAGTVGLMSVPIMGIAPDSQAMTESVYNAALA LGIANQLTNILRDVGEDARRGRIYLPQDELAQAGLSDE DIFAGNVSDKWRNFMKKQIKRARMFFDEAEKGVTEL SPASRWPVWASLLLYRQILDEIEANDYNNFTKRAYVSK HKKILALPAAYAKSLVAPSRTASPSLKA
	Ese22G002158.t1	MSGTSASSGLRAAFSYCVQQVRNYDYHHYLCLLELPP DMRRAAFALRAFNVETARAMDVASDPKIGLMRLLWW EEAIDKIFANKLIEHPTAQALACVISEHKVSKRWLKRS VEARINDARREVSDIPQTVNDLEKYAEDTVSTILYTTL QAGGIRSTTADHAASHIGKANGVLLLLKALPYHASRN HHFSYIPAEVAEKHGLLVKQGGQSEIRMDSREGLCDAV FEMASVANAHLEKARELAGKVPAEACPVLLPAVPAQV LLDSLRHVHFDVFDPKLTRGILGSPPLLFQLKLKWHSW REMSEDIEYRCFVGGLSWSTSDRALKEAFEKFGGLVE AKVVVDKESGRSRGFGFVTFDDKHAMDDAIEAMNGI DLDGRNITVDKAQPQGGRDRDSGRGHDRDRGRDRDY GGGGRGGGGRGGGGGECFKCGKPGHFARECPGEGGD RGGRYGGRDDRYGGGRGGGGGRFGPDRNGDRYSGR NRDGGGHGGGDRYNRDRSGPYERR
	Ese16G002256.t1	MGSLGAILKHPDDFYPLLKLKFAARHAEKQIPPEPHW AFCYSMLHKVSRSFGLVIQQLDPQLRDAVCIFYLVLRA LDTVEDDTSIPTEIKVPILMAFHRHIYDKDWHFSCGTK EYKVLMDEFHHVSNAFLELGSGYQEAIEDITMRMGA GMAKFICKEVETINDYDEYCHYVAGLVGLGLSKLFHA SGAEDLATDSLSNSMGLFLQKTNIIRDYLEDINEIPKSR MFWPRQIWSKYVDKLEDLKYEENSAKAVQCLNDMV TNALLHAEDCLKYMSDLRDPAIFRFCAIPQIMAIGTLA LCFNNIQVFRGVVKMRRGLTAKVIDRTKTMSDVYGAF FDFSCLLKSKAQFVIGLSGMSRQPNNGHLIVYVTSKCT EDIAITLPIL
	Ese19G000781.t1	MGSLGAILKHPDDFYPLLKLKIAARHAEKQIPPEPHWA FCYSMLHKVSRSFGLVIQQLGPQLRDAVCIFYLVLRAL DTVEDDTSISTEVKVPILMAFHRHIYDNDWHFSCGTKE YKVLMDEFHHVSNAFLELGSGYKRAIEDITMRMGAG MAKFICKEVETIDDYDEYCHYVAGLVGLGLSKLFHAS GAEDLATDSLSNSMGLFLQKTNIIRDYLEDINEIPKSRM FWPRQIWSKYVDKLEDFKYEENSGKAVQCLNDMVTN ALLHVEDCLKYMSDLRDPAIFRFCAIPQIMAIGTLALC YNNIQVFRGVVKMRRGLTAKVIDRTNTMSDVYGAFF DFSCMLKSKVDKKDPNATKTLSRVEAIQKTCKDSGAL TTKRSNISRVCNRKSYIIENESGYNSTLVSVMLPFDL

Species	Gene ID	Protein sequence
	Ese22G001270.t1	MGSLGAILKHPDDFYPLLKLKIAARHAEKQIPPEPHWA FCYSMLHKVSRSFGLVIQQLGPQLRDAVCIFYLVLRAL DTVEDDTSIATEVKVPILIAFHRHIYDNDWHFSCGTKE YKVLMDEFHHVSNAFLELGSGYKEAIEDITMRMGAG MAKFICKEVETIDDYDEYCHYVAGLVGLGLSKLFHAS GFEDLATDSVSNSMGLFLQKTNIIRDYLEDINEIPKSRM FWPRQIWSKYADKLEDLKYEENSGKAVQCLNDMVTN TLLHVEDCLKYMSDLRDPAIFRFCAIPQIMAIGTLALC YNNIQVFRGVVKMRRGLTAKVIDRTNTMSDVYGAFF DFSCMLKSKVDNNDPNATKTLSRLEAIQKTCKNSGAL TTKRKSYIIENESGYNSTLIVILFIILAILYAYLSSS
	Ese11G001906.t1	MGSMGEILKHPDELYPLVKLIWSVWDAEKQIRREPHW SFCYSMLAKISRSFCLVIHQLSPQLRDALCIFYLVLRAL DTVEDDMSIPTEVKEPILMAFHRHIYDTDWHFSCGEK EYKILMDEFHHVSIAFLELRSSYREIIEDVTMRMGAGM AKYICKVVETIDDYDEYCHYVAGLVGLGLSRLFHASG VEILATDSLSESAGLFLQKTNIIRDYLQDINEIPKARMF WPHQIWSKYANKLEDFKYKENSMKAVQCLNEMVTN ALLHVEDCLKLMSDLRDPAVLRSCAIPQIMAMGTLAL CYNNIQVFRGAVKMRRGLGAKIFDQTRTMSDVYGAF CDFSSILMSKVNNSDPNATATLSTLEAIQKTCMESGNLT KRKSYIIEGKPSYNSALVSLYAAF
	Ese19G001283.t1	MLAGGTIPGLDELWAAFSYCIQQVRNYDYHHYLCLLE LPPDMRRAAFALRSFNVETVRAMDVASVPKIGLMRLL WWQEATDKILANKLTENPTTQALASVISEHKVSVC
Panax ginseng	Pg_S5486.5	MSVALLGVVSHNYEISNVFGSLENAREGSRQLDSSRLI SRNKNLLYTGRLKKGEIHKWSSCSLNAELRYSCLGCS GLENGSKYPIHSSMVVNPAGEMTVSSEQKVYDVVLK QAALVKKQLRSKEDLDVKPDIILPGTLSLLSEAYDRCG EVCAEYAKTFYLGTLLMTPERRRAIWAIYVWCRRTDE LVDGPNASHITPSALDRWESRLDDLFKGRPFDMLDAA LSDTVTKFPVDIQPFKDMIDGMRMDLKKSRYKNFDEL YLYCYYVAGTVGLMSVPIMGIAPDSQATTESVYNAAL ALGLANQLTNILRDVGEDARRGRVYLPQDELAQAGLS NEDIFAGKVTDKWRNFMKKQIKRARMFFDEAEKGVT ELSSASRWPVWASLLLYRQILDEIEANDYNNFTKRAYV SKPKKILALPVAYAKASRAGSPMVKAP
	Pg_S8673.1	MSVALLGVVSHNYEISNVFGSLENAREGSRLLDSSRLI SRDKNLLCTGRLKKGEIHKWSSCSVNAELRYSCLGSS GLENGSKYPIHSSMVVNPAGEMTVSSEQKVYDVVLK QAALVKKQLRSKEDLDVKPDIILPGTLSLLSEAYDRCG EVCAEYTKTFYLGTLLMTPERRRAIWAIYVWCRRTDE LVDGPNASHITPSALDRWESRLDDLFKGRPFDMLDAA LSDTVTKFPVDIQPFKDMIDGMRMDLKKSRYKNFDEL YLYCYYVAGTVGLMSVPIMGIAPDSQATTESVYNAAL ALGLANQLTNILRDVGEDARRGRVYLPQDELAQAGLS NEDIFAGKVTDKWRNFMKKQIKRARMFFDEAEKGVT ELSSASRWPVWASLLLYRQILDEIEANDYNNFTKRAYV SKPKKILALPVAYAKASRATGKGTINIKF
	Pg_S3878.16	MSVALVWVVSPNSEISNCFGYLETGREGSRLLDSSRLIS RDRNVNSGRLKKGKIQRWSSCALNAELRYSCLGSSRL QNESKFTVHSNMVANPTGEMTLSSEQKVYDVVLKQA ALVKRQLRSSEDLEVKPDIILPGTLSLLSEAYDRCGEVC AEYAKTFYLGTLLMTPERRRAIWAIYVWCRRTDELVD GPNASHITPSALDRWELRLEDLFKGRPFDMLDAALSD TVTKFPVDIQPFKDMIDGMRMDLKKSRYKNFDELYLY

Species	Gene ID	Protein sequence
		CYYVAGTVGLMSVPIMGIALDSQATTESVYNAALALG IANQLTNILRDVGEDARRGRVYLPQDELAQAGISNEDI FVGKVTDKWRNFMRKQIKRARMFFDEAEKGVTELSP ASRWPVWASLLLYRQILDEIEANDYNNFTKRAYVSKP KKILALPAAYAKSLVAPSRTASPSLKA
	Pg_S2035.18	MSVALVWVVSPNSEISNCFGYLETGREGSRLLDSSRLM SRDRNLNSGRLKKGKIQRWSSCALNAELRYSCLGSSR LQYESKFTVHSSMVANPTGEMTLSSEQKVYDVVLKQ AALVKRQLRSSEDLEVKPDIILPGTLSLLSEAYDRCGEV CAEYAKTFYLGTLLMTPERRRAIWAIYVWCRRTDELV DGPNASHITPSALDRWELRLEDLFKGRPFDMLDAALS DTVTKFPVDIQPFKDMIDGMRMDLKKSRYKNFDELYL YCYYVAGTVGLMSVPIMGIALDSQATTESVYNAALAL GIANQLTNILRDVGEDARRGRVYLPQDELAQAGISNED IFVGKVTDKWRNFMRKQIKRARMFFDEAEKGVTELSP ASRWPVWASLLLYRQILDEIEANDYNNFTKRAYVSKP KKILALPAAYAKSLVAPSRTASPSLKA
	Pg_S1881.17	MSSTLISVAAKPCIENQSFLFHKSTRVEATIAAPKRKSSS TIFPELSVQSIPHTDLHVQEIVKRQTKRFVVDDDSCRKP QFRPAFLEEAYEQCKNICSEYAKTFYLGTLLMTEERQK AIWAIYVWCRRTDELVDGPNAAYMSSAVLDRWEERLY DIFNGRPFDMLDAALAHTVHKFPLDIKPFADMIEGMR MDTTKTRYKNFQELYLYCYYVAGTVGLMSVPVMGIPP ESPVSAQSIYDAALYLGIGNQLTNILRDVGEDTLRGRIY LPQDELTQYGLTDEDVFSRKVSNKWRQFMKEQITRAR YYFNQAEEGASELDKDSRWPVWSSLMLYRNILDAIED NEYDNLTKRAYVGRTKKLLMLPLAYSKSLSISSLMLQ NQPIW
	Pg_S6893.7	MSSTLISVAAKPCIENQSFLFHKSTRVEATIAAPKRKSSS TIFPELSVQSIPHTDLHVQEIVKRQTKRFVVDDDSCRKP QFRPAFLEEAYEQCKNICSEYAKTFYLGTLLMTEERQK AIWAIYVWCRRTDELVDGPNAAYMSSAVLDRWEERLY DIFNGRPFDMLDAALAHTVHKFPLDIKPFADMIEGMR MDTRKTRYKNFQELYLYCYYVAGTVGLMSVPVMGIPP ESPVSAQSIYDAALYLGIGNQLTNILRDVGEDTLRGRIY LPQDELTQYGLTDEDVFSRKVSNKWRKFMKEQITRAR YYFNRAEEGASELDKDSRWPVIT
	Pg_S6162.3	MSGASSSGGLRSAFSYCVQQVRNYDYHHYLCLLELPP DMRRAAFALRAFNVETARAMDVASDPKIGLMRLLWW QDAIDKIFANKLIEHPTARALASVISEHKVSKSWLKRS VEARINDAQREVSDIPQTVNDLEKYAEDTVSTILYTTL QAGGIRSTTADHAASHIGKASGVLLLLKSLPYHVSRNR HFSYIPAEVAGKHGLLVKQGGQSEIHMDSREGLCDAVF EIATVANAHLQKARELAGTVPAEARPVLLPAVPAQVLL DSLRRVHFDVFDPRLSHGILGSPPLLFQLKLKWHSWR GKY
	Pg_S5036.7	MSGASSSGGLRSAFSYCVQQVRNYDYHHYLCLLELPP DMRRAAFALRAFNVETARAMDVASDPKIGLMRLLWW QDAIDKIFANKLIEHPTARALASVISEHKVSKSWLKRS VEARINDAQREVSDIPQIVNDLEKYAEDTVSTILYTTLQ AGGIRSTTADHAASHIGKASGVLLLLKSLPYHASRNRH FSYIPAEVAGKHGLLVKQGGQSEIHMDSREGLCDAVFE IATVANAHLQKARELAGTVPAEARPVLLPAVPAQVLLD SLRRVHFDVFDPRLSHGILGSPPLLFQLKLKWHSWR GKY
	Pg_S1678.33	MGSLGAILKHPDDFYPLLKLKIAARHAEKQIPSEPHWA

