

Multiple sequence alignment for NJ and ML trees in Fig. 1

**BLOCK#1**-----

```

O.sativaPDI-C      1 ----MISSSKLKSVDFFYRKIPRDLTEASLSGAGLSIVAALAMVFLFGMELSNYLAVNTS
Z.maysPDI-C       1 ----MISSSKLKSVDFFYRKIPRDLTEASLSGAGLSIVAALAMVFLFGMELSSYLAVNTT
A.thalianaPDI13   1 ----MVSTSKIKSVDFFYRKIPRDLTEASLSGAGLSIVAALAMVFLFGMELSSYLAINTS
A.thalianaPDI12   1 ----MVSSTKLKSVDFFYRKIPRDLTEASLSGAGLSIVAALFMMFLFGMELSSYLEVNTT
A.thalianaPDI7    1 ----MVSTSKIKSVDFFYRKIPRDLTEASLSGAGLSIIAALSMIFLFGMELNNYLAVSTS
P.trichocarpaPDI-C1 1 ----MVSTNKLKSVDFFYRKIPRDLTEASLSGAGLSIVAALAMVFLFGMELNNYLTVNTS
P.trichocarpaPDI-C2 1 ----MVSTNKLKSVDFFYRKIPRDLTEASLSGAGLSIVAALAMVFLFGMELNNYLTVNTS
P.patensPDI-C     1 ----MVSTSKLKSVDFFYRKIPRDLTEASLSGAGLSIIAALTMVFLFGMELSAYLSTTTS
S.moellendorffiiPDI-C 1 ----MTTASKIKSVDFFYRKIPRDLTEASLSGAGLSIIAALFAMIFLFGMELNNYLTVSST
C.subellipsoideaPDI-C 1 ----MARVLQKLRSDFFYRKIPNCLTEATLACAGLSLVAAFTIVVLLTAELSSFLAETK
C.reinhardtiiPDI-C 1 ----MVRFLSRLKADFFYRKIPSDLTEATLIGAWLSIVAALVMILFLVAELSAFLSTTTS
V.carteriPDI-C    1 ----MARLFSKLRKADFFYRKIPSDLTEATLIGAWLSILAALVMVFLFAELMMSFLSTTTT
C.reinhardtiiERV-A 1 --MSGGGFLGKLRKALDAYPKINEDFFTKTMSGGIITIVSSVVMVLLFLSELRLFLTSSA
V.carteriERV-A    1 MSNSGGGFLGKLRKALDAYPKINEDFFTKTMSGGIITIVSSVVMVLLFLSELRLFLTQSV
C.subellipsoideaERV-A 1 ----MEGIVSKLRKALDAYPKINEDFFQRTLGGIITIGSSIIMLCLFSELRLFLKITT
O.sativaERV-A3    1 ----MEGFLQKLRKALDAYPKVNEDEFYKRTLGGVVTVVASVVMVLLFLVSELRSLYFYSATE
Z.maysERV-A2     1 ----MDAFLQRLKRLDAYPKVNEDEFYKRTLGGIVTLVAAVVMLLFLFISELRSLYFYSATE
Z.maysERV-A3     1 ----MDAFLHRLKRLDAYPKVNEDEFYKRTLGGIVTLVAAVVMLLFLFISELRSLYFYSSTE
S.moellendorffiiERV-A 1 ----MQMLKQLQALDAYPKINEDFHSRTLGGVITVVSIFMAILFLFITELRKFLLPGTT
P.patensERV-A1    1 ---MALQMIQKLRKALDAYPKINEDFYSRTLGGIITIIISATFMVLLFSELRLYLAQVA
P.patensERV-A4    1 ----MSFFNKLKRLDAYPKISEDFFYSRTLGGIITLVSSVFMVTLFITELRSLYLAQTTQ
P.patensERV-A2    1 ----MAVFNKLRKALDAYPKISEDFFYSRTLGGVITLVSTVFMVFLFVTELRSLYLAQTTQ
P.patensERV-A3    1 ----MAIFNKLRKALDAYPKISEDFFYSRTLGGVITLVSSVFMVFLFVTELRSLYLAQTTQ
O.sativaERV-A2    1 ----MDLWNKLRKALDAYPKVNEDEFYKRTLGGIITIASLAILLFLSELRLYLYSATD
P.trichocarpaERV-A3 1 ----MEGIYQKLRKALDAYPKINEDFYSRTLGGIITLISSIIIMLFLFSELRSLYLAHVTE
P.trichocarpaERV-A4 1 ----MDRIYQKLRKALDAYPKINEDFYSRTLGGIITLISSVLIILFLFSELRSLYLAHKVTE
A.thalianaERV-A2  1 ----MVGVMNRLKRLDAYPKINEDFYRRTLGGVITLASSIVMLLFLFSELRLYLAHPVTE
O.sativaERV-A1    1 ----MEGLLSKLRKALDAYPKVNEDEFYKRTLGGIITLASSVVMVLLFLVSELRSLYLAHVTE
Z.maysERV-A1     1 ----MDGLLSKLRKALDAYPKVNEDEFYKRTLGGIITLVSSAVMLLFLVSELRSLYLAHVTE
A.thalianaERV-A1  1 ----MAGILNKLKRLDAYPKINEDFYSRTLGGVITLSSVVMVLLFLFSELRSLYLAHTVTE
P.trichocarpaERV-A1 1 ----MEGLMSKLRKALDAYPKINEDFYSRTLGGVITLASSVVMVLLFLFSELRSLYLAHVTE
P.trichocarpaERV-A2 1 ----MDGLMSKLRKALDAYPKINEDFYSRTLGGVITLASSIVMFLFLFSELRSLYLAHVTE
C.reinhardtiiERV-B 1 ----MGKGRRLSSLSAYVKEPEAHLVQQTTHGALVTLGGVLLATLTLHEKSFYQMRHV
V.carteriERV-B    1 -----MKFKLSSLSAYVKEPEAHLVQQTTHGALVTLGGVLLAAMLFVHELGSFYRQHRV
C.subellipsoideaERV-B 1 ----MKLKSFNRFSAAYARAEASHLVQRTYFGAIVTVLGVLLAIVLFAELREYITPFSI
P.patensERV-B     1 ---MRKEKWQVTKNLDAPRAEHLHLLQKTSGAAVSAIGLFLMGVLFVHELRFLYLETVTV
S.moellendorffiiERV-B 1 ----MGL--KMKN--NAPFAHADEHLLQKTVSGAIVTIVGVSIIILVLFAYEFKFYLTSTNVV
O.sativaERV-B     1 ----MGRIPSLKSNAPFAEHLHLLKKTYSGAVTIFGLLIMVTLFAHELRKFYLTTYTV
Z.maysERV-B       1 ----MARIPSLKSNAPFAEHLHLLKKTYSGAVVTFGLLIMVTLFAHELRKFYLTTYTV
A.thalianaERV-B   1 ----MGVKQALRSLDAPFAEHLHLLQKTSGAVVSVIGLLIMATLFLHETSYLNTLTV
P.trichocarpaERV-B1 1 ----MGMKQAIKRLDAPFAEHLHLLQKTSGALVSIIGLVTMATLFLYHETLAYYLTTYTV
P.trichocarpaERV-B2 1 ----MGVKQAIKRLDAPFAEHLHLLQKTSGALVSVIGLVTMATLFLYHETLAYYLTTYTV