Species	Gene ID	Protein sequence
		FCYSMLHKVSRSFGLVIQQLGPQLRDAVCIFYLVLRAL DTVEDDTSISTEVKVPILMAFHRHIYDNDWHFSCGTKE YKVLMDEFHHVSNAFLDLGSGYKEAIEDITMRMGAG MAKFICKEVETIDDYDEYCHYVAGLVGLGLSKLFHAS GAEDLATDSLSNSMGLFLQKTNIIRDYLEDINEIPKSRM FWPRQIWSKYVDKLEDLKYEENSGKAVQCLNDMVTN ALLHVEDCLKYMSDLRDPAIFRFCAIPQIMSIGTLALC YNNIQVFRGVVKMRRGLTAKVIDRTNTMSDVYGAFF DFSCMLKSKVDNNDPNATKTLSRLEAIQKICKNSGALT TKRKSYIIENESGYNSTLIVILFIILAILYAYLSSNLPNSL
	Pg_S2014.27	MGSLGAILKHPDDFYPLLKLKFAARHAEKQIPPEPHW AFCYSMLHKVSRSFGLVIQQLGPQLRDAVCIFYLVLRA LDTVEDDTSIPTEVKVPILMAFHRHIYDKDWHFSCGTK EYKVLMDEFHHVSNAFLELGSGYQEAIEDITMRMGA GMAKFICKEVETIDDYDEYCHYVAGLVGLGLSKLFHA SGAEDLATDSLSNSMGLFLQKTNIIRDYLEDINEIPKSR MFWPCQIWSKYVDKLEDLKYEENSAKAVQCLNDMV TNALVHAEDCLKYMSDLRDPAIFRFCAIPQIMAIGTLA LCFNNTQVFRGVVKMRRGLTAKVIDRTKTMSDVYGA FFDFSCLLKSKARSNSENMQGVWNPVQKEIIHNRERV RTQFSPDCYYLHYTSYPLCISIFKPTTEQTVRTTVHD
	Pg_S1637.7	MGSLGAILKHPDDFYPLLKLKIAARHAEKQIPSEPHWA FCYSMLHKVSRSFGLVIQQLGPQLRDAVCIFYLVLRAL DTVEDDTSISTEVKVPIVMAFHCHIYDNDWHFSCGTK EYKVLMDEFHHVSNAFLDLGSSYKEAIEDITMRMGAG MAKFICKEVETIDDYDEYCHYVAGLVGLGLSKLFHAS GAEDLATDSLSNSMGLFLQKTNIIRDYLEDINEIPKSRM FWPRQIWSKYVDKLEDLKYEENSGKAVQCLNDMVTN ALLHVEDCLKYMSDLRDPAIFRFCAIPQIMAIGTLALC YNNIQVFRGVVKMRRGLTAKVIDRTNTMSDVYGTFFD FSCMLKSKVDNNDPNATKTLSRLEAIQKICKNSGALTT KRKSYIIENESGYNSTLIIILFIILAILYAYLSSNLPNSL
	Pg_S0992.8	MGSLGAILKHPEDFYPLLKLKFAARHAEKQIPPEPHWA FCYSMLHKVSRSFGLVIQQLGPQLRDAVCIFYLVLRAL DTVEDDTSIPTEVKVPILMAFHRHIYDKDWHFSCGTKE YKVLMDEFHHVSNAFLELGSGYQEAIEDITMRMGAG MAKFICKEVETINDYDEYCHYVAGLVGLGLSKLFHAS GAEDLATDSLSNSMGLFLQKTNIIRDYLEDINEIPKSRM FWPRQIWSKYVDKLEDLKYEENSAKAVQCLNDMVTD ALVHAEDCLKYMSDLRGPAIFRFCAIPQIMAIGTLALC FNNTQVFRGVVKMRRGLTAKVIDQTKTMSDVYGAFF DFSCLLKSKVDNNDPNATKTLSRLEAIQKTCKESGTLS KRKSYIIESESGHNSALIAIIFIILAILYAYLSSNLLLNKQ
	Pg_S5881.8	MYDAALSDTVSTYPVDIQPFKDMIDGMRMDLKKSRY QTFDELYLYCYYVAAGTVGLMSVPVMGIAPESKTSTE NVYNAALALGIANQLTNIYIYIHFARRGRIYLPQDELAL AGLTPDYIFRGKVTDKWRSFMRGQLKRARMFFDEAE KGVAELSSVSRWPVWASLLLYWQILDAIEANDYDNFT KRAYA
Polygala tenuifolia	Pt18G00871	MSLLLLKVCPNVEVFNTFGLFDSIRDVKLSDPSKVIPQ DWGSIRPKRNVKERWSSFSCGANMYYSCIGEKRRQG ASGFQVLPSMVANPAGEVAISSEQKVYDVVLKQASLV NRQLRFPLDLDVKPDIVLPGSRDVLTEAYDRCGEICAE YAKTFYLGTLLMTPERRRAIWAIYVWCRRTDELVDGP NASHITPTALDRWESRLEDLFQGRPFDMLDAALSDTV AKFPVDIQPFKDMIEGMRMDLRKSRYKNFDELYLYCY

Species	Gene ID	Protein sequence
		YVAGTVGLMSVPIMGIAPESQATTESVYNAALALGIAN QLTNILRDVGEDARRGRIYLPQEELARAGLSEDDIFAG KVTDKWRIFMKNQIKRARKFFDEAENGITDLDAASRW PVWASLLLYRRILDEIEANDYNNFTKRAYVNKAKKLL FLPVSYGKSLITPSTKLSHSMKA
	Pt14G00460	MSLVLLWKVCPNAEAFNSFGLFDSSRDGKLLDSSKLIP QDWGSIKPKKNVKERWSSFSCGANTKYSCIGEKKRQG ASRFQVLSSMVANPAGEIAVSSEQKVYDVVLKQASLV NRQLRSTVDLDIKPDIVLPGSRGVLSEAYDRCGEICAE YAKTFYLGTLLMTPERRRAIWAIYVWCRRTDELVDGP NASHITPTALDRWESRLEGLFEGRPFDMLDAALSDTVA KFPVDIQPFKDMIEGMRMDLKKSRYKNFDELYLYCYY VAGTVGLMSVPVMGIAPESQATTESVYNAALALGIAN QLTNILRDVGEDARRGRIYLPQDELAQAGLSEDDIFAG KVTDKWRVFMKNQIKRARKFFDEAEKGVTELDAASR WPVWASLLLYRQILDEIEANDYNNFTKRAYVNKAKKL LFLPVSYGKSLITPSRKLSHSMRA
	Pt8G00157	MMSAVLHSVTCPSKEDANSSLSILDRSGTPNRKQKVL WSRMSMSSGISAFSSAVANPLRSSEERVYEVVLKQAAL VKEQKRALPLNKPSEADHTAVKDLLNEAYERCGEVCA EYAKTFYLGTLLMTPESRRAVWAIYVWCRRTDELVDG PNASHITPKALDKWEQRLADLFEGRPYDMYDAALSD TVSKYPIDIQPLKDMIEGMRVDLRKSRYNSFDELYLYC YYVAGTVGLMTVPVMGIASESKASTQMVYNAALALG IANQLTNILRDVGEDARRGRIYLPQDELAQSGLSDEDV FRGKVTDKWRSFMKGQIKRARMFFDEAEEGVAELNG ASRWPVWASLLLYKQILDAIEANDYDNFTKRAYVGKA KKLISLPVSYARSLVSWNR
	Pt10G01251	MSLPFSIAAKPSITGSMEFHCRKLTVRNSKVVINSLLRQ RAARISPELSAQGVSLADLRIKEVVEKQSQKVKVTPSP QRKAPFQPNFLNEAYERCRKICAEYAKTFYLGTLLMTE ERRKAIWAIYVWCRRTDELVDGPNADCITSAAALDRW EQRLEDIFYGHPYDMLDAAVTDTVAKFPLDIKPFRDMI EGMRMDTRKCRYENFQDLYLYCYYVAGTVGLMSVPI MGIAPESLVQAENIYSAALYLGIGNQLTNILRDVGEDA SRGRVYLPQDELARFGLCDKDVLSSIITDKWREFMKQ QITRARFYFNLAEEGASQLDKDSRWPVWSSLILYRKIL DAIEENDYDNLTKRAYVGTAEKFLMLPLAYSKSISTHS SHFVRIPTK
	Pt8G00112	MTEERRKAIWAIYAWCRRTDELVDGPNADYMTAAVLE RWEERLEDIFDGRPYDMLDAALTETVAKFPLDIKPFKD MIEGMRMDTRKCRYENFQELYLYCYHVAGTVGLMSV PIMGIAPESPIPAQDIYNAALYLGIGSQLTNILRDVGEDA SRGRVYLPQDELAQFGLCDKDVFSRIVTDTWKEFMNE QIRRARFYFNLAEEGASQLDKDSRWPVWSSLIMYCKI LDAIEDNDYDNLTKRAFVKWPKIFLALPLAYSRSI
	Pt9G01540	MGSLGAVLKHPDDFYPLLKLKLAVRHAEKQIPHEPHW GFSYSMLHKVSRSFALVIQQLDTDLRNAVCIFYLVLRA LDTVEDDTSVPTDVKVPILKAFHRHIYDREWHFSCGT KEYKVLMDQFHHVSTAFLELDKGYQEAIEDITQRMGV GMAKFICKEVETVDDYDEYCHYVAGLVGLGLSKLFH ASSKEDLASDNLSNSMGLFLQKTNIIRDYLEDINEIPKS RMFWPRQIWSKYVNKLEDLKHEENSDKAVQCLNDM VTNALMHAEDCLKYMSALKDLAIFRFCAIPQIMAIGTL ALCYNNVQVFRGVVKMRRGLTAKVIHQTNTMADVY GAFYDFSCMLKSKVDRNDPNATKTLSRLESIQRTCLDS

Species	Gene ID	Protein sequence
		RLINKRKSFVNEGQPTYSSSMVIILFIVLAIILAYLTANP LNS
Arabidopsis thaliana	AT5G17230.3	MSSSVAVLWVATSSLNPDPMNNCGLVRVLESSRLFSPC QNQRLNKGKKKQIPTWSSSFVRNRSRRIGVVSSSLVAS PSGEIALSSEEKVYNVVLKQAALVNKQLRSSSYDLDV KKPQDVVLPGSLSLLGEAYDRCGEVCAEYAKTFYLGT LLMTPERRKAIWAIYVMLKVDFYKQSIVALVWCRRTD ELVDGPNASHITPMALDRWEARLEDLFRGRPFDMLDA ALADTVARYPVDIQPFRDMIEGMRMDLKKSRYQNFD DLYLYCYYVAGTVGLMSVPVMGIDPKSKATTESVYNA ALALGIANQLTNILRDVGEDARRGRVYLPQDELAQAG LSDEDIFAGKVTDKWRNFMKMQLKRARMFFDEAEKG VTELSAASRWPVWASLLLYRRILDEIEANDYNNFTKRA YVGKVKKIAALPLAYAKSVLKTSSSRLSI
	AT1G62730.1	MNGGGSSSLRSALSYCVQQVRNYDYHHYLCLLELPTE MRKAAFALRAFNVETARAMDVASDPKIGLMRLLWWQ EAIDKLYTKKPINHPAAQALSWAISEHNISKPWLKRSV DARIRDAQREVDDIPESIAELEKYAEDTVSTLLYNTLQ AGGISSTTADHAASHIGKASGLVLLLKSLPYHCTRNRH QSYIPADLAEKHGLLVKQGGRLEILLDNDSREGLSNVV FEIASVANAHLLKARELAGKVPAEAKPVLLHSVPVQV LLDSLNKVQFDVFDPRIQRGVLGVPPLLFQFKLKWYS WRAMF
	AT4G34640.1	MGSLGTMLRYPDDIYPLLKMKRAIEKAEKQIPPEPHW GFCYSMLHKVSRSFSLVIQQLNTELRNAVCVFYLVLRA LDTVEDDTSIPTDEKVPILIAFHRHIYDTDWHYSCGTK EYKILMDQFHHVSAAFLELEKGYQEAIEEITRRMGAG MAKFICQEVETVDDYDEYCHYVAGLVGLGLSKLFLAA GSEVLTPDWEAISNSMGLFLQKTNIIRDYLEDINEIPKS RMFWPREIWGKYADKLEDLKYEENTNKSVQCLNEMV TNALMHIEDCLKYMVSLRDPSIFRFCAIPQIMAIGTLA LCYNNEQVFRGVVKLRRGLTAKVIDRTKTMADVYGA FYDFSCMLKTKVDKNDPNASKTLNRLEAVQKLCRDA GVLQNRKSYVNDKGQPNSVFIIMVVILLAIVFAYLRAN
	AT4G34650.1	MGSLSTILRHPDELYPLLKLKLAITKAQKQIPLEPHLAF CYSILHKVSKSFSLVIQQLGTELRNAVCVFYLILRALDT VEDDTSVPVEIKVPILIAFHRHIYDGDWHFSCGTKEYK LLMDQFHHVSAAFLKLEKGYQEAIEDITKRMGAGMA KFICKEVETIDDYDEYCHYAAGLVGLGLSKIFIASELEIL TPDWKQISNSTGLFLQKTNIIKDYLEDINERPKSRMFW PREIWGKYVDKLEDFKNEEKATKAVQCLNEMVTNAL NHVEDCLKSLASLRDPAIFQSCAIPQIVAIGTLALCYNN VQVFRGVVRLRRGLIAKVIDRTKTMDDVYGAFYDFSC MLQTKVDNNDPNAMKTLNRLETIKKFCKENGGLHKR KSYVNDETQSKAIFVVMFVLLLAIVVVYLKANQCK
Oryza sativa	LOC_Os09g38320.1	MMSTTTTSSAAGSPVCARRRQRVFVDVPRRRATSLAR VEYAKMAPPPPPPCSVRAAGSNPIGCLEVAEPWSGAAP PPLPPLPGHLHVAAPAAEDDDDALAAAAAAVPSEQRV HDVVLKQAALAAAAPEMRRPAQLAERERVAGGLNAA FDRCGEVCKEYAKTFYLATQLMTPERRRAIWAIYVWC RRTDELVDGPNASHMSALALDRWESRLDDIFAGRPYD MLDAALSHTVATFPVDIQPFRDMIEGMRLDLTKSRYRS FDELYLYCYYVAGTVGLMTVPVMGISPDSRANTETVY KGALALGLANQLTNILRDVGEDARRGRIYLPMDELEM AGLSEDDIFDGRVTDRWRCFMRDQITRARAFFRQAEE GASELNQESRWPVWASLLLYRQILDEIEANDYNNFTK