```

**ERGIC-N**-----

-----> BLOCK#2 ----->

O.sativaPDI-C 56 TSVIVDRSSDGEFLRIDFNLSFPALSC EFASVDVSDV LGTNRIN----ITKTVRKYSI--  
Z.maysPDI-C 56 TSVIVDRSSDGEFLRIDFNMSFPALSC EFASVDVSDV LGTNRIN----ITKTVRKYSI--  
A.thalianaPDI13 56 TSVIVDKSSDGDFLRIDFNISFPALSC EFASVDVSDV FGTNRIN----ISKTIKRVPI--  
A.thalianaPDI12 56 TAVIVDKSSDGDFLRIDFNISFPALSC EFASVDVSDV LGTNRIN----ITKTVRKYFI--  
A.thalianaPDI7 56 TSVIVDRSADGDFLRIDFNISFPALSC EFASVDVSDV LGTNRIN----ITKTVRKYFI--  
P.trichocarpaPDI-C1 56 TTIVVNDSSDGEFLRIDFNISFPALSC EFASVDVSDV LGTNRIN----ITKTIKRFESI--  
P.trichocarpaPDI-C2 56 TSVIVDSSDGEFLRIDFNLSFPALSC EFASVDVSDV LGTNRIN----ITKTIKRFESI--  
P.patensPDI-C 56 TSVVVDRSRDGEYLRIIDFNLSFPALSC EFASVDVSDV LGTNRIN----LTKTVRKYFI--  
S.moellendorffiiPDI-C 56 TNVVVDRSRDGEYLRIQFNMSFPALSC EFASVDVSDALGTNRYN----LTKTVRKYFI--  
C.subellipsoideaPDI-C 57 EELIVDRSAHGDLLRINFNISFPALSC EFATLDVSDALGTRMNM----LTKTIKRLPI--  
C.reinhardtiiPDI-C 57 SQLVVDRSPQNEELKINFNISFPALSC EFATVDVSDSLGTRMNM----LTKTVRKVPIITL  
V.carteriPDI-C 57 TQLIVDRSPQNEELKINFNISFPALSC EFATVDVSDTLGTRMNM----LTKTVRKMPITT  
C.reinhardtiiERV-A 59 HELSVDVGR-GEKLIHFDVTFPKVPCAWLSLDAMDISGELHLD----LDEDVYKORL--  
V.carteriERV-A 61 HELSVDVGR-GEKLIHFDLTFPKVPCSWLSLDAMDISGELHLD----LDEDVYKORL--  
C.subellipsoideaERV-A 57 NELSVDVTR-GDQLSINFDMTFPALPC EWLISLDLMDISGEMHLD----VDEDVYKORL--  
O.sativaERV-A3 57 TKLVVDTSR-GERLRVNFVDTFFPCTLLSVDTMDISGEQHHD----IREDIEKRL--  
Z.maysERV-A2 57 TKLVVDTSR-GERLRVNFDTFFLSHPC TLLSVDTMDISGEQHHD----IREDIEKRL--  
Z.maysERV-A3 57 TKLVVDTSR-GERLRVNFDTFFSPHPC TLLSVDTMDISGEQHHD----IREDIEKRL--  
S.moellendorffiiERV-A 56 SELLVVDTSR-GETLQINFDITFPALACSVVSLDAMDVSGEQHLD----VKENIFKRL--  
P.patensERV-A1 58 NDLVVDTER-GGTQINLNDVTFPALACSVVSLDAMDISGEAHL----VKENIFKRL--  
P.patensERV-A4 56 NQLVVDTSR-GETLQINLDTFFPALACSVVSLDAMDISGEQHLD----VRENIFKRL--  
P.patensERV-A2 56 NQLVVDTSR-GETLQINLDTFFPALACSMVSLDAMDISGEQHLD----VRENIFKRL--  
P.patensERV-A3 56 NQLVVDTSR-GETLQINLDTFFPALACSVVSLDAMDISGELHLD----VRENIFKRL--  
O.sativaERV-A2 56 SKLVVDTSR-GERLRVNFVDTFFPALPCSLVAVDTMDVSGEQHYD----IREDIEKRL--  
P.trichocarpaERV-A3 57 TKLVVDVTR-GQTLRINFDITFPALRC SLISVDAMDISGEQHHD----IREDIEKRL--  
P.trichocarpaERV-A4 57 TKLVVDTSR-GQSLRINFDVTFPALRC SLISVDAMDISGEQHLD----IREDIEKRL--  
A.thalianaERV-A2 57 TQLRVVDTSR-GEKLRINFDVTFPALCCSIIISLDSMDISGERHLD----VREDIEKRL--  
O.sativaERV-A1 57 TTLRVVDTSR-GETLRINFDVTFPALCCSIIISLDMAMDISGEQHLD----VREDIEKORI--  
Z.maysERV-A1 57 TTLRVVDTSR-GETLRINFDVTFPALCCSIIISLDMAMDISGEQHLD----VREDIEKORI--  
A.thalianaERV-A1 57 TKLVVDTSR-GETLRINFDITFPALACSIISVDAMDISGELHLD----VREDIEKRL--  
P.trichocarpaERV-A1 57 TKLVVDTSR-GETLRINFDVTFPALPCSIISLDMAMDISGEQHLD----VREDIEKRL--  
P.trichocarpaERV-A2 57 TKLVVDTSR-GETLRINFDVTFPALPCSIISLDMAMDISGEQHLD----VREDIEKRL--  
C.reinhardtiiERV-B 56 TVLSVDLAR-RHALTINLDTFFPSVPCAVLSIDVLDISGTAENDASFAHMRVHKMRL--  
V.carteriERV-B 54 HQMSVDLAR-RNALTINLDTFFPALPCAVLSIDVLDIAGTAENDASYAHMHMTHKRL--  
C.subellipsoideaERV-B 55 QTMSVDTSR-AHYLRMNFNTYFSPMPCQVLSLDATDMSGEKSGDSGHAANGEIHKVRL--  
P.patensERV-B 58 HEMSVDVGR-GEKLEPIHINMTFPALPC EVLISLDATDMSGKHEVD----LDTNIWKRL--  
S.moellendorffiiERV-B 54 HQMSVDVTR-GQNLPIHINMTFFPSHPC QILISVDATDMSGKHEVD----LDTNIWKRL--  
O.sativaERV-B 56 HQMSVDLKR-GETLEPIHINMSFPSPHPC EVLISVDATDMSGKHEVD----LHTNIWKRL--  
Z.maysERV-B 56 HQMSVDLKR-GETLEPIHINMSFPSPHPC EVLISVDATDMSGKHEVD----LHTNIWKRL--  
A.thalianaERV-B 56 HQMSVDLKR-GETLEPIHVNTFFPSHPC DVLSVDATDMSGKHEVD----LDTNIWKRL--  
P.trichocarpaERV-B1 56 HQMSVDLKR-GETLEPIHINMTFFPSHPC DVLSVDATDMSGKHEVD----LDTSIWKRL--  
P.trichocarpaERV-B2 56 HQMSVDLQR-GEILEPIHVNTFFPSHPC DVLSVDATDMSGKHEVD----LDTNIWKRL--



O.sativaPDI-C	110	--DRNLVPTG-SEFHPGPIPTVSKHGDDVEEN-----HDDGSVPLSSRNFDYSYSHQYPVL
Z.maysPDI-C	110	--DRNLVPTG-SEFHPGPIPILNKHGDDVEED-----HVDGAFSLSSRNFDSSFHSHQYPVL
A.thalianaPDI13	110	--DPLRATA-EEFHSSTDLHLINHGDEDHGD-----NSTYADIPLTGAAFEKFTTHHFQIL
A.thalianaPDI12	110	--DPLRSTG-AEFHSGIALHNNINHGEEETKEE-----FPDGAIPLTSASFALSHHFPIIL
A.thalianaPDI7	110	--DSNMRPTG-SEFHAGEVLSLINHGDETGEE-----IVEDSVPLTGRNFDFTTHQFPIL
P.trichocarpaPDI-C1	110	--DHDLKPTG-SEFHS GPVLHQIKHGDEVDEE-----GGEGSVSLKAHNFDQYSHQYPIL
P.trichocarpaPDI-C2	110	--DHDLKPTG-SEFHS GPVLHHLINHGDEVHEE-----GSEGSVSLKAHNFDQYTHQYPIL
P.patensPDI-C	110	--DPLLQRIG-QEFHAGSVPNIKSHGDEEDVGEDMFEHLGEGAVELNKNTFDVYAQQFVSVL
S.moellendorffiiPDI-C	110	--DPNLKIVG-PEFHPGPIPNPNTSHGDDHEG-----EGAHVLTSSSTFDEYARRYSVL
C.subellipsoideaPDI-C	111	--DEDQRAG-YYVHDDISNVDIKYDEPSVSQ-----DFALPLSKDSFKATLEAYSIV
C.reinhardtiiPDI-C	113	DMERQGAAYEDTAHKVGPKYDAEGHFDEEPDI-----DITVPLSHENFEATLARYPIA
V.carteriPDI-C	113	ELERMGSAYEDSSHKPGPKYDEEGRFDDEPDI-----DITVPLSHVNFEATLARYPIV
C.reinhardtiiERV-A	112	--NANGSPVK-EVEKHNVDATKKKP-----
V.carteriERV-A	114	--SANGSPVK-EVEKHNVEA-----
C.subellipsoideaERV-A	110	--DSNGVVP-DSIEKHVQV-----
O.sativaERV-A3	110	--DAHGNVIE--ARKEGIGG-----
Z.maysERV-A2	110	--DAHGNVIE--ARKVSIIGG-----
Z.maysERV-A3	110	--NSHGNVIE--ARKEGIGG-----
S.moellendorffiiERV-A	109	--DPSGKVVQ-PPVQEDIGG-----
P.patensERV-A1	111	--DVNGKVIIE-PARQESINQ-----
P.patensERV-A4	109	--DVHGKAVD-APKPDAINA-----
P.patensERV-A2	109	--DVHGKVVN-APKPDAINA-----
P.patensERV-A3	109	--DVHGKAVD-APKPDAINA-----
O.sativaERV-A2	109	--DNLGNVIE--SRKDGVGA-----
P.trichocarpaERV-A3	110	--NAHGDVIE--VRQDGIGA-----
P.trichocarpaERV-A4	110	--NAHGDVIE--VRQDGIGA-----
A.thalianaERV-A2	110	--DSSGNVIE--AKQDGIGH-----
O.sativaERV-A1	110	--DVHGNVIA--TKQDAVGG-----
Z.maysERV-A1	110	--DAHGNVIA--TRQDVVGG-----
A.thalianaERV-A1	110	--DSNGNTIE--ARQDGIGA-----
P.trichocarpaERV-A1	110	--DFHGNVIE--ARQDGIGA-----
P.trichocarpaERV-A2	110	--DSHGNVIE--SRQDGIGA-----
C.reinhardtiiERV-B	113	--DKAGNQLGKAEYHT-----
V.carteriERV-B	111	--DGAGKPLGKAEYHT-----
C.subellipsoideaERV-B	112	--NEAGEKGLGEYIP-----
P.patensERV-B	111	--HRDGYVIG-SEFVNDLVE-----
S.moellendorffiiERV-B	107	--HKDGHILG-SEYLSDLVE-----
O.sativaERV-B	109	--DKYGHILG-TEYLSDLVEK-----
Z.maysERV-B	109	--DKYGHILG-TEYLSDLVEK-----
A.thalianaERV-B	109	--NSHGHILG-TEYISDLVEKGEHGH-----
P.trichocarpaERV-B1	109	--NSYGHITG-TEYLSDLVE-----
P.trichocarpaERV-B2	109	--NSHGHITG-TEYLSDLVE-----

O.sativaPDI-C	162	VVNFYAPWCYWSNRLKPSWEKTAKIMRERYDPEMDGRILLAKVDCTEEIDLCRRHHIQGY
Z.maysPDI-C	162	VVNFYAPWCYWSNRLKPSWEKTAKIMRERYDPEMDGRILLGKVDCTEEVELCRRNHIQGY
A.thalianaPDI13	163	VVNFYAPWCYWSNRLKPSWVKASQITRERYNPGTDRLVLLGSVDCTEEPTLCKSNHIQGY
A.thalianaPDI12	162	VVNFNAPWCYWSNRLKPSWEKAANI IKQRYDPEADGRVLLGNVDCTEEPALCKRNHIQGY
A.thalianaPDI7	162	VVNFYAPWCYWCNLLKPSWEKAAQIKERYDPEMDGRVILLAKVDCQEGDLCRRNHIQGY
P.trichocarpaPDI-C1	162	VVNFYAPWCYWSNRLKPSWEKAAKI IRERYDPEMDGRILLAKVDCTEEGDLCRRNHIQGY
P.trichocarpaPDI-C2	162	VVNFYAPWCYWSNRLKPSWEKAAKI IRERYDPEIDGRILLAKVDCTEEGDLCRRNHIQGY
P.patensPDI-C	167	VVNFYAPWCPWSNKLKASWEKAAKI IADKYNPEMDGRILLAKVDCVVNVELCRSHHIQGY
S.moellendorffiiPDI-C	160	VVNFYAPWC IWSARLKPSWDKAAGI IAEKYH PDT-GRILLGKVDCTDNNDLCKRHHIQGF
C.subellipsoideaPDI-C	161	VVNFYAPWCPWCQRLEPTWEAVTQEVHTKY-PDADGRIRFAKVDCTEVDLCREHQITGF
C.reinhardtiiPDI-C	166	VINFYAPWCHWCQRLEPTWEAATKEVHDKY-PEWDGRVRFKVDCTAEVDLCRQHFIQGF
V.carteriPDI-C	166	VVNFYAPWCHWCQRLEPTWEAATKEVHDKY-PEWDGRIRFAKVDCTQEMELCRTHFIQGF
C.reinhardtiiERV-A	134	-----PSAVNATASAAAGGAPAGGAAGAAGAEGG
V.carteriERV-A	131	-----TKKVVP-----
C.subellipsoideaERV-A	127	-----PELDTLL-----
O.sativaERV-A3	126	-----AKIESPLQ-----
Z.maysERV-A2	126	-----AKIERPLQ-----
Z.maysERV-A3	126	-----AKVERPLQ-----
S.moellendorffiiERV-A	126	-----PKIDKPLQ-----
P.patensERV-A1	128	-----PKLIDKPLQ-----
P.patensERV-A4	126	-----PKVQRPLQ-----
P.patensERV-A2	126	-----PKVQKPLQ-----
P.patensERV-A3	126	-----PKVQKPLQ-----
O.sativaERV-A2	125	-----PKIERPLQ-----
P.trichocarpaERV-A3	126	-----PKIDKPLQ-----
P.trichocarpaERV-A4	126	-----PKIDRPLQ-----
A.thalianaERV-A2	126	-----TKIEKPLQ-----
O.sativaERV-A1	126	-----MKVEQPLQ-----
Z.maysERV-A1	126	-----MKMEAPLQ-----
A.thalianaERV-A1	126	-----TKIENPLQ-----
P.trichocarpaERV-A1	126	-----PKIEKPLQ-----
P.trichocarpaERV-A2	126	-----PKIEKPLQ-----
C.reinhardtiiERV-B	127	-----PQSQQIMD-----
V.carteriERV-B	125	-----PQSQQIMD-----
C.subellipsoideaERV-B	126	-----PR-----
P.patensERV-B	128	-----
S.moellendorffiiERV-B	124	-----
O.sativaERV-B	127	-----
Z.maysERV-B	127	-----
A.thalianaERV-B	134	-----PH-----
P.trichocarpaERV-B1	126	-----KEHE-----
P.trichocarpaERV-B2	126	-----KEHE-----

O.sativaPDI-C	222	PSIRIFRKG--SDIKENQGHHDHESYYGDRDTESLVAAMETTYVANIPKDAHVLALEDKSN
Z.maysPDI-C	222	PSIRVFRKG--SDIKENQGHHDHESYYGERDTESLVAAMETTYVANIPKEAH--ALEDKSN
A.thalianaPDI13	223	PSIRIFRRG--SGLREDHGNHEHESYYGDRDTESLVKMVEELLKPIKKEDEKHALDGGKSD
A.thalianaPDI12	222	PSIRIFRKG--SDLREDHGHHEHESYYGDRDTESLVKMVEELVAPIHPETHKVALDGGKSD
A.thalianaPDI7	222	PSIRIFRKG--SDLKDDNAHHDHESYYGDRDTESLVKMVSLLVPEIHLPHNLALEDKSD
P.trichocarpaPDI-C1	222	PSIRIFRKG--SNLREDHGRHDHESYYGDRDTESLVKTMEALVAPIAMESQRQALEHKPE
P.trichocarpaPDI-C2	222	PSIRIFRKG--SDLRDDHGHHDHESYYGDRDTESLVKTMEALVAPIAMESQRHALEHKPE
P.patensPDI-C	227	PSIRIFRKG--HDLRDEHGRHDHESYYGERDTESLVAFMVELVPPATVDC--KFQLEDKSS
S.moellendorffiiPDI-C	219	PSIRIFRKG--HDLKDEHGHHEHDSYYGERDTESLVKAMEALVPEKETT----LALEDKT-
C.subellipsoideaPDI-C	220	PSIRVFRSG--HDEVNVHGVKEHESYRGDRTOASLLAFADNAPSAGQPHHYIRGVTRM-
C.reinhardtiiPDI-C	225	PSIRVFRKG--HDDIYIGGMHEHEAYMGDRTKDALVAFADSLVPSAGQPHRKLAGLSAA-
V.carteriPDI-C	225	PSIRVFRKG--HDDIVIGGMHEHESYMGDRTKDALVAFADSLVPSAGQPHRKHAAALSAA-
C.reinhardtiiERV-A	163	AAGG--AGG--GENATALANGCGSCYGAEDKQGDCNCTCEVRAAYRKKWALSNVDHIE
V.carteriERV-A	137	-----VNC--TENSTATPV-CGSCYGAEDRQGDCCNCTCEVRAAYRKKWALANVDHIE
C.subellipsoideaERV-A	135	-----HKA-----NETE-CGSCYGA-APDECCNCTCEVRAAYRKKWGFDPQGIS
O.sativaERV-A3	134	-----KHG--GRLSKGEFY-CGTCYGAESDEQCCNSCEVREAYRKKWALTNPLDID
Z.maysERV-A2	134	-----KHG--GRLDKGEQY-CGTCYGAESDEQCCNSCEVREAYRKKWALTNPLDID
Z.maysERV-A3	134	-----KHG--GRLDKGEQY-CGTCYGAESDEQCCNSCEVREAYRKKWALTNPLDID
S.moellendorffiiERV-A	134	-----KHG--GRLEHNETY-CGSCYGAESDDECCNSCEVREAYRKKWALTNPLDID
P.patensERV-A1	136	-----KHG--GRLEHNETY-CGSCYGAETEDHCCNCTCEVREAYRKKWALNNPLDID
P.patensERV-A4	134	-----KHG--GRLEHNETY-CGSCYGAASSDDECCNSCEVREAYRKKWALINIDIID
P.patensERV-A2	134	-----KHG--GRLEHNETY-CGSCYGAESSDDECCNCTCEVREAYRKKWALTNPLDID
P.patensERV-A3	134	-----KHG--GRLEHNETY-CGSCYGAESSDDCCNSCEVREAYRKKWALTNPLDID
O.sativaERV-A2	133	-----KHG--GRLDHNEVY-CGSCYGSSESDDCCNSCEVREAYRKKWALTNIEEID
P.trichocarpaERV-A3	134	-----KHG--GRLEHNEEY-CGSCYGAEMSDDHCCNSCEVREAYRKKWALTNMLDID
P.trichocarpaERV-A4	134	-----SHG--GRLEHNEEY-CGSCYGGEMSHDDCCNCTCEVREAYRKKWAMTNMLDID
A.thalianaERV-A2	134	-----KHG--GRLEHNETY-CGSCYGAASDDACCNSCEVREAYRKKWALSDESID
O.sativaERV-A1	134	-----RHG--GRLEHNETY-CGSCYGAESDEQCCNSCEVREAYRKKWGVSNPLDID
Z.maysERV-A1	134	-----HHG--GRLEHNETY-CGSCYGAQESDDQCCNCTCEVREAYRKKWGVSNPLLD
A.thalianaERV-A1	134	-----KHG--GRLEHNETY-CGSCYGAEEHDCNSCEVREAYRKKWGVVTPNPLDID
P.trichocarpaERV-A1	134	-----RHG--GRLEHNETY-CGSCYGAASDEDCNSCEVREAYRKKWAVTPNPLMD
P.trichocarpaERV-A2	134	-----RHG--GRLEHNETY-C-----DEDCNSCEVREAYRKKWAVTPNPLMD
C.reinhardtiiERV-B	135	-----TGGEQLVSVNIQEAMQHLVDMEEA-----
V.carteriERV-B	133	-----TGAEQLVSVNIQEAMQHLVDMEEA-----
C.subellipsoideaERV-B	128	-----RWC--FMCKPRQE-----VMEVNOAM-----
P.patensERV-B	128	-----GE--HRKEEPKADKKDEHKDGDHRKKDPQKVINLVKKAII-----
S.moellendorffiiERV-B	124	-----KEH--AHDN-LTGT--HSHEELRSVAVKVVNEINKAL-----
O.sativaERV-B	127	-----EHG--THNHDHDEHEDEQKKQEHFTNEAEKMKVSVKQAM-----
Z.maysERV-B	127	-----GHCAHHDHEDDHDHDEQKKHEQTFNEAEKMIKSVKQAL-----
A.thalianaERV-B	136	-----KHD--GKEEHNKNET-ETEALNILGFDQAAETMIKKVQKQAL-----
P.trichocarpaERV-B1	130	-----AHN--HDHDKDHHEDSHAKQHTHGFDAAETMVKKVQKQAL-----
P.trichocarpaERV-B2	130	-----AHN--HDHDKDHHKDSHEEQHTHGFDAAETMIKKVQKQAL-----