Species	Gene ID	Protein sequence
		RAYVPKAKKIVALPKAYYRSLMLPSSVRHCSSLTSS
	LOC_Os06g51290.2	MAAITLLRSASLPGLSDALARDAAAVQHVCSSYLPNN KEKKRRWILCSLKYACLGVDPAPGEIARTSPVYSSLTV TPAGEAVISSEQKVYDVVLKQAALLKRHLRPQPHTIPI VPKDLDLPRNGLKQAYHRCGEICEEYAKTFYLGTMLM TEDRRRAIWAIYVWCRRTDELVDGPNASHITPSALDR WEKRLDDLFTGRPYDMLDAALSDTISKFPIDIQPFRDM IEGMRSDLRKTRYKNFDELYMYCYYVAGTVGLMSVP VMGIAPESKATTESVYSAALALGIANQLTNILRDVGED ARRGRIYLPQDELAEAGLSDEDIFNGVVTNKWRSFMK RQIKRARMFFEEAERGVTELSQASRWPVWASLLLYRQI LDEIEANDYNNFTKRAYVGKAKKLLALPVAYGRSLLM PYSLRNSQK
	LOC_Os12g43130.1	MASSSSAAALWTAAPHPHGSCIRIHAIFHQRHQRRGRR PVVVASSVRPLQAASLAVATAPVAVASRRTAAEEAVYE VVLRQAALVEEATHRRGAGAPRWAEEDAVDWGLLLG DAYHRCGEVCAEYAKTFYLGTQLMTPERRKAVWAIY VWCRRTDELVDGPNSSYITPKALDRWEKRLEDLFEGR PYDMYDAALSDTVSKFPVDIQPFKDMIEGMRLDLWKS RYRSFDELYLYCYYVAGTVGLMTVPVMGIAPDSKAST ESVYNAALALGIANQLTNILRDVGEDSRRGRIYLPLDE LAEAGLTEEDIFRGKVTDKWRKFMKGQILRARLFFDE AEKGVAHLDSASRWPVLASLWLYRQILDAIEANDYNN FTKRAYVNKAKKLLSLPVAYARAAVAS
	LOC_Os06g01470.1	MGSTAAAGGNLRTALSYCVQQVRNYDYHHYLCLLHL PPAMRKAAFAFRAFNIETAKAMDVVSDPKTGLMRLL WWKDVVDKVFANKLVEHPVAQVLSSVVSEHKISKHW LKRSVEARINDANRDDYAIPETISELERYAEDTQSTILY MTLQAGGIQSTIADHAASHIGKASGLLLLLKALPHHVS KQGRIPYIPASIAEECGLLTREGGRSEVRMGDELPDAVF KVASVADAHLQKARELASSVPAEAIPVLLPGVPAQVLL DSLRRREFNVFDSRLSRGVHGISPLWYQIKLIWHSVRK KY
	LOC_Os03g59040.1	MGVLSRPEEVLPLVKLRVAAGRIKRQIPPEEHWAFAYT MLQRVSRSFALVIQQLGPDLRNAVCIFYLVLRALDTVE DDTSIPAAVKVPILKEFHRHIYNRDWHYSCGTKDYKLL MDKFRLVSTAFLELGQGYQEAIEEITRLMGAGMAKFIC KEVETVDDYNEYCHYVAGLVGYGLSRLFHAGGTEDL ASDSLSNSMGLFLQKINIIRDYLEDINEIPKSRMFWPREI WSKYVNKLEDLKYEENSEKAVQCLNDMVTNALSHAE DCLQYMSALKDHAIFRFCAIPQIMAIGTCAICYNNV NVFRGVVKMRRGLTARVIDETNTMSDVYTAFYEFSSLI ESKIDNNDPNASLTRKRVDAIKRTCKSSCSLKRRGYDL EKSKYNSMLIMVVLLLVAIVLGMIYAK
	LOC_Os07g10130.1	MGVVGALLGPEAEALVRLRAAAWRLRREVAAATDDD EHWAFAYSMLHRVSRSFAIVIQQLGPDLRNAVCVFYLV LRALDTVEDDTSIPTEIKVPILQEFHRHIYNRDWHFSCG TKDCKILMDKFHYVLTAFLELGSGYQEAIEEITRRMGA GMAKFICKEVETVDDYDEYCHYVAGLVGIGLSRLFHA AGLEDLAPESLSNSMGLFLQKVNITRDYLEDINEIPKSR MFWPREIWSKYVDKLEDLKYENNSVKAVKCLNEMVT NGLIHTEDCLRYMSALKDITILRFCAIPQVMALATYA LCYNNVNVFRGVVKLRRGLTARIINETNSMADVYTAF YEFSSLLAEKIDDNDPNASLTRKRVNAIKETCKSSGLL KIRGYDLDRPKRNPAMIMMLLLLLVAIFLGALYRR
Platycodon	PgSS3	MSVALMWVVSPNSELSNGSLFMEMAREGNRLTDSSRF

Species	Gene ID	Protein sequence
grandiflorum		LARERNLFCHGRINNRKKKHKLNSCYLNADLKYSCLG DSGLESGKRFSVVSSMVANPAGEMTLSSEQLVYDVVL KQAALVKQLRSSRDTEVKPELILPGTLSVLSEAYDRCG EVCAEYAKTFYLGTLLMTPERRKAIWAIYVWCRRTDE LVDGPNASHITPKALDRWESRLEDLFNGRPFDMLDAA LSDTVAKFPVDIQPFKDMIEGMRMDLRKSRYKNFDEL YLYCYYVAGTVGLMSVPIMGIAPDSQATTESVYNAAL ALGIANQLTNILRDVGEDARRGRVYLPQDELAQSGLS DADVFAGKVTDKWRHFMKKQIKRARMFFDEAEKGV TQLSSASRWPVWASLLLYRQILDEIEANDYNNFTRRAF VSKQKKIVALPIAYAKALVSPTSRKSSPLAKA
	PgSS4	MSSAFSMAAQPCYIGVRVSNGKLVSHNKVTTTAAIAA PKRSNGAIVAPELSIKGIPHTDLKVREIVQRQSRTQSFFT DDHACGKPRFHPEFLDEAYERCRNICAEYAKTFYLGT RLMTEERQKAIWAIYVWCRRTDELVDGPNAAHMSSA VLDRWEERLDDIFNGRPFDMLDAALTDTVHNFPLDIK PFRDMIEGMRMDTRKSRYENFQELYLYCYYVAGTVGL MSVPVMGISPESPVSAQSIYNSALYLGIGNQLTNILRDV GEDAQRGRIYLPQDELAQFGLCDEDVFSRTVSGRWRE FMKEQINRARFYFNQAEEGASQLDKDSRWPVWSSLLL YREILDAIEENDYDNLTKRAYVGRTKKLLMLPLSYTRA LATPSLAFP
	PgSS1	MNGASTSSGLRSAFSYCVQQVRNYDYHHYLCLLELPT NMRRAGFALRAFNIETARAMDVASDPKIGLMRLLWW KEAVDKIFMNNLIEHPTAQALASVVSEQKISKSWLKRS VEARINDAQREVTEIPETIAELEKYAEDTVSTILYTTLQ AGGIRSTAADHAASHIGKASGLLLLLKSLPYHANRQR QFSYIPAEVAEKHGLLVKQGGRSEIHTDSREGLSNAVFE IASVAFVHLQKARELAGTVPAEARAVLLPAVPAQVLLD SLSDAQFDVFDSRLNRGILGVPPLWFQLKLKWHSWR GKY
	PgSS2	MGSLGAILKHPDDFYPLLKLKMAAKKAEKQIPPEPHW GFCYSMLHKVSRSFALVIQQLGTELRDAVCIFYLVLRA LDTVEDDTSIETEVKVPILIAFHRHIYDRDWHFACGTK EYKVLMDQFHHVSAAFLELGSSYQEAIEDITMRMGAG MAKFICKEVETVDDYDEYCHYVAGLVGLGLSKLFHAS GKEILFPDSLSNSMGLFLQKTNIIRDYLEDINEIPKSRMF WPRQIWSKYVNKLEDLKYEENSTKAVQCLNDMVTNA LIHVEDCLKYMSDLRDPAIFKFCAIPQIMSIGTLALCYN NIEVFRGVVKMRRGLTAKVIDRTKTMADVYGAFYDFA SMLKSKVDMNDPNATKTLSRLDAIQKTCRDSGTLAKR KSYIIESDAKYNSTLIIVLFIILAILYAYLSTNRPNSTRKSF QCDFVSTL

Table S3 Protein sequences of *SE* gene families in six different plant species

Species	Gene ID	Protein sequence
Eleutherococcus	Ese07G002519.t1	MLMGIRTPTYPFSFSLQQHTKSRPPRARIRAGHTKLNN PSNPITINNDNTEVERKRQQQQDLTVLSSSSSGPQLYFY

Species	Gene ID	Protein sequence
senticosus		TKKMGIMMDTSYCIAGTLFASLLGFSFLYILGHHNSTI ANSKKKNQQQKMTAARSVVTRNDPNNPWGNGSDAD IIIVGAGVAGAALAYTLGKDGRRVHVIERDLTEPDRIVG ELLQPGGYLKLIELGLEDCVEEIDAQRVIGYALFKDGR NVKLSYPLEKFHSDVSGRSFHNGRFIQRMREKAARLP NVRLEQGTVSSLLEENGTIKGVQYKIKTGQKVKAYAP LTIVCDGCFSNLRRSLCKPNVDVPSCFVGLILENCKLPH PNHGHVILADPSPILFYPISSTEVRCLVDIPGQKLPSLAN GEMATYLKTMVAPQIPPELHDAFMAAINKGNIRTMPN RSMPAAPYPTPGALLMGDAFNMRHPLTGGGMTVALS DIVVLRNLLKPLRDMNDADSLCKYLESFYTLRKPVAS TINTLAGALYKVFCASPDQARKEMREACFDYLSLGGV CSTGPMALLSGLNPQPLSLVLHFFAVAIFGVGRLLLPFP SPKRLWNGVRLISVASGIIFPIIQAEGVRKMFFPATLPAY YRAPPADDIKF
	Ese19G001396.t1	MELGRSYVVIIEPYLIFTATFLFGFVLLFTLRWKREKKG GAVSMGVNGAYKMTSSSELNGHCSPDQDIDGCSADVI IVGAGVAGSALAYTLAKDGRRVHVIERDLTEQDRIVGE LLQPGGYLKLVELGLEDCVNEIDAQRVFGYALYMDGK NTRLSYPLEKFHADVAGRSFHNGRFIQRMREKAASLP NVRMEQGTVTSLVEKEGIVKGVQYKAKNGQEMCAYA PLTIVCDGCFSNLRRSLCNPKVDVPSCFVGLILENIDLP HINHGHVILADPSPILFYKISSTEIRCLVDVPGQKVPSIA NGELAHYLKTSVAPQIPPELYKSFIAAIDKGQIKTMPNR SMPADPHPTPGALLLGDAFNMRHPLTGGGMTVALSDI VLIRDLLRPLRNLHDSSTLCSYLESFYTLRKPVASTINT LAGALYKVFCASPDQARQEMRDACFDYLSLGGICSEG PIALLSGLNPRPMSLFFHFFAVAIYGVGRLLIPFPSPKKI WLGARLISGASGIIFPIIKSEGVRQMFFPATVPAYYRAPP FTKEM
	Ese22G002027.t1	MELGRSYMVNDQYFLGGISVATFLFGFVVLFALRRKR EKKGGATSMAIDGTYKNNIKMTAGSEVNGHCSLEDVA GSSDDVIIVGAGVAGSALAYTLAKDGRRVHVIERDLTE QDRIVGELLQPGGYLKLVELGLEDCVNEIDAQRVFGY ALYMYGKNTRLSYPLEKFHADVAGRSFHNGRFIQRMR EKAASLPNVRMEQGTVTSLVEKKGTVKGVQYKTKNG QVMSAYAPLTIVCDGCFSNLRRSLCNPKVDVPSCFVGL ILENVDLPHINHGHVILADPSPILFYKISSTEIRCLVDVP GQHVPSIANGELAHYLKTSVAPQIPPELYKSFIAAIDKG QIKTMPNRSMPADPHPTPGALLLGDAFNMRHPLTGGG MTVALSDIVLIRDLLRPLRDLHDSSTLCKYLESFYTLR KPVASTINTLAGALYKVFCASPDQARQEMRDACFDYL SLGGICSEGPIALLSGLNPRPMSLFFHFFAVAIYGVGRLL

Species	Gene ID	Protein sequence
		IPFPSPKKMWLGARLISIWILVAESYGEDCTSVCMGRR NKRRKNKMEPKNHSVLSQCFLDTLSPHPEAVQNPASL PPPIP
	Ese24G001061.t1	MNSSSSTLSSSTETLHSFMEAMLIDLYILGWIFAFLFGF LLLFNFNRKREKINGANSTEFGTDSINNTSSGNGYYRP ENIAGSTDVIIVGAGVAGSALACTLAKDGRRVHVIERD LSEQDRIVGELLQPGGYLKLIELGLEDCVNEIDAQRVF GYALYMDGKNTRLSYPLEKFHADVAGRSFHNGRFVQ RMREKASSLPNVRMEQGTVTSLVEKKGTVKGVQYKT KDGQELSAFAPLTIVCDGCFSNLRRSLCNPKVEVPSCF VGLILENIDLPHINHGHVILADPSPILFYKISSTEIRCLVD VPGQKVPSISNGELAHYLKTVVAPQVPRELYNSFIAAV DTGNIRTMPNRSMPADPHPTPGALLLGDAFNMRHPLT GGGMTVALSDIVLIRDLLRPLRDLHDSSTLSKYLESFY TRRKPVASTINTLAGALYNVFCASPDKARQEMRNACF DYLSLGGICSQGPIALLSGLNPRPLSLFLHFFAVAIYGV GRLLIPFPSPKRMWLGARLISGASGIIFPIIKSEGVRQMF FPATVPAYYRAPPIH
	Ese16G002000.t1	MNSSSSTLSSSSTTDKLHSFMEAAILVDQYYLGWIFAF LFGFLMLFNFKRKREKSGANSTDFGTDSIINTSSENGY NSPEHIAGSTDVIVVGAGVAGSALAYTLAKDGRRVHVI ERDLTEQDRIVGELLQPGGYLKLIELGLEDCINEIDSQR VFGYALYMDGKNTRLPYPLEKFHADVAGRSFHNGRFV QRMREKAASIPNVRMEQGTVTSLVEKKGTIKGVQYKT KDGQELSAFAPLTIVCDGCFSNLRRSLCNPKVEVPSCF VGLILEDIDLPYINHGHVILADPSPILFYKISSTEIRCLVD VPGQKVPSISNGELANYLKTVVAPQVPKELYNSFIAAV DKGNIKTMPNRSMPADPHPTPGALLLGDAFNMRHPLT GGGMTVALSDIVLIRDLLRPLRDLRDSSTLCKYLESFY TLRKPVASTINTLAGALYKVFCASPDKARQEMRNACF DYLSLGGICSQGPIALLSGLNPRPVSLFLHFFAVAIYGV GRLLIPFPSPTRMWLGARLISGASGIIFPIIKSEGVRQMF FPATVPAYYRAPPMHSLRK
	Ese01G001295.t1	MEEHYALGSILASLLGFILVYALFFKKNDRRDSVEAAE STTATTTTAIKGECRSCNGAGDDADVIIVGAGVAGAAL AHTLGKDGRRVHVIERDLTEPDRIVGELLQPGGYLKLI ELGLEDCVEEIDAQKVFGYALFKDGKNTRLSYPLEKF HSDVSGRSFHNGRFIKRMRDKAATLPNVQMEQGTVTS LLEENGTIKGVQYKTKNGEEMSAYAPLTIVCDGCFSNL RRNLCSPKVDVPSCFVGLVLENCELPHANHGHVILAD PSPILFYPISSTEIRCLVDVPGQKVPSISNGEMATYLKTV VAPQIPPELHDAFIATVEKGSIRTMPNRSMPAAPHPTPG ALLMGDAFNMRHPLTGGGMTVALSDIVVLRNLLRPLR

Species	Gene ID	Protein sequence
		DMNDASTLCKYLESFYTLRKPVASTINTLAGALYKVF CASPDQARKEMREACFDYLSLGGVCSEGPVSLLSGLN PRPLSLVVHFFAVAIFGVGRLLLPFPSPKRMWIGARLIST ASRIIVPIIKAEGFRQMFFPATVPAYYRAPPVW
	Ese03G001204.t1	MEEHYVLGSILASLLGFILVYALFAKKNARRDSVEAAK STTATTTTAIKGECRSRNGAGDDADVIIVGAGVAGAAL AHTLGKDGRRVHVIERDLTEPDRIVGELLQPGGYLKLI ELELEDCVEEIDAQRVFGYALFKDGKNTRLSYPLEKFH SDVSGRSFHNGRFIQRMRKKAATLPNVQMEQGTVTSL LEENGTIKGVQYKTKTGEEMSAYAPLTIVCDGCFSNLR RNLCCPKVDVPSCFVGLVLENCELPHANHGHVILADP SPILFYPISSTEIRCLVDVPGQKVPSISNGEMATYLKTVV APQIPPELHDAFIATVEKGNIRTMPNRSMPAAPHPTPGA LLMGDAFNMRHPLTGGGMTVALSDIVVLRNLLRPLRD MNDASALCKYLESFYTLRKPVASTINTLAGALYKVFC ASPDEARKEMREACFDYLSLGGVYSEGPVSLLSGLNP RPLSLVVHFFAVAIFGVGRLLLPFPSPKRMWIGARLISS ASGIIFPIIKAEGLRQMFFPATVPAYYRAPPVWVVFVHS GVEDREGWAGIRGTSDKSIDDLKLLLNYQKIKMASGN QELNYIMHEENVAENQEATNGPAANSGNNGANNMMH NDFFKNFMQFMQNQARRIPVADNDGNISNARLVTVKK FKELGPLEFHGKPDPLKAEAWIKQITKIFDVLRFTDDQ KVPFATFMLRGEADHWWESVKRTHRLALEMSWAEFQ ELFNDKYFSESIRHMKEVEFIKLERGESGENNLKRKRF HNDRGMAPTSAPTQASVPRGGDRPPVRCYKCGEEGHI SPNCTQQSKVCYNCGKEGHMARFCPVTKSSPAAIMAP KANTDKGKSVVRGSAFVVTSHGERYPNEVITGIDWLT THHAKIDCFQKIISFHIPNQPVMQIRAAKPLKSVVVISS HKAIRLLKNGCQVFLAHVTDLNKNTSDLNNIPIVNEFP EELSGLPPNREIDFCIDLEPGTKPIFKAPYRMAPIELQEL KVQLQELLDAGFIRPSTSPWGAPILFVKKKDGSMRLCI DYRELNHVTIKNRYPLPRINDMFNQLTRYGHYEFLVM PFGLTNAPTAFMDMMNRIFKEYLDHFVVVFIDDILIYS KSREDHEQHLRLILQKLRENKLYAKLKKCEFWLEEVS FLGHVISKQGISVDPAKIESILNWQQPKSVTEVRSFLGL AGYYRRFVEGFSRIATPLTKLTWKSTKFEWSEECEKQE LKRRLVSAPVLTIPSGSGGFVIYSVASGRGLGCVLMQH RKVVAYASRQLKDYEKNYPTHDLELAAVVFALKIWRH YLYGEKVEIFTDHKSLKYFFTQKELNMRQRRWLELL KDYDHTIQYHPEKANVVADALSRRSYTSTNAMLTTQG HILNDLQRMEIEMKTPGSHMRIAHVRVKPTLIDRIKAA QATDPELMKMVKKVQEGAIPEARIDEKGILWVNSRLC VPNNPELKHKAEHQVPKGPLQPLEVPEWKWEHINKD

Species	Gene ID	Protein sequence
		FVTGFPKVSQGLDAIWVIVDRLTKSAHFLPIREDYPLE RLAREAKLLGPELVRLTTEKIQIIRQRIQSAQDRQKNYA DLYRKDEIFNVGDNVFLRVSPWKGVTRFGRRGKLNPK FVGPFEILDRVGTVAYRLALPPIMSRIHNVFHISMLRKY VKDPNHVIELEPDVLAKDLTYEEVPVKILDRKEQILRS KVIPQVKVLWRNQEVEEMTWELESEMKSKYPHLFETP DDIQLVHLLVLSSFFNPLFNATELVIDAQTLLLLGVDDE S
	Ese19G001421.t1	MTSYEFILGGAIVSFLGFAVFYLLAENRKSNNSSNLVQI KRNECAKTAQDGECQQEGIGNPDIIIVGAGVAGSALAY TLGKDGRRVLVVERDLSEPDRIVGELLQPGGYLKLIEL GLEDCVNEIDSQQVFGYALFKDGKSTRLSYPLKEFHTD VTGKSFHNGRFIQQMREKAATLSNVKLEQGTVTSLVE RKGTVKGVHYKTKSGQDMTAYAPLTIVCDGCFSNLRR SLCNPKVEIPSVFVALILKNCQLPYPNHGHVILANPSPIL LYRISSTEIRCLVDVPGKKVPSIANGDMAHYLKTLVAP QIPFELYDAFITAIDEGNMKTMANRSMPADPYPTPGAL LLGDAFNMRHPLTGGGMTVALSDIVVLRDLLRPLGDL NDAPALCRYLESFYTLRKPVASTINTLAGALYKVFCAS PDQARNEMRQACFDYLSLGGIFSNGPVALLSGLNPRPL SLVLHFFSVAIYGVGRLLLPIPSLKRAWLGARLISDASSI IFPIIKAEGIRQMFFPRVMPAYYRCPPTN
	Ese14G000263.t1	MGKIESLESCPVVFGWLCYTRDGRRVHVIERDLTEPDR IVGELLQPGGYLKLMELGVEDCVEEIDAQRVFGYALF KDGKNTRLCYPTEKFHSDVSGRSFHNGRFIQRMREKA ATLPNIKLEQGTVTSLLEENGTIKGVQYKTKTAEKMSV YAPLTIVCDGCFSNLRNNLCSPKVDVPSCFVGLVLEKC QLPYANYGHVILADPSPILFYPISSTEIRCLVDVPGQKVP SISNGEMATYLKTVVAPQIPPELHDAFITTIDKGNIRTM PNRSMPAFPHPTPGALLMGDAFNMRHPLTGGGMTVAF SDIVVLCNLVRPLRDMNDASTLCKYLESFYTLRKPVAS TINTLADALYKVFCASPDQARKEMREACFDYLSLGGV CSEGPVSLLSGLKPRPLSLVVHFFAVAIFGVGRLLLPFPS PKRMWNGARLISSALGIIFPIIKAEGVRQMFCPAMVPA YYRAPPVM
	Ese24G001063.t1	MREKAATLSNVKLEQGIVTSLVERKGTVKGVHYKTKT GQDMIAYGPLTFVCDGCFSNQRRSLCNPKVDIPSSFVS LILKNCQLPYPNHGHVILANPSHILLYRISSTEIRCLVDV LGKKVPSIANGDMIPFELYDAFIRAIDEGNMRTMANRS MPATPYPTLGALLLGDAFNMRHPLTGGGMTVALSDIV VFRDLLRLLTKQSRVLTKVGDFLITLASYCLQPVASTIK TLTGALYKVFCASPDEARNEMRQAYFDYLSLGGIFSN GPVALLSGLNPRPLSLVLHFFSVAMYGVGCWLLPFPSP