BLOCK#3----->

O.sativaPDI-C 280 KT-VPAKRPA--PLTSGGCRTEGFRVVKVFGSVVISARSGSH-----SFDPSQI  
Z.maysPDI-C 278 KT-VPAKRPA--PMASGGCRTEGFRVVKVFGSVVISARSGSH-----SFDPSQI  
A.thalianaPDI13 281 NA-ASTFKKA---PVSGGCRTEGYVRAKKVFGELVISAHSGAH-----SFDASQM  
A.thalianaPDI12 279 ---NITVKHLKKGPVTGGCRVEGYVRVKKVFGNLVISAHSGAH-----SFDSSQM  
A.thalianaPDI7 280 NSSR----TLKKAPSTGGCRVEGYVRVKKVFGNLMVSARSGSH-----SFDSSQM  
P.trichocarpaPDI-C1 280 NA-TQHVKRPA--PSAGGCRTEGYVRVKKVFGNLMISALSGAH-----SFDKQM  
P.trichocarpaPDI-C2 280 NA-TQHVKRPA--PSAGGCRTEGYVRVKKVFGNLMISAHSGAH-----SFDASQM  
P.patensPDI-C 284 ITVNATIKRPA--PKAGGCRVEGFRVVKVFGELMISAHSGSH-----SFDATSM  
S.moellendorffiiPDI-C 272 ---NGTVKRPA--PRAGGCRTEGFRVRAKKVFGNIIISAHSGSH-----SFDASAM  
C.subellipsoideaPDI-C 277 -----AKTSGCALSGFVLVKKVFGALHFLAKSPGH-----SFDYQAM  
C.reinhardtiiPDI-C 282 -----PKTPGCNLAGFVMVKKVFGTVHFFVARSEGH-----SFDHTWM  
V.carteriPDI-C 282 -----PKTPGCNLAGFVMVKKVFGTLTVVARSEGH-----SFDHTWM  
C.reinhardtiiERV-A 219 QCAHDLYTEAIKEAQEGECRMWGMLEVNKVAGNFHFAPGRSYQQGSMHVHDIAPFGDAVI  
V.carteriERV-A 188 QCAHDLYTESIKEQTGEGCHMWGMLEVNKVAGNFHFAPGRSYQQGSMHVHDIAPFGDAVI  
C.subellipsoideaERV-A 180 QCAHDLGFVEKLRQEGEGCRMWGSLEVNKVAGNFHFAPGKSFQQGPMHVHDIAPFGVTF  
O.sativaERV-A3 185 QCTREDFVERVKTOQEGECNVHGFLLDVSQVAGNFHFAPGKGFYESNIDVPEL-SALEHGF  
Z.maysERV-A2 185 QCARDFVVERVKTOQEGECNVHGFLLDVSQVAGNFHFAPGKGFYESNIDVPEL-SLLEGGF  
Z.maysERV-A3 185 QCARDFVVERVKTOQEGECNVHGFLLDVSQVAGNFHFAPGKGFYESNIDVPEL-SLLEGGF  
S.moellendorffiiERV-A 185 QCKREGWLTKIKEEGEGECNLYGSLLEVNKVAGNFHFAPGKSFQQGPMHVHDIAPFGVTF  
P.patensERV-A1 187 QCKREGFLQIKDEEGEGECNLYGSLLEVNKVAGNFHFAPGKSFQQANMHVHDIAPFGKDSF  
P.patensERV-A4 185 QCHREGFIERVKEEGEGECNLYGSLLEVNKVAGNFHFAPGKSFQQSAMHLLDLGIRSDSF  
P.patensERV-A2 185 QCHREGFIERVKEEGEGECNLYGSLLEVNKVAGNFHFAPGKSFQQSAMHLLDLGIRSDSF  
P.patensERV-A3 185 QCHREGFIERVKEEGEGECNLYGSLLEVNKVAGNFHFAPGKSFQQSAMHLLDLGIRSDSF  
O.sativaERV-A2 184 QCKREGFVQRLKDEEGEGECNLYGSLLEVNKVAGNFHFAPGKSLDQSFNFDLLEQQENY  
P.trichocarpaERV-A3 185 QCIREFGVQMIKDEEGEGECNLYGSLLEVNKVAGNFHFVPGKSFHQSNFQLLDLDMQKESY  
P.trichocarpaERV-A4 185 QCKREGFIQMIKDEEGEGECNLYGSLLEVNKVAGNFHFAPGKSFHLSNFDLQDLQKDSY  
A.thalianaERV-A2 185 QCKREGFVQVKDEEGEGECNLYGSLLEVNKVAGNFHFIPGQSFHQSGFQFHDMLLQOQGNY  
O.sativaERV-A1 185 QCKREGFLQSIKDEEGEGECNLYGSLLEVNKVAGNFHFAPGKSFQKANVHVHDLLEFQKDSF  
Z.maysERV-A1 185 QCKREGFLQSIKDEEGEGECNLYGSLLEVNKVAGNFHFAPGKSFQQSNVHVHDLLEFQKDSF  
A.thalianaERV-A1 185 QCKREGFLQRVKDEEGEGECNLYGSLLEVNKVAGNFHFAPGKSFHQSGVHVHDLLEFQKDSF  
P.trichocarpaERV-A1 185 QCKREGFLQIKDEEGEGECNLYGSLLEVNKVAGNFHFAPGKSFQQSGVHVHDLLEFQKDSF  
P.trichocarpaERV-A2 176 QCKREGFLQIKDEEGEGECNLYGSLLEVNKVAGNFHFAPGKSFQQSGVHVHDLLEFQKDSF  
C.reinhardtiiERV-B 160 -----DHHEGCHVYGTMDVVKRVAGRLHFSVHQNMVFQMLPQLLGTTHHIPKIL  
V.carteriERV-B 158 -----EHHEGCHVYGTMDVVKRVAGRLHFSVHQNMVFQMLPQLLGAHRIPKVA  
C.subellipsoideaERV-B 148 -----DAHEGCHVYGTMDVVKRVAGRLHFSVHQNMVFQMLPQLLGTTHHIPKIL  
P.patensERV-B 165 -----DDGEGCQIFGVLDERVAGNFHIS---MHGLSLYVAEKIFEAGYEV  
S.moellendorffiiERV-B 156 -----QDGECCRVFGVLDVERVAGNFHIS---MHGMSLQVAVQIFHVSVEV  
O.sativaERV-B 166 -----ENGECCRVYGVLDVQVRVAGNFHIS---VHGLNIFVAEKIFDGSSHV  
Z.maysERV-B 167 -----GNGECCRVYGMLDVQVRVAGNFHIS---VHGLNIFVAEKIFEGSNHV  
A.thalianaERV-B 173 -----ADGECCRVYGVLDVQVRVAGNFHIS---VHGLNIFVAQMFIFGGSKNV  
P.trichocarpaERV-B1 168 -----ANGECCRVYGVLDVQVRVAGNFHIS---VHGLNIFVAQMFIFDGAHKV  
P.trichocarpaERV-B2 168 -----ANGECCRVYGVLDVQVRVAGNFHIS---VHGLNIFVAQMFIFDGAHKV

COPII-coated Erv (consensus)-----

BLOCK#4---->

O.sativaPDI-C	327	NVSHYVVTQFSFGKRLSAKMFNELKRLTPYVGGHHD----	RLAQ	---	SYI	VKHGDVNVANV
Z.maysPDI-C	325	NVSHYVVTQFSFGKRLSPRMLHEFIRLTPYLRGYHD----	RLAQ	---	SYI	VKHGEVNVANV
A.thalianaPDI13	327	NMSHIVTHTLTFGTMTVSERLWTDKRLLPYLGQSYD----	RLNGK	---	SF	TNERQLDANV
A.thalianaPDI12	326	NMSHWVSHFSFGRMISPRLLTDMKRLLPYLGLSHD----	RLDGK	---	AF	TNQHEFGANV
A.thalianaPDI7	326	NMSHWVNHLSFGRRIMPQKFSEFKRLSPYLGLSHD----	RLDGR	---	SF	TNQRDLGPNV
P.trichocarpaPDI-C1	327	NLSHWVISHFSFGMKVLPVMSDVKRLLPYIGRSHD----	KLNGR	---	SF	TNHRDVGANV
P.trichocarpaPDI-C2	327	NLSHWVISHFSFGMKVLPVMSDVKRLIPHIGRSHD----	KLNGR	---	SF	TNHRDVGANV
P.patensPDI-C	322	NMTHYVGGFSFGKRKTSWRSVHVVNEMLPALDSNID----	RLTGO	---	VF	PSEYEN---I
S.moellendorffiiPDI-C	317	NMTHYVVSQFTFGRELNFWMRRELYRIYPHLASVYDTVEANLTGR---	IY	---	VSQHEN	---I
C.subellipsoideaPDI-C	314	NMSHWVNYLVFGNKPSPRRQSLAKLHP--AGLSDDWADKLAGQ---	DF	---	FSRAAK	---A
C.reinhardtiiPDI-C	319	NMTHMTHSHFHVGTTRPSPRKYQQLKRLHP--AGLTADWADKLHDQ---	LF	---	VSEHTQ	---S
V.carteriPDI-C	319	NMTHLVHTFHVGTTRPSPRKYQQLKRLHP--AGLTHDWADQLRDQ---	FF	---	USEHPQ	---S
O.sativaERV-A	279	DFRHTVTHKLSFG-----EPVPGMKN----	PLDGAKAGQA	-----	AAAAAA	-ATG
V.carteriERV-A	248	DFRHTVTHKLSFG-----APVPGMKN----	PLDNA	---	K	-AGYKSAAATG
C.subellipsoideaERV-A	240	DLSHRIDKLSFG-----HEVPGMTN----	PLDRVNLPKF	---	NTRNPQGLPG	
O.sativaERV-A3	244	NITSHKINKLSFG-----TEFPGVVN----	PLDGA	---	QW	-TQPASD---G
Z.maysERV-A2	244	NITSHKINKLSFG-----TEFPGVVN----	PLDGA	---	QW	-TQPASD---G
Z.maysERV-A3	244	NITSHKINKLSFG-----TEFPGVVN----	PLDGA	---	QW	-TQPASD---G
S.moellendorffiiERV-A	245	NVSHYINELLSFG-----ARVPGVVN----	PLDKE	---	KR	-TQKFPS---A
P.patensERV-A1	247	NVSHKINELLSFG-----VRVPGAVN----	PLDKL	---	ER	-TQTTH---G
P.patensERV-A4	245	NVSHIVNELLSFG-----AHVPGRVN----	PLDKI	---	TS	-TQKDN---G
P.patensERV-A2	245	NVSHITINELLSFG-----AHVPGAVN----	PLDKV	---	TN	-TQKDLN---G
P.patensERV-A3	245	NVSHITINELLSFG-----AYVPGAVN----	PLDKV	---	TS	-TQKDN---G
O.sativaERV-A2	244	NITSHKINKLSFG-----VEFPGVVN----	PLDGV	---	EW	-TQEHTNGLTG
P.trichocarpaERV-A3	245	NITSHKINRLAFG-----DYVPGVVN----	PLDGI	---	QL	-MHETQN---G
P.trichocarpaERV-A4	245	NITSHKINRLAFG-----DYVPGVVN----	PLAGI	---	QL	-MHDTPN---G
A.thalianaERV-A2	245	NITSHKINRLAFG-----DFVPGVVN----	PLDGV	---	QW	-NOGKQS---G
O.sativaERV-A1	245	NVSHKINKLSFG-----QVFPGVVN----	PLDGA	---	QW	-MQHSSY---G
Z.maysERV-A1	245	NVSHKINRLSFG-----EYVPGVVN----	PLDGA	---	NW	-MQHSSY---G
A.thalianaERV-A1	245	NITSHKINRLTYG-----DYVPGVVN----	PLDKV	---	EW	-SQDTPN---A
P.trichocarpaERV-A1	245	NITSHKINRLTFG-----EYVPGVVN----	PLDGV	---	QW	-TQETPS---G
P.trichocarpaERV-A2	236	NITSHKINRLAFG-----EYVPGVVN----	PLDGV	---	QW	-TQETPS---G
C.reinhardtiiERV-B	207	NMSHWIKHLGFG-----PHVPGQLN----	PLDGY	---	VR	-MVGREP---F
V.carteriERV-B	205	NISHTIKHLGFG-----PHVPGQLN----	PLDGY	---	VR	-MVKGPP---Q
C.subellipsoideaERV-B	191	NSSHIIHRSFG-----PTVPGQVN----	PLDGA	---	ER	-ILDKES---G
P.patensERV-B	208	NVSHVIHDLISFG-----PTVPGHHN----	PLDGS	---	ER	-ILHDTA---G
S.moellendorffiiERV-B	199	NVSHIINDLSFG-----PKVPGIHN----	PLDRT	---	VR	-ILRDTA---G
O.sativaERV-B	209	NVSHIINDLSFG-----PKVPGIHN----	PLDET	---	TR	-ILHDTA---G
Z.maysERV-B	210	NVSHVIHDLISFG-----PKVPGIHN----	PLDET	---	SR	-ILHDTA---G
A.thalianaERV-B	216	NVSHIINDLSFG-----PKVPGIHN----	PLDDT	---	NR	-ILHDTA---G
P.trichocarpaERV-B1	211	NVSHIINDLSFG-----PKVPGIHN----	PLDGT	---	TR	-ILHETS---G
P.trichocarpaERV-B2	211	NVSHIINDLSFG-----PKVPGIHN----	PLDGT	---	AR	-ILRETS---G