Species	Gene ID	Protein sequence
		KRAWPGARLIWDASSIIFPIIKAEGVKQMFFPAVIPAYY RSPPTD
	Ese06G002592.t1	MPFDDSNEGGIDPILGASQLTWSIICHYLSNTEVRCLVD VPGQKLPSLASSEMANYLKTMVAPQLPPELHDAFIAAT DKGNTRTLPNRSMPAAAYSTPLALLMGCAFNICVILQL VDWWTGGGMTLALSDIVVLRNLLKPLHDMTDADSLC KYLESFYTLRKPVASTINTLAGALYKVFCASPDQARKE MREACFDYVSLGGVFSTGPVALLSGLNSRPLSLVLHFF AVAIYAVGCLLLPFPSPKRLWTGVRLISVSSCNLFKTGY LVFDIMLHLLSCQALLPYS
	Ese05G001251.t1	MVNAGEVNAKLDALMAQQDERFQRLEDSMAALTGH VQTSVTAIQASITALTARQGPNNFHAPPDPRLNAVDRG AKLEVGDFNGDQGPEAFFDWVHSLESFFRWYNLTDET KLFFADAKLKGTTCIWWDHHQRNLYTAARRWEDMK AAMTRRFVPPDYKQKACLQLTELVQGSKSVAEYTSTF YSLVTRSEFPWIEDVLISNRRGLNHEIASKVPVQTRSER TFVEPLRSRSVERSSINSSATSRPNRTTGSSSASNNPSAR CFNCRGFGHMSFECPSSKMNVATTPSRVAVVNKDSEK TDVHEEVCPPSDEENEYNEQDLEADAHLEGCLGVLFD LYWLLRSKRMFLNSIVGGYFRRELDVQVKYSSLVIDT GSCTDVISEEAVKKLGLKVEPHPDPYDVAWITNTKLRV SQRCLVTFSVGKLKDTVMCDILPLKVCHIILGRTWLW DRHAHHDARANTYSIMKGSTKFILTCALDMLKLKLAK NSLVDVPSCFVGLILENCQLPHANYGHVILADPSPILFY PISSTEIRCLVDVPGQKVPSISNGEMATYLKTVVAPQLH IDLCCSIFPDSPHVLLDAFIATIDRGNIRTVPNRSMPAAP HPTPGALLMGNAFNMQHPLTGGGTTVALSDIVVLCNL LRPLHDMNGACTLLSSNI
Panax ginseng	Pg_S1693.31	MGMMMDYIAGTLFAFLLGFSFLYILGTIANSKKKNQK QKATACTSFETRNDLNDGDNPRANQSDADVIIVGAGV AGAALAHTLGKDGRRVHVIERDLTEPDRIVGELLQPG GYLKLIELGLEDCVEEIDAQRVIGYALFKDGRNTKLSY PLEKFHSDVSGRSFHNGRFIQRMREKAATLSNVHLEQ GTVSSLLEENGTIKGVQYKTKTVQDVKAYAPLTIVCD GCFSNLRRSLCKPKVDVPSCFVGLILENCKLPHPNHGH VILADPSPILFYPISSTEVRCLVDVPGQKLPSLANGDLA NYLKTMVAPQIPPELHDAFIAAIDKGNIRTMPNRSMPA APYPTPGALLMGDAFNMRHPLTGGGMTVALSDIVVLR NLLKPLGDMNDADSLCKYLESFYTLRKPVASTINTLA GALYKVFCASPDQARKEMREACFDYLSLGGVCSTGPV ALLSGLNPRPLSLVLHFFAVAIYGVGRMLLPFPSPKRLW AGVRLISAASGIIFPIIQAEGVRQMFFPATVPAYYYRAPP ADDIKF

Species	Gene ID	Protein sequence
	Pg_S3064.5	MEQGTVTSLVEKKASVKGVQYKTKDGQELSAFAPLTI VCDGCFSNLRRSLCNPKVEVPSCFVGLILENIDLPHVN HGHVILADPSPILFYKISSTEIRCLVDVPGQKVPCISNGE LANYLKTVVAPQVPKQLYNSFIAAVDKGNIRTMPNRS MPADPHPTPGALLLGDAFNMRHPLTGGGMTVALSDIV LIRDLLRPLRDLHDSSTLCKYLESFYTLRKPVASTINTL AGALYKVFCASPDKARQEMRNACFDYLSLGGICSQGP IALLSGLNPRPISLFLHFFAVAIYGVGRLLIPFPSPKRMW LGARLILGASGIIFPIIKSEGLRQMFFPATVPAYYRAPPIH
	Pg_S2606.7	MELERSYRENDEYFLMFAATLLFGFVLYLFTLRRRRRR REKKGGAGSMEIINGAYKMTSSSEVNGHCTPEDIAGSS DDVIIVGAGVAGSALAYTLAKDGRRVHVIERDLTEQD RIVGELLQPGGYLKLVELGLEDCVNEIDAQRVFGYALY MDGKNTRLSYPLEKFHADVAGRSFHNGRFIQRMREK AASLPNVRMEQGTVTSLVEQKGTVKGVRYKTKNGQE MSAAYAPLTIVCDGCFSNLRHSLCNPKVDVPSCFVGLI LENIDLPHINHGHVILADPSPILFYKISSTEIRCLVDVP GQKVPSIANGELAHYLKTSVAPQIPPELYKSFIAAIDKG KIKTMPNRSMPADPHSTPGALLLGDAFNMRHPLTGGG MTVALSDIVLIRDLLRPLRDLHDSSTLCKYLESFYTLR KPVASTINTLAGALYKVFCASPDKARQEMRDACFDYL SLGGICSEGPIALLSGLNPRPMSLFFHFFAVAIYGVGRLL IPFPSPRKMWLGARLISGASGIIFPIIKSEGVRQMFFPAT VPAYYRAPPITKKM
	Pg_S6308.10	MNSSSSTTTTDTLHSFMEASALLIDQYFLGWIFAFLFGF LLLLNFKRKREKNNSTEFGTDDSNGYYTPENIAGSTD VIIVGAGVAGSALAYTLANDGRRVHVIERDLTEQDRIV GELLQPGGYLKLIELGLEDCVNEIDAQRVFGYALYMD GKNTRLSYPLEKFHSDVAGRSFHNGRFVQRMREKAAS LPNVRMEQGTVTSLVEKKGSVKGVQYKTKDGQELSA FAPLTIVCDGCFSNLRRSLCNPKVEVPSCFVGLILENID LPHINHGHVILADPSPILFYKISSTEIRCLVDVPGQKVPC ISNGELANYLKTVVAPQVPKQLYNSFIAAVDKGNIRTM PNRSMPADPHPTPGALLLGDAFNMRHPLTGGGMTVAL SDIVLIRDLLRPLRDLHDSSTLCKYLESFYTLRKPVASTI NTLAGALYKVFCASPDKARQEMRNACFDYLSLGGICS QGPIALLSGLNPRPISLFLHFFAVAIYGVGRLLIPFPSPKR MWLGARLILGASGIIFPIIKSEGLRQMFFPAIVPAYYRAP PIH
	Pg_S0129.28	MEEHYVLGLILASLLGFLLAYALFFKKNDRRYSSEAVK SNTATTTTAINGECRSRNGAGDDVDVIIVGAGVAGAAL AHTLGKDGRRVHVIERDLTEPDRIVGELLQPGGYLKLI ELGLEDCVEEIDAQRVFGYALFKDGKNTRLSYPLEKFH

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		SDVSGRSFHNGRFIQRMREKAATLPNVQMEQGTVTSL LEENGTIKGVQYKTKTGEETSAYAPLTIVCDGCFSNLR RNLCSPKVDVPSCFVGLVLENCKLPHANHGHVILADP SPILFYPISSTEIRCLVDVPGQKVPSISNGEMATYLKTVV APQIPPELHDAFIATVEKGNIRTMSNRSMPAAPHPTPGA LLMGDAFNMRHPLTGGGMTVALSDIVVLRNLLRPLRD MNDASTLCKYLESFYTLRKPVASTINTLAGALYKVFC ASPDQARKEMREACFDYLSLGGFCSEGPVSLLSGLNP RPLSLVVHFFAVAIFGVGRLLLPFPSPKRMWIGARLISS ASGIIFPIIKAEGFRQMFFPATVPAYYRAPPVC
	Pg_S2840.6	MEEHYVLGLILASLLGFLLVYALFFKKNDRRYSVEAVK SNTATTTTAINGECRSRNGAGDDVDVIIVGAGVAGAAL AHTLGKDGRRVHVIERDLTEPDRIVGELLQPGGYLKLI ELGLEDCVEEIDAQRVFGYALFKDGKNTRLSYPLEKFH SDVSGRSFHNGRFIQRMREKAATLPNVQMEQGTVTSL LEENGTIKGVQYKTKTGEEMSAYAPLTIVCDGCFSNLR RNLCSPKVDVPSCFVGLVLENCKLPHANHGHVILADP SPILFYPISSTEIRCLVDVPGQKVPSISNGEMATYLNTVV APQIPPELHDAFIATVEKGNIRTMSNRSMPAAPHPTPGA LLMGDAFNMRHPLTGGGMTVALSDIVVLRNLLRPLRD MNDASTLCKYLESFYTLRKPVASTINTLAGALYKVFC ASPDQARKEMREACFDYLSLGGFCSEGPVSLLSGLNP RPLSLVVHFFAVAIFGVGRLLLPFPSPKRMWIGARLISS ASGIIFPIIKAEGFRQMFFPATVPAYYRAPPVW
	Pg_S3767.14	MDGKNTRLSYPLEKFHADVAGRSFHNGRFIQRMREK AASLPNVRMEQGTVTSLVEQKGTVKGVRYKTKNGQE MSAAYAPLTIVCDGCFSNLRHSLCNPKVDVPSCFVGLI LENIDLPHINHGHVILADPSPILFYKISSTEIRCLVDVPG QRVPSIANGELAHYLKTSVAPQIPPELYKSFIETIDKGQI KTMPNRSMPADPHPTPGALLLGDAFNMRHPLTGGGM TVALSDIVLIRDLLRPLRDLHDSSTLCKYLESFYTLRKP VASTINTLAGALYKVFCASPDKARQEMRDACFDYLSL GGIFSEGPIALLSGLNPRPMSLFFHFFAVAIYGVGRLLIP FPSPRKMWLGARLISGASGIIFPIIKSEGVRQMFFPATVP AYYRAPPITKKM
	Pg_S6152.1	MAISMDINMINESIFVGVLLVLVVLLLLGKRRNIHNNL VPIKIKRNECAKPPQDGESRPEIAENPDVIIVGAGVAGS ALACTLGKDGRRVLVIERDLTEQDRIVGELLQPGGYLK LMELGLEDCVDKIDAQEVFGYALFKDGKSTRLSYTLK DFHSDVAGRSFHNGRFIQRMREKAATLSNVRLEQGTV TSLIEKKGTVKGVHYRSKTGQELTACAPLTIVCDGCFS NLRRSLCNPKVEIPSHFVAMILKNCQLPYPNHGHVILA NPSPILLYRISSTEIRCLVDIPGQKVPSIGNGDMSHYLKT