## BLOCK#5-----

O.sativaPDI-C 380 TIEHYLQIVKTELVTLRSSKELKLVVEEYETAH----SSLVHSFYVPVVKHFFEFSPMQV  
 Z.maysPDI-C 378 TIEHYLQVVKTELVTRSSKELKLVLEEYETAH----SSLVHSFYVPVVKHFFEFSPMQV  
 A.thalianaPDI13 379 TIEHYLQIKTEVISRRSGQEHSLIEEYETAH----SSVARSYHYPEAKHFFELSPMQV  
 A.thalianaPDI12 378 TIEHYLQIVKTEVITRRSGQEHSLIEEYETAH----SSVAQTYYPVAKHFFELSPMQV  
 A.thalianaPDI7 378 TIEHYLQIVKTEVVKSNQQAIV---EAYETAH----SSVAHSYYPVAKHFFELSPMQV  
 P.trichocarpaPDI-C1 379 TIEHYLQVVKTEVTRRSSSERKLEIEEYETAH----SSLSQTVYMPVAKHFFELSPMQV  
 P.trichocarpaPDI-C2 379 TIEHYLQVVKTEVTRRSSAEHKLIEEYETAH----SSLAQTVYMPVAKHFFELSPMQV  
 P.patensPDI-C 381 THDHYLQVVKTEVITLRRQDLRVLEQYDYETAH----SNMIQSTKVPVVKHFFELSPMQV  
 S.moellendorffiiPDI-C 370 THDHYLQVVKTEVVSRLRKRKESLLEQYDYTSH----SNTIQNTNVPVAKHFFELSPMQV  
 C.subellipsoideaPDI-C 365 TFEHYMQVVLTTIEPSKHRPELSY-DAYEYTVH----SHTYDTADLPAAKFTYDLSPIQI  
 C.reinhardtiiPDI-C 370 THEHYLQVVLTTIEPRHSRHTGNY-DAYEYTAH----SHSYQSDSPSARFTYDLSPIQI  
 V.carteriPDI-C 370 THEHYLQIVLTSIEPRRSRHSNGY-DAYEYTAH----SHTYQSDALPSARFTYDLSPIQI  
 C.reinhardtiiERV-A 318 MFQYFLKVVPTSYYTDLNKTLLST--NQFSVTENFRE-AQQGAGRTLPGVFFFYDLSPIKV  
 V.carteriERV-A 284 MYQYFLKVVPTSYYTGLDNGKTLAT--NQFSVTENFRESSQGGAGKTLPGVFFFYDLSPIKV  
 C.subellipsoideaERV-A 280 AYQYFLKVVPTIYVNSHNHTINS--NQYSVTEHEK--GSQDFQAQLPGVFFFYDLSPIKV  
 O.sativaERV-A3 278 TYQYFLKVVPTIYTDLRGRKTHS--NQFSVTEHER--DGNIRPKPQPGVFFFYDLSPIKV  
 Z.maysERV-A2 278 TYQYFLKVVPTIYTDLRGRKTHS--NQFSVTEHER--DGNVVRPKPQPGVFFFYDLSPIKV  
 Z.maysERV-A3 278 TYQYFLKVVPTIYTDLRGRKTHS--NQFSVTEHER--DGNVVRPKPQPGVFFFYDLSPIKV  
 S.moellendorffiiERV-A 279 MYQYFLKVVPTAYTDMTGKHTVT--NQFSVTDHEKA-VEGLNGRSLPGVFFFYDLSPIKV  
 P.patensERV-A1 281 MYQYFLKVVPTIYTDLRGRKTHS--NQFAVTDHEKGVGPGEDHALPGVFFFYDLSPIKV  
 P.patensERV-A4 279 MYQYFLKVVPTVYTDLRGSEIAT--NQFSVTEHYT--AGDHGPRVLPVGVFFFYDLSPIKV  
 P.patensERV-A2 279 MYQYFLKVVPTVYTDIKGRKTHS--NQFSVTEHYT--AGDHGPRVLPVGVFFFYDLSPIKV  
 P.patensERV-A3 279 MFQYFLKVVPTVYTDIKGRKTHS--NQFSVTEHYT--AGDHGPRVLPVGVFFFYDLSPIKV  
 O.sativaERV-A2 281 MYQYFLKVVPTIYTDLRGRKTHS--NQFSVTEHER--EAIGYPRPBPVGVFFFYDLSPIKV  
 P.trichocarpaERV-A3 279 VQQYFLKVVPTIYTDLRGRTHS--NQYSVTEHEK-SELMRLDSLPGVFFFYDLSPIKV  
 P.trichocarpaERV-A4 279 VQQYFLKVVPTIYTDLRGRTHS--NQYSAVTEHEK-SELTPLDSLPGVFFFYDLSPIKV  
 A.thalianaERV-A2 279 VYQYFLKVVPSIYTDVHQNTIQS--NQFSVTEHEQN-MEAGRMQSPVGVFFFYDLSPIKV  
 O.sativaERV-A1 279 MYQYFLKVVPTIYTDINEHITLLS--NQFSVTEHERS-SESGRIQAVPGVFFFYDLSPIKV  
 Z.maysERV-A1 279 MYQYFLKVVPTVYTDINEHITLLS--NQFSVTEHERS-GESGRMQALPGVFFFYDLSPIKV  
 A.thalianaERV-A1 279 MYQYFLKVVPTVYTDLRGHTIQS--NQFSVTEHVKS-SEAGQLQSLPGVFFFYDLSPIKV  
 P.trichocarpaERV-A1 279 MYQYFLKVVPTVYTDVSGHTIQS--NQFSVTEHERG-TDIGRLQSLPGVFFFYDLSPIKV  
 P.trichocarpaERV-A2 270 MYQYFLKVVPTVYTDVSGHTIQS--NQFSVTEHERG-ADIGRLQSLPGVFFFYDLSPIKV  
 C.reinhardtiiERV-B 241 SYKYFLKVVPTIYVYVNRGLRATET--HOYSVTEY----AQPLQRGYAPAVDVHYDLSPIVM  
 V.carteriERV-B 239 SFKYFLKVVPTIYVYVNRGLRVTET--HOYSVTEY----TQPLEPGYVPTLDVHYDLSPIVM  
 C.subellipsoideaERV-B 225 TFKYFLKVVPTIYVYVNRGLRVTET--NQYSVTEYDT--VVHKGEMQMPVSVVFSYDLSPIV  
 P.patensERV-B 242 TFKYFLKIVPTIYVYVNRGLRVTET--NQFSVTEYVQ--RTKPSDRSYPVAVVYVYDLSPIV  
 S.moellendorffiiERV-B 233 TFKYFKIVPTIYVYVNRGLRVTET--NQFSVGEYVL--AARDDDISWPAVYVYVYDLSPIV  
 O.sativaERV-B 243 TFKYFKIVPTIYVYVNRGLRVTET--NQFSVTEYVQ--KRATDRSAWPAVYVYVYDLSPIV  
 Z.maysERV-B 244 TFKYFKIVPTIYVYVNRGLRVTET--NQFSVTEYVL--PIRPTDRAWPAVYVYVYDLSPIV  
 A.thalianaERV-B 250 TFKYFKIVPTIYVYVNRGLRVTET--NQYSVTEYVQ--PMTDFDRTWPAVYVYVYDLSPIV  
 P.trichocarpaERV-B1 245 TFKYFKIVPTIYVYVNRGLRVTET--NQFSVTEYVQ--PMTDFDRTWPAVYVYVYDLSPIV  
 P.trichocarpaERV-B2 245 IFKYFKIVPTIYVYVNRGLRVTET--NQFSVTEYVQ--PITDFDRTWPAVYVYVYDLSPIV



----->

O.sativaPDI-C	436	LVTELPKSF	SHFITNVCAI	IGGVFTVAGI	LD	SIFHNTLR	LVK-KVEL	GKNI-			
Z.maysPDI-C	434	LVTEVPKSF	SHFITNVCAI	IGGVFTVAGI	LD	SIFHNTLR	MVK-KIEL	GKNI-			
A.thalianaPDI13	435	LISENPKSF	SHFITNVCAI	IGGVFTVAGI	LD	SIFQNTVR	MVK-KIEL	GKNI-			
A.thalianaPDI12	434	LITENPKSF	SHFITNVCAI	IGGVFTVAGI	LD	SIFHNTVRL	LVK-KVEL	GKNI-			
A.thalianaPDI7	431	LITENSKSF	SHFITNVCAI	IGGVFTVAGI	LD	SILHHSMTL	MK-KIEL	GKNF-			
P.trichocarpaPDI-C1	435	LITENSKSF	SHFITNVCAI	IGGVFTVAGI	LD	SILHHTVRR	MMK-KVEL	GKNF-			
P.trichocarpaPDI-C2	435	LITENPKSF	SHFITNVCAI	IGGVFTVAGI	LD	SILHNTFR	MMK-KVEL	GKNF-			
P.patensPDI-C	437	LVKENPKSF	SHFLTNLCAI	IGGVFTVAGI	LD	SMLHNAMH	IMK-KVEL	GKQY-			
S.moellendorffiiPDI-C	426	LVKENPKSF	SHFITNVCAI	IGGVFTVAGI	VD	SMLHGAMR	MVK-KIEL	GKQF-			
C.subellipsoideaPDI-C	420	LVSEKRRAMY	HVTTTCAI	IGGVFTVAGI	VD	GLMHTGAR	FAK-KVEL	GKHT-			
C.reinhardtiiPDI-C	425	LVHEITSKP	FYQFLTTS	CAI	IGGVFTVAGI	LD	DALLYQSFK	VVK-KLNL	GKQG-		
V.carteriPDI-C	425	LVQETAR	FYQFLTTS	CAI	IGGVFTVAGI	LD	DALLYQSFK	VVK-KLNL	GKQG-		
C.reinhardtiiERV-A	375	KIVTEHGSS	FLSFLTNSV	CAI	IGGVFTVSGI	VD	AFVYTGTR	MVK-KKMMEL	GKFS-		
V.carteriERV-A	342	RIVTEHSSS	FLSFLTNSV	CAI	IGGVFTVSGI	VD	AFVYTGTR	MVK-KKMMEL	GKFS-		
C.subellipsoideaERV-A	336	KYHEITRMS	FLHFLTNSV	CAI	IGGVFTVSGI	VD	AFVYTGTR	MVK-KKMMEL	GKFS-		
O.sativaERV-A3	334	IFTEENSS	LHLYLTNL	CAI	IGGVFTVSGI	LD	SFIYHGQRA	TKKKMEL	GKYR-		
Z.maysERV-A2	334	IFTEENRS	LHLYLTNL	CAI	IGGVFTVSGI	LD	SFIYHGQRA	TKKKMEL	GKYR-		
Z.maysERV-A3	334	IFTEENRS	LHLYLTNL	CAI	IGGVFTVSGI	LD	SFIYHGQRA	TKKKMEL	GKYR-		
S.moellendorffiiERV-A	336	LFTEERKTS	FLHFLTNSV	CAI	IGGVFTVSGI	LD	SFIYHGHR	A	TKKKMEL	GKFI-	
P.patensERV-A1	338	KFTEERKMS	FHFLTNVCAI	IGGVFTVSGI	LD	DAFVYHGQ	QTKKR--	LGKDT-			
P.patensERV-A4	335	KFTEERKPS	FLHFLTNSV	CAI	IGGVFTVSGI	LD	SFIYHGHR	A	TKKKMEL	GKFS-	
P.patensERV-A2	335	KFTEERPS	FLHFLTNSV	CAI	IGGVFTVSGI	LD	SFIYHGHR	A	TKKKMEL	GKLS-	
P.patensERV-A3	335	KFTEERPS	FLHFLTNSV	CAI	IGGVFTVSGI	LD	SFIYHGHR	A	TKKKMEL	GKLS-	
O.sativaERV-A2	337	DFTEENTS	LHFLTNLCAI	IGGVFTVAGI	LD	SFVYHGHR	A	TKKKMEL	GKLG-		
P.trichocarpaERV-A3	336	TFKEEHTS	FLHFLMTS	ICAI	IGGVFTVAGI	LD	SFIYHGHR	A	TKKKMEL	GKFS-	
P.trichocarpaERV-A4	336	IFKEEHS	FLHFLMTS	ICAI	IGGVFTVAGI	LD	SFIYHGHR	A	TKKKMEL	GKFG-	
A.thalianaERV-A2	336	IFTEOHVE	FLHFLTNSV	CAI	IGGVFTVSGI	LD	SFIYHGQRA	TKKKMEL	GKFN-		
O.sativaERV-A1	336	TFTEOHV	SFLHFLTNSV	CAI	IGGVFTVSGI	LD	SFVYHGQRA	TKKKMEL	GKFN-		
Z.maysERV-A1	336	TFTEOHV	SFLHFLTNSV	CAI	IGGVFTVSGI	LD	SFVYHSQRA	TKKKMEL	GKFN-		
A.thalianaERV-A1	336	TFTEEHHS	FLHFLTNSV	CAI	IGGVFTVSGI	LD	DAFVYHGQ	RA	TKKKMEL	GKFS-	
P.trichocarpaERV-A1	336	TFTEEHVS	FLHFLTNSV	CAI	IGGVFTVSGI	LD	DAFVYHGQ	RA	TKKKMEL	GKFS-	
P.trichocarpaERV-A2	327	TFTEEHVS	FLHFLTNSV	CAI	IGGVFTVSGI	LD	DAFVYHGQ	RA	TKKKMEL	GKFS-	
C.reinhardtiiERV-B	295	TINERPPS	LHFVVR	LCAVVG	GF	ATRLTDR	WV	DWLVRLV	NKAA	ARCP---	
V.carteriERV-B	293	TINERPPS	LHFVVR	LCAVVG	GF	ATRLTDR	WV	DWLVRLV	NK	-----	
C.subellipsoideaERV-B	281	TISEIRKSF	AHLLVRF	CAVVG	GF	AVTGM	DR	WMSFI	IDFV	MSTSKQGF	---
P.patensERV-B	298	TIREHRRNF	GHFITRL	CAVVG	GF	AVTGM	DR	WMSFI	IDFV	MSTSKQGF	---
S.moellendorffiiERV-B	289	LIKEERRS	FCHLLTR	CAVVG	GF	AVTGM	DR	WMSFI	IDFV	MSTSKQGF	---
O.sativaERV-B	300	TIKEERRNF	LHFLTR	CAVVG	GF	AVTGM	DR	WMSFI	IDFV	MSTSKQGF	---
Z.maysERV-B	300	TIKEERRNF	LHFLTR	CAVVG	GF	AVTGM	DR	WMSFI	IDFV	MSTSKQGF	---
A.thalianaERV-B	306	TIKEERRS	FLHLITRL	CAVVG	GF	AVTGM	DR	WMSFI	IDFV	MSTSKQGF	---
P.trichocarpaERV-B1	301	TIKEERRS	FLHFITRL	CAVVG	GF	AVTGM	DR	WMSFI	IDFV	MSTSKQGF	---
P.trichocarpaERV-B2	301	TIKEERRS	FLHFITRL	CAVVG	GF	AVTGM	DR	WMSFI	IDFV	MSTSKQGF	---