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		VVAPQIPLDLNKAFISAIEEGNIRTMANRSMPADPYPTP GAILLGDAFNMRHPLTGGGMTVALSDIVVLRDLLRPL RDFNDAPSLSKYIEAFYTLRKPVASTINILAGALYKVFC ASPNQARNEMRQACFDYLSLGGIFSNGPIALLSGLNPQ PFILVLHFFSVAIYGVGRLLLPLPSPKRAWHGARLILDA SAIIFPIIKAEGVRQMFFPSTISAYHRSPPIY
	Pg_S4651.3	MELGLEDCVDKIDAQEVFGYALFKDGKSMSYPLKDF HLDVAGRSFHNGRFIQRMREKAATLSNVRLEQGIVTSL IEKKGTVKGVHYRTKTGQELTACAPLTIVCDGCFSNLR RSLCNPKVEIPSHFVAMILKNCQLPYPNHGHVILANPSP ILLYRVSSTEIRCLVDIPGQKVPSIGNGDMSHYLKTVVA PQIPLDLNKAFISAIEEGNIRIMANRSMPADPYPTPGAL LLGDAFNMRHPLTGGGMTVALSDIVVLRDLLRPLLDF NDAPSLSKYLEAFYTLRKPVASTINTLAGALYKVFCAS PNQARNEMRQACFDYLSLGGIFSNGPIALLSGLNPQPL SLVLHFFSVAIFGVGRLLLPLPSPKRAWLGARLISDTSAI IFPIIKAEGIRQMFFPSTISAYHRSPPTY
	Pg_S2606.8	MIVQHMLAGAIVSLLGFAVLYLLGKKNKSNNSALVQT QGNECAEWQPEIIENPDIIIVGAGVAGSALACTLGKDG RRVLVIERDLTEPDRIVGELLQPGGYLKLVELGLEDCV NEIDAQQVFGYALFKDGKSTRLSYPLKEFDSDVTGKSF HNGRFIQRMREKAATLANVKLEQGTVTSLIERKGTVK GVHYKTKTGQDMTAYSPLTVVCDGCFSNLRRSLCNPK VEIPSVFVALILKNCQLPYPKHGHVILANPSPILLYRISS TEIRCLVDVPGKKIPSIGNGDMAHYLKTLVAPQIPFELY DAFITAIEEGNMKTMANRSMPADPYPTPGALLLGDAF NMRHPLTGGGMTVALSDIVVLRDLLRPLGDLNDAPAL CRYLESFYTLRKPMASTINTLAGALYKVFCASPDQAR NEMRQACFDYLSLGGIFSNGPVALLSGLNPRPLSLVLH FFSVAIYGVGRLLLPIPSPQRAWLGARLISVSMFRSY
	Pg_S3767.15	MDFNMIVQHMLVGAIVSLLGFAVLYLLGKKNKSNSSA LVQTQGKECAEWQPEISENPDIIIVGAGVAGSALACTL GKDGRRVLVIERDLTEPDRIVGELLQPGGYLKLVELGL EDCVNEIDAQQVFGYALFKDGKSTRLSYPLKEFDSDV TGKSFHNGRFIQRMREKAATLANVKLEQGTVTSLIER KGTVKGVHYKTKTGQDMTAYSPLTVVCDGCFSNLRR SLCNPKVEIPSVFVALILKNCQLPYPNHGHVILANPSPIL LYRISSTEIRCLVDVPGKKIPSIGNGDMAHYLKTLVAPQ IPFELYDAFITAIEEGNMKTMANRSMPADPYPTPGALL LGDAFNMRHPLTGGGMTVALSDIVVLRDLLRPLGDLN DAPALCRYLESFYTLRKPVASTINLLAGALYKVFCASP DQARNEMRQACFDYLSLGGIFSNGPVALLSGLNPRPLS LVLHFFSVAIYGVGRLLLPIPSPQRAW

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		LGARLISDASSIIFPIIRAEGIRQMFFPRVIPTYYRCPPSK
	Pg_S1672.1	MTSYQFTLGGAIVSFLGFAMFYLLCRNKKSDNSTNLV QIKRNECVKTAHDGECQPEIVGNPDIIIVGAGVAGSALA YTLGKDGRRVLVVERDLTEPDRIVGELLQPGGYLKLIE LGLEDCVNDIDAQQVFGYALFKDGKSTRLSYPLKEFH TDVTGKSFHNGRFIQRMREKAARISNVKLEQGTVTSLI ERKGTVKGVHYKTKTGQDMTAYAPLTIVCDGCFSNLR RSLCNPKVDIPSVFVALILKNCQLPYPNHGHVILANPSP ILLYRISTTEIRCLVDVPGKKVPSIGNGEMTHYLKTLVA PQIPLELYDAFITTIEEGNMKTMANRSMPADPYLTPGA LLLGDAFNMRHPLTGGGMTVALSDIVVLRDLLRPLGD LNDSPALCRYLESFYTLRKPVASTINTLAGALYKVFCSS PDQARNEMRQACFDYLSIGGIFSNGPVALLSGLNPRPL SLVLHFFSVAIYGVGRLLLPFPSPKRAWLGARLITDAAS IIFPIVKAEGVRQMFFPIAIPAYHRSPPIN
	Pg_S4651.2	MNVLNPLKMVNLGLKLLNPDVIIVGAGVAGSALACTL GKDGRRVLVIERDLTEQDRIVGELLQPGGYLKLMELG LEDCVDEIDAQEVFGYALFKDGKSTRLSYPLKDFHSDV AGRNFHNGRFIQRMREKAATLSNVRLEQGTVTSLIEK KGTVKGVHYRTKTGQELTTCAPLTIVCDGCFSNLRRSL CNPKVEIPSHFVAMILKNCQLPYPNHGHVILANPSPILL YRVSSTEIRCLVDIPGQKVPSIGNGDMSHYLKTVVAPQI PLDLNKAFISTIEEGNIRTMANRSMPANPYPTPGALLLG DAFNMRHPLTGGGMTVALSDIVVLRDLLRPLLDFNDA PSLSKYLEAFYNLRKPVASTRNTLTGAIYKVFCASPNQ ARNEMRQACFDYLSLGGIFSNGPIALLSGLKPQPLSLIL HFFSVAIYGVGRLLLPLPSPKRAWLGARLISDASAIIFPII KAEGIRQMFFPSTISAYHRSPPTY
	Pg_S6081.2	MAIFMDINMIDESIFVGVFLGLVVLLLLRKRKNSHNNL VPIKIQRNECAKPPQDGESRPEISENPDVIIVGAGVAGS ALACTLGKDGRRVLVIERDLTEQDRIIGELLQPGGYLK LMELGLEDCVDKIDAQEVFGYALFKDGKSTRLSYPLK DFHSDVAGRSFHNGSFIQPMREKAATLSNVRLEQGTV TSLIEKKGTVKGVHYRTKTGQELTACAPLTIVCDGCFS NLRRSLCNPKVEIPSHFVAMILKNCQLPYPNHGHVILA NPSPILLYRISSTEIRCLVDIPGQKVPSIGNGDMSYYLKT VVAPQIPLDLNKAFLSAIEEGNIRTMANRSMPADPYPTP GALLLGDAFNMRQTLTGGGMTVALSDIVVLRDLLRPL RDFNDAPSLSKYLEAFYTLRKPVASTINTLAGALYKVF CASPNQARNEMRQACFDYLSLRGIFSNGPIALLSGLNP QPLSLVLHFFSVAIYGVGRLLLPLPSPKHAWLGARLISD ASGIIFPIIKAEGIRQMFFPSTISAHHRSPPTY
	Pg_S0967.30	MREKAATLSNVHLEQGTVSSLLEENGTIKGVQYKTKT

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		VQDVKAYAPLTIVCDGCFSNLRRSLCKPKVDVPSCFVG LILENCKLPHPNHGHVILADPSPILFYPISSTEVRCLVDV PGQKLPSLANGDLANYLKTMVAPQIPPELHDAFIAAID KGNIRTMPNRSMPAAPYPTPGALLMGDAFNMRHSLTG GGMTVALSDIVVLRNLLKPLGDMNDADSLCKYL
	Pg_S3064.7	MAISMDINMINESIFVGVLLVLVVLLLLGKRKNSHNNL VPIKIQRNECAKPPQDGESRPENPDVIIVGAGVAGSALT CTLGKQVEIPSHFVAMILKNCQLPYPNHGHVILANPSPI LLYRISSTEIRCLVDIPGQKVPSIGNGDMSYYLKTVVAP QIPLDLNKAFISAIEEGNIRTMANRSMPADPYPTPGALL LGDAFNMRHPLTGGGMTVALSDIVVLRDLLRPLRDFN DAPSLSKYLEAFYTLRKKMLEVIESKIKQLGFGISNLFD ALLEGLIAEGLEHLMHWLMSML
	Pg_S7552.1	MKTMTNRSMPDDPYPTPGALLLGDAFNMRHPLTGEG MTVALSDIAVLRDLLRSLGALNDSPALCRYLESFYTLR KPVASTINTLAGALYKVFCASPDQARNEMRQACFDYL SLGGIFSNGPVALLSGLNPRPLSLVLHFFSVAMYGIGRL LLPIPSPKRAWLGARLISVSMRCSY
	Pg_S0341.4	MHRLVQNFVANLLLQSAVLKFNLRRKAKMSKGTGGA AGAKGKKKGATFVINCGKPVEDKIMDIASLENFLQERI KIGGRAGASGDSVSVVREKSKITPVASTINTLAGALYK VFCASPDQARKEMREACFDYLSLGGVCSTGPVALLSG LNPRPLSLVLHFFAVAIYGVGRMLLPFPSPK RLWAGVRLISAASGIIFPIIQAEGVRQMFFPATVPAYYY RAPPADDIKF
	Pg_S4043.9	MSKGTGGAAGAKGKKKGVTFVINCGKSVEDKIMDIA SLEKFPQERIKVGGKAGALGDSVS IPVASTINTLAGALYKVFCASPDQARKEMREACFDYLS LGGVCSTGPVALLSGLNPRPLSLVLHFFAVAIYGVGRM LLPFPSPKRLWAGVRLISAASGIIFPIIQAEGVRQMFFPA TVPAYYY
	Pg_S4043.1	MSKGIGGAVGAKGKKKGATFVINCRKPVEDKIMDIAS LEKFPHERIKVGGKAGALGDSVSVPVASTINTLAGALY KVICASPDQARKEMREACFDYLSLGGVCSTGPVALLS GLNPRPLALLMMRKKMKLFNCVSLDYAIKNHLR
	Pg_S7775.2	MTLQQILANAVGDDVILNDSNVVVNFEDDGNKVTVILE NGQCYEGDLLVGADGIWSKVRENLFGHKEPTYSGYT CYTGIANFVPADIDTVGYRVFLGHKQYFVSSDVGGGK MQWYAFHNEPAGGTDGNNDKKERLLQIFEGWCDNVI DLLLETNEDAILRRDIYDQEPTFTWGKGHVTLLGDSV HAMQPNLGQGGCMAIEDSYQLAMELDRACKQSNESG NPTDIASSLRSYESARKVRVSVIHGLARMAAIMASIYK AYLGVGLGPLSFLTKFRIPHPGTVGGRFFIDIGMPLMLS WVLG

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		GYGSNLEGRSPQCRLSDKANNQLKRWFEDDDALERA LSGEWFLFPVGNESSPSESIFLSRDAGNPCIIGSVPHANI LGISIVISSPQVSKLHAQISSKDGGAFFLTDLRSKHGTWI TDNEGRRYRVPPNFPARFHPSDVIEFGSDKKAAFRVKV MKIPLKTTEKKDWSEEALQAVLDLPT
Polygala tenuifolia	Pt9G00922	MLDPHTFAWIFGSVICFVVLYYLVLPYKNQRVSFEHAS NYLDNSITTTAGECRSSESKAKDVDVIIVGAGVAGAAL AHTLGKDGRRVHVIERELSEPDRIVGELLQPGGYLKLV ELGLQDCVEDIDAQRVFGYALFKDGKDTRLAYPLEKF HADVSGRSFHNGRFIQRMREKATSLPSVRLEQGTVTSL LEEKGAIRGVRYKNKDGLELTAYAPLTIVCDGCFSNLR RSLCNPKVDVPSCFVGLVLENCNLPYANHGHVILADPS PILFYPISSTEIRCLVDVPGQKVPSISNGEMEKYLKTVV APQIPPELYDAFVAAVDNGNIRTMPNRSMPAAPYPTPG ALLLGDAFNMRHPLTGGGMTVALSDIVVLRDLLRPLR DLHDAPILCKYLESFYTLRKPVASTINTLAGALYKVFC ASPDQARKEMRQACFDYLSLGGVFSKGPVSLLSGLNP RPLSLVLHFFAVAIYGVGRLLLPFPSPKRIWIGAKLISGA SGIIFPIIKAEGVRQMFLPATVPAYYRAPPIIKS
	Pt14G01074	MEVETELFAALLASLIGFVLLFILPRARAQTNARMTKA DNMNKGRQVKQCIKSLILDNCDASGTPDVIIVGSGVA GSALAYTLGKDGRRVHVIERDLTEPDRIVGELLQPGGY LKLIELGLEDCVEKIDAQQVLGYALFKDGKHTKVSYP LEKFHSDVSGRSFHNGRFIMRMRAKAASLPNVQLEEG TVTSLLEENGIVNGVHYRTKDGHEHKVYAPLTIVCDG CFSNLRRALCHPKVEVPSHFVGLVLENCQLPFANHGH VILGNPSPVLFYPISSTEIRCLVDVPGQRLPSISNGEMA NYLKTVVAPQVPSELHDAFVSAIDKGQIRTMPNRTMP ADPHPTPGALLMGDAFNMRHPLTGGGMTVALSDIAVL RDLLKPLHDFNDSPALCKYLESFYTLRKPVASTINTLA GALYKVFCASPDEARTEMRQACFDYLSLGGVFSTGPV ALLSGLNPRPLSLVLHFFAVAIYGVGRLMLPFPSPKRM WIGIRLVLSASGIIFPIIKGEGVRQMFFPATIPAYYQSSLL R
	Pt1G02478	MLDPHTFAWIFGSVICFVALYYLVLPFKNQRVSFEHAS NYLDNSITTTAGECRSSESKAKDVDIIIVGAGVAGAAL AHTLGKDGRRVHVIERDLSEPDRIVGELLQPGGYLKLV ELGLQDCVEDIDAQRVFGYALFKDGKDIRLAYPLEKFH ADVSGRSFHNGRFIQRMREKATSLLSVRLEQGTVTSLL EEKGAIRGVRYKNKDGLELTAYAPLTIVCDGCFSNLRR SLCNPKVDVPSCFVGLVLENCNLPYANHGHVILADPSP ILFYPISSTEIRCLVDVPGQKVPSISNGEMEKYLKTVVA PQIPPELYDAFVAAVDNGNIRTMPNKSMPAAPYPTPGA