----->

Multiple sequence alignment for NJ and ML trees in Fig. 3

**BLOCK#1**-----

```

B.distachyonPDI-C      1  MISS-SKIKSVDFYRKIPRDLTEASLSGAGLSIVAALAMVFLFGMELSSYLAVNNTTTSVI
O.sativaPDI-C         1  MISS-SKIKSVDFYRKIPRDLTEASLSGAGLSIVAALAMVFLFGMELSSYLAVNNTTTSVI
E.salsugineumPDI-C1  1  MVSS-TKIKSVDFYRKIPRDLTEASLSGAGLSIVAALVMMFLFGMELSSYLEVSTTAVV
A.thalianaPDI12       1  MVSS-TKIKSVDFYRKIPRDLTEASLSGAGLSIVAALFMVFLFGMELSSYLEVNTTAVI
C.rubellaPDI-C1       1  MVSS-TKIKSVDFYRKIPRDLTEASLSGAGLSIVAALFMVFLFGMELSSYLEVNTTTSVI
E.salsugineumPDI-C3  1  MVST-TKIKSVDFYRKIPRDLTEASLSGAGLSIVAALAMVFLFGMELSSYLAVSTTTSVI
A.thalianaPDI13       1  MVST-SKIKSVDFYRKIPRDLTEASLSGAGLSIVAALAMVFLFGMELSSYLAVNTTTSVI
C.rubellaPDI-C3       1  MVST-TKIKSVDFYRKIPRDLTEASLSGAGLSIVAALAMVFLFGMELSSYLAVNNTTTSVI
E.salsugineumPDI-C2  1  MVST-SKIKSVDFYRKIPRDLTEASLSGAGLSIVAALSMLFLFGMELNNYLAVSTTTSII
A.thalianaPDI7        1  MVST-SKIKSVDFYRKIPRDLTEASLSGAGLSIVAALSMLFLFGMELNNYLAVSTTTSVI
C.rubellaPDI-C2       1  MVST-SKIKSVDFYRKIPRDLTEASLSGAGLSIVAALSMLFLFGMELNNYLAVSTTTSVI
S.lycopersicumPDI-C  1  MVST-SKIKSVDFYRKIPRDLTEASLSGAGLSIVAALCMVFLFGMELNNYLAVSTTTSVI
S.tuberosumPDI-C      1  MVST-SKIKSVDFYRKIPRDLTEASLSGAGLSIVAALSMMFLFGMELNNYLAVSTTTSVI
M.truncatulaPDI-C1    1  MTTA-SKIKSVDFYRKIPRDLTEASLSGAGLSIVAALAMVFLFGMELNNYLAVSTTTSVI
P.vulgarisPDI-C1      1  MISS-SKIKSVDFYRKIPRDLTEASLSGAGLSIVAALCMVFLFGMELNNYLSVSTTTSVI
G.maxPDI-C1           1  MISS-SKIKSVDFYRKIPRDLTEASLSGAGLSIVAALAMVFLFGMELNNYLSVSTTTSVI
G.maxPDI-C2           1  MISS-SKIKSVDFYRKIPRDLTEASLSGAGLSIVAALAMVFLFGMELNNYLSVSTTTSVI
M.truncatulaPDI-C2    1  MISA-SKIKSVDFYRKIPRDLTEASLSGAGLSIVAALAMVFLFGMELNNYLSVSTTTSVI
P.vulgarisPDI-C2      1  MISA-TKIKSVDFYRKIPRDLTEASLSGAGLSIVAALSMMFLFGMELNNYLSVSTTTSVI
G.maxPDI-C3           1  MISA-TKIKSVDFYRKIPRDLTEASLSGAGLSIVAALVMMFLFGMELNNYLSVSTTTSVI
G.maxPDI-C4           1  MISA-TKIKSVDFYRKIPRDLTEASLSGAGLSIVAALAMVFLFGMELSSYLSVSTTTSVI
V.viniferaPDI-C       1  MVST-SKIKSVDFYRKIPRDLTEASLSGAGLSIVAALSMMFLFGMELNNYLSVSTTTSVI
P.trichocarpaPDI-C1  1  MVST-NKIKSVDFYRKIPRDLTEASLSGAGLSIVAALAMVFLFGMELNNYLVNTTTSVI
P.trichocarpaPDI-C2  1  MVST-NKIKSVDFYRKIPRDLTEASLSGAGLSIVAALAMVFLFGMELNNYLVNTTTSVI
P.patensPDI-C         1  MVST-SKIKSVDFYRKIPRDLTEASLSGAGLSIVAALTMVFLFGMELNNYLVNTTTSVI
S.moellendorffiiPDI-C 1  MTTA-SKIKSVDFYRKIPRDLTEASLSGAGLSIVAALFAMVFLFGMELNNYLVNTTTSVI
C.subellipsoideaPDI-C 1  MARVLQKLSVDFYRKIPRDLTEASLSGAGLSIVAALFAMVFLFGMELNNYLVNTTTSVI
C.reinhardtiiPDI-C   1  MVRLFSRLKALDFYRKIPRDLTEASLSGAGLSIVAALVMMFLFGMELSSYLSVSTTTSVI
V.carteriPDI-C        1  MARLFSKIKALDFYRKIPRDLTEASLSGAGLSIVAALVMMFLFGMELSSYLSVSTTTSVI
    
```

```

B.distachyonPDI-C      60  VDRSSDGEFLRIDFNMSFPALSCEFASVDVSDVLGTNRLNITKTVRKFSIDRNLYPTGSE
O.sativaPDI-C         60  VDRSSDGEFLRIDFNISFPALSCEFASVDVSDVLGTNRLNITKTVRKFSIDRNLYPTGSE
E.salsugineumPDI-C1  60  VDNSSDGDGDFLRIDFNISFPALSCEFASVDVSDVLGTNRLNITKTVRKFPIDPHLRPTGAE
A.thalianaPDI12       60  VDKSSDGDGDFLRIDFNISFPALSCEFASVDVSDVLGTNRLNITKTVRKFPIDPHLRPTGAE
C.rubellaPDI-C1       60  VDKSSDGDGDFLRIDFNISFPALSCEFASVDVSDVLGTNRLNITKTVRKFPIDPHLRPTGAE
E.salsugineumPDI-C3  60  VDKSSDGDGDFLRIDFNISFPALSCEFASVDVSDVLGTNRLNITKTVRKFPIDPHLRPTGAE
A.thalianaPDI13       60  VDKSSDGDGDFLRIDFNISFPALSCEFASVDVSDVGHRLNISKTRKVPIDPHLRPTGAE
C.rubellaPDI-C3       60  VDKSSDGDGDFLRIDFNISFPALSCEFASVDVSDVLGTNRLNITKTVRKFPIDPHLRPTGAE
E.salsugineumPDI-C2  60  VDRSSDGDGDFLRIDFNISFPALSCEFASVDVSDVLGTNRLNITKTVRKFSIDSNLRPTGTE
A.thalianaPDI7        60  VDRSSDGDGDFLRIDFNISFPALSCEFASVDVSDVLGTNRLNITKTVRKFSIDSNLRPTGSE
C.rubellaPDI-C2       60  VDRSSDGDGDFLRIDFNISFPALSCEFASVDVSDVLGTNRLNITKTVRKFSIDSNLRPTGAE
S.lycopersicumPDI-C  60  VDKSSDAEFLRIDFNMSFPALSCEFASVDVSDVLGTNRLNITKTVRKHSIDKNLRPTGSE
S.tuberosumPDI-C      60  VDKSSDAEFLRIDFNMSFPALSCEFASVDVSDVLGTNRLNITKTVRKHSIDKNLRPTGSE
M.truncatulaPDI-C1    60  IDKSSDGEFLRIDFNISFPALSCEFASVDVSDVLGTNRLNITKTVRKFSIDSNLRPTGSE
P.vulgarisPDI-C1      60  VDKSSDGDYLRIDFNISFPALSCEFAAVDSDVLGTNRLNITKTVRKFSIDSNLRPTGNE
G.maxPDI-C1           60  VDKSSDGDYLRIDFNISFPALSCEFAAVDSDVLGTNRLNITKTVRKFSIDSNLRPTGAE
G.maxPDI-C2           60  VDKSSDGDYLRIDFNISFPALSCEFAAVDSDVLGTNRLNITKTVRKFSIDSNLRPTGAE
M.truncatulaPDI-C2    60  VDKSSDGDYLRIDFNISFPALSCEFAAVDSDVLGTNRLNITKTVRKFSIDSKLRPTGSE
P.vulgarisPDI-C2      60  VDKSSDHDYLRIDFNISFPALSCEFASVDVSDVLGTNRLNITKTVRKFSIDSHLRPTGAE
G.maxPDI-C3           60  VDKSSDGDYLRIDFNISFPALSCEFASVDVSDVLGTNRLNITKTVRKFSIDSNLRPTGAE
G.maxPDI-C4           60  VDKSSDGDYLRIDFNISFPALSCEFASVDVSDVLGTNRLNITKTVRKFSIDSNLRPTGAE
V.viniferaPDI-C       60  VDKSSDGDGDFLRIDFNISFPALSCEFASVDVSDVLGTNRLNITKTVRKFSIDPDLRPTGAE
P.trichocarpaPDI-C1  60  VDNSSDGEFLRIDFNISFPALSCEFASVDVSDVLGTNRLNITKTVRKFSIDHDLRPTGSE
P.trichocarpaPDI-C2  60  VDNSSDGEFLRIDFNISFPALSCEFASVDVSDVLGTNRLNITKTVRKFSIDHDLRPTGSE
P.patensPDI-C         60  VDRSSDGEFLRIDFNISFPALSCEFASVDVSDVLGTNRLNITKTVRKFPIDPDLRPTGQE
S.moellendorffiiPDI-C 60  VDRSSDGEFLRIDFNISFPALSCEFASVDVSDALGTNRYNITKTVRKFPIDPDLRPTGQE
C.subellipsoideaPDI-C 61  VDRSAHGDFLRIDFNISFPALSCEFATLDVSDALGTNRYNITKTVRKFPIDPDLRPTGQE
C.reinhardtiiPDI-C   61  VDRSPQNEFLKLNFNISFPALSCEFATLDVSDSLGTNRYNITKTVRKFPIDPDLRPTGQE
V.carteriPDI-C        61  VDRSPQNEFLKLNFNISFPALSCEFATLDVSDSLGTNRYNITKTVRKFPIDPDLRPTGQE
    
```

-----> **BLOCK#2** -----

B.distachyonPDI-C 120 FHS**G**PIPTV**N**KHG**D**V--**E**E--YH-ADGS**V**ALSS**R**N**F**D**S**Y**S**H**O**Y**P**ILVV**N**F**Y**AP**W**C**Y**W**S**N

O.sativaPDI-C 120 F**H**P**G**PIPTV**S**KHG**D**V--**E**E--NH-DDGS**V**PLSS**R**N**F**D**S**Y**S**H**O**Y**P**ILVV**N**F**Y**AP**W**C**Y**W**S**N

E.salsugineumPDI-C1 120 FHS**C**LALH**D**I**N**HG**E**S--**K**E--EF-PDGA**I**PLT**S**G**S**F**E**S**S**H**H**F**P**IL**V**V**N**F**Y**AP**W**C**Y**W**S**N

A.thalianaPDI12 120 FHS**C**LALH**N**I**N**HG**E**T--**K**E--EF-PDGA**I**PLT**S**A**S**E**A**L**S**H**H**F**P**IL**V**V**N**F**Y**AP**W**C**Y**W**S**N

C.rubellaPDI-C1 120 FHS**C**HTL**H**I**N**HG**E**T--**K**E--EF-PDGA**I**PLT**S**G**S**F**E**S**S**H**H**F**P**IL**V**V**N**F**Y**AP**W**C**Y**W**S**N

E.salsugineumPDI-C3 120 FHS**T**TGL**D**L**I**NHG**D**E**D**--**H**H--E**N**S**Y**A**A**I**P**L**T**G**A**T**F**D**K**I**S**H**H**F**P**IL**V**V**N**F**Y**AP**W**C**Y**W**S**N

A.thalianaPDI13 120 FHS**T**SDL**H**L**I**NHG**D**E**D**--**H**G--D**N**S**T**Y**A**D**I**PL**T**G**A**F**E**K**I**T**H**H**F**PIL**V**V**N**F**Y**AP**W**C**Y**W**S**N