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		LLLGDAFNMRHPLTGGGMTVALSDIVVLRDLLSPLRD LHDAPTLCRYLESFYTLRKPVASTINTLAGALYKVFCA SPDQARKEMCQACFDYLSLGGFFSKGPVSLLSGLNPR PLSLVLHFFAVAIYGVGRLLLPFPSPKRIWIGARLISGAS GIIFPIIKAEGVRQMFLPAIVPSFYRAPSIEVINKK
	Pt13G01952	MFSLKPSFLEPLQMEYQYLLAAIVSSTMLIIFILYSLEA KRKMRTSSFIYHNACHMGSVNVVEKEVDGETDIIVVG AGVAGSALAYTLGKDGRRVQVIERDLSEPDRIVGELLQ PGGYLKLIELGLEDCVNEIDAQRIYGYALYKDGKSTRT PYPLENFPPDVAGRSFHNGRFIQRMRGKAASLPNVRLE QGTVTSLLEENGTVKGVSYKTKSGQELLATAPLTIVCD GCFSNLRRSLCNPKVEIPSCFVGLVLENCNLPHANHGH VILADPSPILFYPISSNEIRCLVDVPGQKVPSVGNGEMA RYLKSVVAPQIPPELYDAFIAAIDKGNIRTMPNRSMPAS PHPTPGALLMGDAFNMRHPLTGGGMTVALSDIVLLRN LLRPLRNLNDSTSLCKYLESFYTLRKPMASTINTLAGA LYKVFCASPDPARKEMRDACFDYLSLGGVFTNGPTSL LSGLNSRPSSLVVHFFAVAVYGVGRLLIPFPTPRRLWIG ARLISGATAIIFPIIKAEGVRQMFFPVTVPAYYRAPPVHL HA
	Pt18G00164	MGSVDGMLEKTVDRETDIIVIGAGVAGSALAYTLGKD GRRVHVIERDLSEPDRIVGELLQPGGYLKLIELGLEDC VNEIDAQRIYGYALYKDGRSTRTPYPLKNLPSDVAGRS FHNGRFIQRMREKAASLPNVRLEQGTVISLLEENGTVK GVSYKNKNGQELIATAPLTIVCDGCFSNLRRSLCNPKV ESPSCFVGLLLESCDLPHANHGHVILADPSPILFYPISSN EIRCLVDVPGQKVPSVGNGEMARYLKIVVAPQVPSELY DAFIAAIDKGNIRTMPNRSMPASPYPTPGALLMGDAFN MRHPLTGGGMTVALSDIVLLRNLLRPLRNLNDSTALC KYLESFYTLRKPVASTINTLAGALYKVFCASPDPARKE MRDACFDYLSLGGVFTNGPTSLLSGLNSRPSTLVIHFFA VAVYGVGRLLIPFPTPQRLWIGARLISGATAIIFPIIKAEG VRQMFFPVTVPAYYRAPPIHLHA
	Pt12G00280	MEVDTELCIVATTLLISLFGFVLLFSVPRARAHANTRTT ETGNINKYQQVQCLKSLSSDISDSPGTSDVIVVGAGVA GSALAYTLGKKDGRRVHVIERDLTEPDRIVGELLHPGG YLKLLELGLEDCLETIDAQRVLGFALFKDGKHSRLAYP LEKLHSDVSGRSFHNGRFIMRMREKAASLPNLQLEQG TVTSLLEENGIIKGVHYKTKDGQERKVYAPLTIVCDGC FSNLRRALCHPKVEVASHFVGLVLENCGLPFANHGHVI LGNPSLVLFYPISSTEIRCMVDVPGEKLPSIANGEMAN YLKNVVAPQVPSELHDALVSAIDKGKFRTMPNRIMPA DPHPTPGALLIGDALNMRHPLTGGGMTVALSDIVVLR

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		DLLKPLRDLNDVPALCKYLESFYTLRKPIASIINTMAG VVYKVSCASSDESRTEIRQVCFDYLSLGGVFSTGPAAL LSGLNPRPLSLVLHSFAVAIYGVGRLMLPFPSPKRIWKG VRFILSASGIIFPIIQGEGVRQMLVPATTQAYYKSLTNEM TALTKIIVGAAAGIKESFNRLSTASKRFSLKSSSVVVS
	Pt2G00562	MRQKAATLSNVRLEQGTVTSLIEENGTVKGVSYKTKN GQLLTATASLTVVCDGCFSNLRRTLCKPKVEIPSSFVG MILENCNLPHANHGHVILGDPSPILFYPISSNEIRCLVD VPGHKVPSIANGEMASYLKTAVAPQIPAELHDAFLAAI EKGSIRTMTNRSMPASPCLTPGALLLGDAFNMRHPLTG GMTVALFRGLLRPLDDLSDSVSLCEYLDSFYTLRKPVA ATINTLAGALYNVFCTPPDPARNELRQACFDYLSLGGV FSSGPIALLSGLNPQPMNLVLHFFSVAIYGIGRLLVPFPS PLRMWIGVRLILDASAIIFPIIKAEGLRQMFFPVTVPAFL KDPYVQNVPYSLVLKNNMENHLFNVQNL
	Pt2G00563	MEYHYLLAAMVAFTMVIMFVLYSSEARKQEKGCLSV CGNGCQKTSDNGLGETEIDSRTDIIIVGAGVAGSALAY TLGKDGRRVHVIERDLSEPDRIVGELLQPGGYLKLVEL GLEDCVNEIDAQHVYGYALYKGGRSTRISYPLENFNT DVAGRSFHNGRFVQRMRQKAATLSNVRLEQGTVTSLI EENGTVKGVSYKTKNGQLLTATAPLTVVCDGCFSNLR HTLCKPKVEIPSSFIGMILENCNLPHANHGHVILGDPSP ILFYPISSNEIRCLVDVPGQKVPSIANGEMASYLKTAV APQIPAELHDAFLAAIEKGSIRTTTNRSMPASPCPTPGA LLLGDAFNMRHPLTGGGMTVALSDIVLLRDLLRPLDD LSDSVSLCEYLDSFYTLRKVCIRPNRTTNVIIWESLDT
	Pt18G00371	MERFRLAYCCLQRILLLAGTGTSSCLGKNRWSTAAYA LEATAVTRHTVIQIYPMMRIFLFFVLFLCYSCRSLAAIE KGNIRTMTNRSMSASPCPTSCALLLGDACNMRRPLTG GGMTVALSDIVLLRDLLKNCMYSQLRPGRPRKIQPPIV PFAPATVQDITPPNDVERTVQVALAKASMVDDLQNKN QELMKQIEICQEENKILDKMHRQKVAEVEKLTQTIREL EEAVLAGGAAANAVRDYRRKFQEMNEERKTLDRELA RAKVTANRVAVVVANEWKDAMSATEYY
Arabidopsis thaliana.	AT1G58440.1	MESQLWNWILPLLISSLLISFVAFYGFFVKPKRNGLRH DRKTVSTVTSDVGSVNITGDTVADVIVVGAGVAGSAL AYTLGKDKRRVHVIERDLSEPDRIVGELLQPGGYLKLL ELGIEDCVEEIDAQRVYGYALFKNGKRIRLAYPLEKFH EDVSGRSFHNGRFIQRMREKAASLPNVQLEQGTVLSL LEENGTIKGVRYKNKAGEEQTAFAALTIVCDGCFSNLR RSLCNPQVEVPSCFVGLVLENCNLPYANHGHVVLADP SPILMYPISSTEVRCLVDVPGQKVPSIANGEMKNYLK TVVAPQMPHEVYDSFIAAVDKGNIKSMPNRSMPASPY

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		PTPGALLMGDAFNMRHPLTGGGMTVALADIVVLRNL LRPLRDLSDGASLCKYLESFYTLRKPVAATINTLANAL YQVFCSSENEARNEMREACFDYLGLGGMCTSGPVSLL SGLNPRPLTLVCHFFAVAVYGVIRLLIPFPSPKRIWLGAK LISGASGIIFPIIKAEGVRQMFFPATVPAYYYKAPTVGET KCS
	AT2G22830.1	MKPFVIRNLPRFQSTLRSSLLYTNHRPSSRFSLSTRRFT TGATYIRRWKATAAQTLKLSAVNSTVMMKPAKIALDQ FIASLFTFLLLYILRRSSNKNKKNRGLVVSQNDTVSKNL ETEVDSGTDVIIVGAGVAGSALAHTLGKEGRRVHVIER DFSEQDRIVGELLQPGGYLKLIELGLEDCVKKIDAQRV LGYVLFKDGKHTKLAYPLETFDSDVAGRSFHNGRFVQ RMREKALTLSNVRLEQGTVTSLLEEHGTIKGVRYRTK EGNEFRSFAPLTIVCDGCFSNLRRSLCKPKVDVPSTFVG LVLENCELPFANHGHVVLGDPSPILMYPISSSEVRCLVD VPGQKLPPIANGEMAKYLKTRVAPQVPTKVREAFITAV EKGNIRTMPNRSMPADPIPTPGALLLGDAFNMRHPLTG GGMTVALADIVVLRDLLRPIRNLNDKEALSKYIESFYT LRKPVASTINTLADALYKVFLASSDEARTEMREACFDY LSLGGVFSSGPVALLSGLNPRPLSLVLHFFAVAIYAVCR LMLPFPSIESFWLGARIISSASSIIFPIIKAEGVRQMFFPR TIPAIYRAPP
	AT4G37760.1	MAPTIFVDHCILTTTFVASLFAFLLLYVLRRRSKTIHGS VNVRNGTLTVKSGTDVDIIIVGAGVAGAALAHTLGKE GRRVHVIERDLTEPDRIVGELLQPGGYLKLIELGLEDC VKDIDAQRVLGYALFKDGKHTKLSYPLDQFDSDVAGR SFHNGRFVQRMREKASLLPNVRMEQGTVTSLVEENGII KGVQYKTKDGQELKSFAPLTIVCDGCFSNLRRSLCKPK VEVPSNFVGLVLENCELPFPNHGHVVLGDPSPILFYPIS SSEVRCLVDVPGSKLPSVASGEMAHHLKTMVAPQVPP QIRDAFISAVEKGNIRTMPNRSMPADPIHTPGALLLGDA FNMRHPLTGGGMTVALSDIVILRDLLNPLVDLTNKESL SKYIESFYTLRKPVASTINTLAGALYKVFLASPDDARSE MRRACFDYLSLGGVCSSGPVALLSGLNPRPMSLVLHFF AVAIFGVGRLLVPLPSVKRLWLGARLISSASGIIFPIIKAE GVRQMFFPRTIPAIYRAPPTPSSSSPQ
	AT5G24150.1	MAFTNVCLWTLLAFMLTWTVFYVTNRGKKATQLADA VVEEREDGATDVIIVGAGVGGSALAYALAKDGRRVHV IERDLREPERIMGEFMQPGGRLMLSKLGLEDCLEGIDA QKATGMTVYKDGKEAVASFPVDNNNFPFDPSARSFHN GRFVQRLRQKASSLPNVRLEEGTVKSLIEEKGVIKGVT YKNSAGEETTALAPLTVVCDGCYSNLRRSLNDNNAEV LSYQVGFISKNCQLEEPEKLKLIMSKPSFTMLYQISSTD

Species	Gene ID	Protein sequence
		VRCVFEVLPNNIPSISNGEMATFVKNTIAPQVPLKLRK IFLKGIDEGEHIKAMPTKKMTATLSEKKGVILLGDAFN MRHPAIASGMMVLLSDILILRRLLQPLSNLGNAQKISQ VIKSFYDIRKPMSATVNTLGNAFSQVLVASTDEAKEAM RQGCYDYLSSGGFRTSGMMALLGGMNPRPISLIYHLC AITLSSIGHLLSPFPSPLRIWHSLRLFGLAMKMLVPHLK AEGVSQMLFPVNAAAYSKSYMAATAL
	AT5G24160.1	MAFTHVCLWTLVAFVLTWTVFYLTNMKKKATDLADT VAEDQKDGAADVIIVGAGVGGSALAYALAKDGRRVH VIERDMREPERMMGEFMQPGGRLMLSKLGLQDCLED IDAQKATGLAVYKDGKEADAPFPVDNNNFSYEPSARS FHNGRFVQQLRRKAFSLSNVRLEEGTVKSLLEEKGVV KGVTYKNKEGEETTALAPLTVVCDGCYSNLRRSLNDD NNAEIMSYIVGYISKNCRLEEPEKLHLILSKPSFTMVYQ ISSTDVRCGFEVLPENFPSIANGEMSTFMKNTIVPQVPP KLRKIFLKGIDEGAHIKVVPAKRMTSTLSKKKGVIVLG DAFNMRHPVVASGMMVLLSDILILRRLLQPLSNLGDA NKVSEVINSFYDIRKPMSATVNTLGNAFSQVLIGSTDE AKEAMRQGVYDYLCSGGFRTSGMMALLGGMNPRPL SLVYHLCAITLSSIGQLLSPFPSPLRIWHSLKLFGLAMK MLVPNLKAEGVSQMLFPANAAAYHKSYMAATTL
	AT5G24140.1	MTYAWLWTLLAFVLTWMVFHLIKMKKAATGDLEAEA EARRDGATDVIIVGAGVAGASLAYALAKDGRRVHVIE RDLKEPQRFMGELMQAGGRFMLAQLGLEDCLEDIDA QEAKSLAIYKDGKHATLPFPDDKSFPHEPVGRLLRNGR LVQRLRQKAASLSNVQLEEGTVKSLIEEEGVVKGVTY KNSAGEEITAFAPLTVVCDGCYSNLRRSLVDNTEEVLS YMVGYVTKNSRLEDPHSLHLIFSKPLVCVIYQITSDEV RCVAEVPADSIPSISNGEMSTFLKKSMAPQIPETGNLRE IFLKGIEEGLPEIKSTATKSMSSRLCDKRGVIVLGDAFN MRHPIIASGMMVALSDICILRNLLKPLPNLSNTKKVSDL VKSFYIIRKPMSATVNTLASIFSQVLVATTDEAREGMRQ GCFNYLARGDFKTRGLMTILGGMNPHPLTLVLHLVAIT LTSMGHLLSPFPSPRRFWHSLRILAWALQMLGAHLVDE GFKEMLIPTNAAAYRRNYIATTTV
Oryza sativa	LOC_Os03g12910.2	MKTGGRSPPLLPPSPPLPINRNNLEASARLRLLLPPPPP LLPFSPLARRRLAATRIGAAPRPQQRSPPPRAERPRRPH HYWCGMAEVAAGTGQLIGVAVATLLAAIFLAAALLGS RRRRRRAPLAGKPAAVGGCGVADGEGCGGDGRTDVI VVGAGVAGSALAYTLGKDGRRVHVIERDLTEPDRIVG ELLQPGGYLKLIELGLEDCVQEIDAQRVLGYALFKDGK DTKLSYPLEKFHSDVAGRSFHNGRFIQRMRQKAASLP NVQLEQGTVTSLVEEDGTVKGVKYKTKSGEELKAYAP

Species	Gene ID	Protein sequence
		LTIVCDGCFSNLRRALCSPKVDVPSCFVGLVLENCQLP HANHGHVVLANPSPILFYPISSTEVRCLVDVPGQKVPSI ANGEMAKYLKTVVAPQIPPEIYDSFIAAIDKGSIRTMPN RSMPAAPHPTPGALLMGDAFNMRHPLTGGGMTVALS DIVVLRNLLKPLRNLHDASALCKYLESFYTLRKPVAST INTLAGALYKVFSASPDQARNEMRQACFDYLSLGGVF SNGPIALLSGLNPRPLSLVAHFFAVAIYGVGRLMLPLPS PKRMWIGVRLISSFHCRVHVV
	LOC_Os03g12900.5	MTEPDRIVGELLQPGGYLKLMELGLEDCVEEIDAQRV LGYALLKDGRNTKLSYPLEKFHSDVAGRSFHNGRFIQ KMRQKAASLPNVHLEQGTVTSLLEEGGTVKGVQYKT KSGEELKAYAPLTIVCDGCFSNLRRVLCSPKVDVPSCF VGLVLENCQLPHPNHGHVILANPSPILCYPISSTEIRCLV DIPGQKVPSMATGEMAKYLKTVVAPQIPPELHDSFIAA IDKGSIRTMPNRSMPAAPLPTPGALLMGDAFNMRHPLT GGGMTVAFSDIVVLRNLLKPLGNLHDAPSLCKYLESF YTLRKPVASTINTLAGALYKVFCASTDQAKNEMREAC FDYLSLGGVFSNGPIALLSGLNPRPLSLVAHFFAVAIYG VGRLMLPVPSPKRMWIGARLVSGACGIIFPIIKAEGVR QMFFPATVPAYYRAPPPMESG
	LOC_Os03g12900.1	MDAVAGAGQLVGLAAATLLTAAFLVAVKMGWRRRRR QREVAPEGGCRVVGGDGGDRTDIVIVGAGVAGSALAY TLGKDGRRVHVIERDMTEPDRIVGELLQPGGYLKLME LGLEDCVEEIDAQRVLGYALLKDGRNTKLSYPLEKFHS DVAGRSFHNGRFIQKMRQKAASLPNVHLEQGTVTSLL EEGGTVKGVQYKTKSGEELKAYAPLTIVCDGCFSNLRR VLCSPKVDVPSCFVGLVLENCQLPHPNHGHVILANPSP ILCYPISSTEIRCLVDIPGQKVPSMATGEMAKYLKTVVA PQIPPELHDSFIAAIDKGSIRTMPNRSMPAAPLPTPGALL MGDAFNMRHPLTGGGMTVAFSDIVVLRNLLKPLGNL HDAPSLCKYLESFYTLRKPVASTINTLAGALYKVFCAS TDQAKNEMREACFDYLSLGGVFSNGPIALLSGLNPRP LSLVAHFFAVAIYGVGRLMLPVPSPKRMWIGARLVSGA CGIIFPIIKAEGVRQMFFPATVPAYYRAPPPMDQIRITHI NAILHRSCRLCPLISELLEAEKGTEVPCLFRHRTLPFKR LNACTGDMTYTYMQ
Platycodon grandiflorum	PgSE6	MIMELLSMKMVEEFMLEVVIATLFGFAVFYFLGSEKKS AERALIKTMDKRTNECVKTSGEDAQCSRGDTDQGKT DIIIVGAGVAGSALACSLGKDGRRVLVIERDLTLQDRIV DCVNDIDAQRVFGYALFKDGKSTRLSYPLEKFHSDVS GRSFHNGRFIQRMREKAATISNVTLEQGTVTSLIEEKG TIKGVQYKTKTGQEMTASAPLTIVCDGCFSNLRRGLC KPEVDIPSCFVALILKNCDVPFPNHGHVFLADPSPILCY

Species	Gene ID	Protein sequence
		PISSTEIRLLVDIPGQKVPSVSNGEMTHYLKTVVASQIPP ELHSAFIAAIEEGNIRTMANRSMPAAPQPTPGALLLGD AFNMRHPLTGGGMTVALSDIVILRDLLRPLDNLDDPSA LCNYLELFYTLRKPVASTINTLAGALYKVFCASPDEAR NELRQACFDYLSLGGVFSIGPVSLLSGLNPKPMSLVFH FFSVAIFGVGRLLLPFPSLKRAWLGARLIADASSIIFPIIR AEGAGRMFFPAAVPAYYRSPFTH
	PgSE2	MDKLMQTQGRKIFRQKLQQYASDGEISEEEVKALERL QNCDLPYKNHGHVILADPSPILFYQISDTEVRCLVDVA GEWIPPELYTAFLAAIDKGNIRTMPNRSMPADPQPTLG ALLLGDAFNMRHPLTGGGMTVALSDIVILRDLFRPIRD LNDASTLANYLESFYTLRKPVASTINTLAGALPAVSVFP ATSTTISGFRLLLFPAASTIVFE
	PgSE3	MSCLRTMPNRSMPADPQPTPGALLLGDAFNMRHPLTG GGMTVALSDIVILRDLFRPIRDLNDASTLANYLESFYTL RKVRLMAIKLYVSFYTLRKVGDFGLARVLPTLDRYNL SSKVQSALGYMAPESNFAVVYLFCCYVVYLYIAYIR
	PgSE1	MLALNPPTSLLLLDPSFPLHYSQFKIRSQLHRPRERNRS ISATFNKTRSESEKNQVSISSLSSSLTVTQFPVKKKMLT VDGTLIVATLFASVFGFVFLHILGRLNNSNKVKPAYSEI RCDPSTARECGPNNGSEIDVVIVGAGVAGAALAHTLG KEGRRVQVIERDLTEPDRIVGELLQPGGYLKLIELGLE DCVEEIDAQRVLGYALFKDGRNTRVSYPLEKFHTDVS GRSFHNGRFIQKMREKAATLPNVRLEQGTVTSLIEENG TVKGVQYKTKNGQELKAYAPLTIVCDGCFSNLRRSLC NPKVEVPSCFVGLILENCKLPYPNHGHVILADPSPILLY PISSTEVRCLVDVPGQKLPSLANGEMAKYLKTNVAPQ VPPELHDAFVAAIEKGNIRTMPNRSMPADPHPTPGALL MGDAFNMRHPLTGGGMTVALSDICVLRDLLKSLHDM RDADSLCKYLESFYTLRKPVASTINTLAGALYKVFCAS SDQARTEMREACFDYLSLGGVFSTGPVALLSGLNPRPL SLVLHFFAVAVYGVGRLLVPFPSPKRLWIGARLISNASG IIFPIIKAEGIRQMFFPASVPAYYRAPRPSDSR
	PgSE4	MADQYLLGLILASLLGSLLLYRLIVKKNARECSMEVST TATTATTTTSINGECRSRNDADIIIVGAGVAGAALAHTL GMEERRVHVIERDLTEPDRIVGELLQPGGYLKLIELGL EDCVEEIDAQRVFGYALFKNGKSTRLSYPLEKFHKDVS GRSFHNGRFIQRMREKSSLLPNVRLEQGTVTSLLEENG IIKGVQYKSKTGEEMKAYAPLTIVCDGCFSNLRRSLCN PKVDVPSCFVGLVLENCQLPHENHGHVILADPSPILFY RISSTEIRCLVDVPGQRVPSISNGDLSKYLKTVVAPQIPP ELYDAFIATVDKGNIRTMPNRSMPAAPHPTPGALLMG DAFNMRHPLTGGGMTVALSDIVVLRNLLRPLHDLNDA

Species	Gene ID	Protein sequence
		PTLCKYLESFYTLRKPVASTINTLAGALYKVFCASPDQ ARKEMREACFDYLSLGGVFSTGPVSLLSGLNPRPMSL VLHFFAVAIYGVGRLLLPFPSPKRMWIGARLITSASGIIF PIIKAEGVRQMFFPATVAAYYRAPPAK
	PgSE7	MANSSSSTTSSPSMHAYAMVELYTMGNLQYLVAGTIA FLLGFVVLYNSTRRSRNIFNGGLAEVGELDSGVKRSGN GQSFRSDTAGNTDVIIVGAGVAGAALACTLAKDGRQV HVIERDLTEPDRIVGELLQPGGYQKLIELGLEDCLNGIE AQEVFGYALYMDGKSTRLSYPLEKYHTDVSGRSFHNG RFIQRMREKAASLPNVKLEQGTVTSLLQKEGTVHGVQ YKTKDGKEMTAYAPLTIVCDGCFSNLRRSLCKPKVEVP SCFVGLVLENCDLPYKNHGHVILADPSPILFYQISDTEV RCLVDVPGEKVPSISNGEMGRYLKSVVAPQIPPELYTAF LAAIDKGNIRTMPNRSMPADPQPTPGALLLGDAFNMR HPLTGGGMTVALSDIVILRDLFRPIRDLNDASTLANYL ESFYTLRKVRLVAIKLYVSCFYDVFEKRTKKEQKKKVE LSSIYGGFPVASTINTLAGALYRVFCASPDPARKEMRD ACFDYLSLGGIFTDGPTALLSGLNPRPLSLFLHFFAVAIY GVGRLLIPFPSAKRLWLGIRLISGASGIIFPIIKSEGVRQ MFFPGTVPAYYRGPPVG
	PgSE5	MAEQLILAVVIAVLLGFAVLYLLGKSKKKGKIATKFSSQ TNESVNITKEVSQSLPETAGNVDIIVVGAGVAGSALAC AIGKDGRQVLVIERDLALQDRIVGELLQPGGYLKLIEL GLEGKQDVYCVRNIDAQNVYGYALFKDGKSTKLTYP LEKFDSDVCGRSFHNGRFIQRMREKAATIANVRLEQG TVTSLLEEKGTIKGVQYKTKAGQEMTACAPLTIVCDG CFSNLRRGLCKPEVDIPSCFVALLLKNCEVPYPNHGHV FLANPSPILCYRISSTEIRLLVDIPGQKVPSISNGEMAHY LKTMVAPQIPPELHGAFMTAIEEGNIRTMANRSMPAAP QPTPGAILLGDAFNMRHPLTGGGMTVALSDIVVLLNLL RPLKNLNDASALCKYLDSFYTLRKPVASTINTLAGALY KVFSASPDQARIELRQACFDYLSLGGVFSTGPVSLLSG LNPKPMTLVLHFFSVAIFGVGRLLLPYPSPKRTWLGAR LISDASSIIFPIIRAEGAGQMFFSTAVPAYYSSPFTH