C.rubellaPDI-C3 120 FHS**T**SGL**H**L**I**NHG**D**E**D**--**H**E--E**N**-T**Y**I**D**I**P**L**T**G**A**T**F**E**K**Y**K**H**H**F**P**IL**V**V**N**F**Y**AP**W**C**Y**W**S**N

E.salsugineumPDI-C2 120 FHS**C**EVLS**L**I**N**HG**D**E**A**--**G**E--E**L**-V**E**D**S**V**L**T**G**R**N**F**D**T**L**L**H**O**F**P**I**S**V**V**N**F**Y**AP**W**C**Y**W**C**N

A.thalianaPDI7 120 F**H**A**C**EVLS**L**I**N**HG**D**E**T**--**G**E--E**I**-V**E**D**S**V**L**T**G**R**N**F**D**T**L**T**H**O**F**P**I**L**V**V**N**F**Y**AP**W**C**Y**W**C**N

C.rubellaPDI-C2 120 F**H**A**C**EVLS**L**I**N**HG**D**E**T**--**G**E--E**V**-A**E**D**S**V**L**T**G**R**N**F**E**T**L**T**H**O**F**P**I**L**V**V**N**F**Y**AP**W**C**Y**W**C**N

S.lycopersicumPDI-C 120 F**H**S**C**STATE**I**K**H**D**A**E**D**--**D**E--E**Y**-G**E**G**S**V**S**L**N**G**H**S**F**D**R**V**T**H**H**F**P**IL**V**V**N**F**Y**AP**W**C**Y**W**S**N

S.tuberosumPDI-C 120 F**H**S**C**STATE**I**K**H**D**A**E**D**--**D**E--E**Y**-G**E**G**S**V**S**L**N**G**H**S**F**D**R**V**T**H**H**F**P**IL**V**V**N**F**Y**AP**W**C**Y**W**S**T

M.truncatulaPDI-C1 120 F**Y**L**R**P**S**T**N**V**I**K**H**D**K**V--**D**D--E**S**-L**E**G**A**F**V**F**T**S**N**F**D**K**Y**S**H**O**F**P**I**T**A**V**N**F**Y**AP**W**C**Y**W**S**Q

P.vulgarisPDI-C1 120 F**H**S**E**P**T**T**T**N**I**K**H**D**N**E**Q**--**H**E--E**S**-I**G**G**A**T**E**L**T**T**D**N**F**D**K**Y**A**H**O**F**P**I**T**V**I**N**F**Y**AP**W**C**Y**S**Q

G.maxPDI-C1 120 F**H**S**E**PA**A**N**S**I**K**H**D**N**E**V--**N**E--E**S**-V**E**G**S**V**V**L**K**T**O**N**F**D**K**Y**A**H**O**F**P**I**T**V**V**N**F**Y**AP**W**C**Y**S**Q

G.maxPDI-C2 120 F**H**S**E**PA**A**N**S**I**K**H**D**N**E**V--**N**E--E**S**-V**E**G**S**V**V**L**T**T**O**N**F**D**K**Y**A**H**O**F**P**I**T**V**V**N**F**Y**AP**W**C**Y**S**Q

M.truncatulaPDI-C2 120 F**H**S**C**T**I**A**N**A**V**K**H**D**D**E**V**--**D**T--D**F**-V**E**G**S**L**P**L**T**S**O**H**F**D**K**Y**V**O**L**F**P**I**T**V**V**N**F**Y**AP**W**C**W**C**Q

P.vulgarisPDI-C2 120 F**H**S**C**A**V**S**N**A**V**K**H**D**D**E**V**--**D**G--E**S**-V**E**G**S**F**S**F**T**T**H**N**F**D**K**Y**A**H**O**F**P**I**T**V**V**N**F**Y**AP**W**C**W**C**Q

G.maxPDI-C3 120 F**H**S**C**T**V**A**N**A**V**K**H**D**D**E**V**--**D**E--E**S**-V**E**G**S**F**S**L**T**T**H**N**F**D**K**Y**V**H**O**F**P**I**T**V**V**N**F**Y**AP**W**C**W**C**Q

G.maxPDI-C4 120 F**H**S**C**T**V**A**N**A**V**K**H**D**D**E**V**--**D**E--E**S**-V**E**G**S**F**S**L**T**T**H**N**F**D**K**Y**V**H**O**F**P**I**T**V**V**N**F**Y**AP**W**C**W**C**Q

V.viniferaPDI-C 120 F**H**S**G**P**V**G**K**V**I**K**H**G**D**E**T**--**D**E--E**Y**-S**E**G**S**A**S**L**T**A**O**N**F**Y**K**Y**S**H**O**H**A**IL**V**V**N**F**Y**AP**W**C**Y**W**S**T

P.trichocarpaPDI-C1 120 F**H**S**G**P**V**L**H**O**I**K**H**G**D**E**V**--**D**E--E**G**-G**E**G**S**V**S**L**K**A**H**N**F**D**O**Y**S**H**O**Y**P**IL**V**V**N**F**Y**AP**W**C**Y**W**S**N

P.trichocarpaPDI-C2 120 F**H**S**G**P**V**L**H**I**N**HG**D**E**V**--**H**E--E**G**-S**E**G**S**V**S**L**K**A**H**N**F**D**O**Y**T**H**O**Y**P**IL**V**V**N**F**Y**AP**W**C**Y**W**S**N

P.patensPDI-C 120 F**H**A**C**S**V**P**N**I**K**S**H**G**D**E**D**V**G**E**M**F**E**H**L**G**E**G**A**V**E**L**N**K**N**T**F**D**V**A**Q**O**F**S**I**L**V**V**N**F**Y**AP**W**C**Y**W**S**N

S.moellendorffiiPDI-C 120 F**H**P**C**P**I**P**N**P**T**S**H**G**D**E**D**--**H**E-----G**E**G**A**H**V**L**T**S**S**T**F**D**E**Y**A**R**R**Y**S**V**L**V**V**N**F**Y**AP**W**C**I**W**S**A**

C.subellipsoideaPDI-C 121 V**H**D**D**L**S**N**V**I**K**Y**D**E**P**S-----V**S**O**D**F**A**I**P**L**S**K**D**S**F**K**A**T**L**E**A**Y**S**I**L**V**V**V**N**F**Y**AP**W**C**Y**W**C**Q

C.reinhardtiiPDI-C 121 V**E**D**T**A**H**K**V**G**P**K**Y**D**A**E**G**H**F**D**E**--E**P**D**I**D**I**T**V**P**L**S**H**E**N**F**E**A**T**L**A**R**Y**P**I**A**V**I**N**F**Y**AP**W**C**H**W**C**Q

V.carteriPDI-C 121 V**E**D**S**S**H**K**P**G**K**Y**D**E**G**R**F**D**E**--E**P**D**I**D**I**T**V**P**L**S**H**V**N**F**E**A**T**L**A**R**Y**P**I**V**V**V**N**F**Y**AP**W**C**H**W**C**Q

-----> **BLOCK#3** -----

B.distachyonPDI-C 175 R**L**K**P**S**W**E**K**T**A**K**I**I**K**E**R**Y**D**P**E**M**D**G**R**I**L**L**A**K**V**D**C**T**E**E**G**E**L**C**R**R**H**H**I**Q**G**Y**P**S**I**R**I**F**R**K**G**S**D**M**K**

O.sativaPDI-C 175 R**L**K**P**S**W**E**K**T**A**K**I**M**R**E**R**Y**D**P**E**M**D**G**R**I**L**L**A**K**V**D**C**T**E**E**T**D**L**C**R**R**H**H**I**Q**G**Y**P**S**I**R**I**F**R**K**G**S**D**L**K**

E.salsugineumPDI-C1 175 R**L**K**P**S**W**E**K**A**A**N**I**I**K**O**R**Y**D**P**E**T**D**G**R**V**L**L**G**N**V**D**C**T**E**E**A**A**L**C**R**R**N**H**I**Q**G**Y**P**S**I**R**I**F**R**K**G**S**D**L**R**

A.thalianaPDI12 175 R**L**K**P**S**W**E**K**A**A**N**I**I**K**O**R**Y**D**P**E**A**D**G**R**V**L**L**G**N**V**D**C**T**E**E**P**A**L**C**R**R**N**H**I**Q**G**Y**P**S**I**R**I**F**R**K**G**S**D**L**R**

C.rubellaPDI-C1 175 R**L**K**P**S**W**E**K**A**A**N**I**I**K**O**R**Y**D**P**E**T**D**G**R**V**L**L**G**N**V**D**C**T**E**E**P**A**L**C**R**R**N**H**I**Q**G**Y**P**S**I**R**I**F**R**K**G**S**D**L**R**

E.salsugineumPDI-C3 176 R**L**K**P**S**W**E**K**A**A**E**I**T**I**K**O**Y**D**P**E**D**D**G**R**V**L**L**G**S**V**D**C**T**E**E**P**T**L**C**R**R**N**H**I**Q**G**Y**P**S**I**R**I**F**R**K**G**S**D**L**R**

A.thalianaPDI13 176 R**L**K**P**S**W**V**K**A**S**O**I**T**R**E**R**Y**D**P**E**T**D**D**R**V**L**L**G**S**V**D**C**T**E**E**P**T**L**C**R**S**N**H**I**Q**G**Y**P**S**I**R**I**F**R**K**G**S**D**L**R**

C.rubellaPDI-C3 175 R**L**K**P**S**W**E**K**A**S**O**I**T**R**E**R**Y**D**P**E**T**D**D**R**V**L**L**G**S**V**D**C**T**E**E**S**T**L**C**R**S**N**H**I**Q**G**Y**P**S**I**R**I**F**R**K**G**S**D**L**R**

E.salsugineumPDI-C2 175 L**L**K**P**S**W**E**K**A**A**K**O**I**K**E**R**Y**D**P**E**M**D**G**R**V**I**L**A**K**V**D**C**T**O**E**S**D**L**C**R**R**N**H**I**Q**G**Y**P**S**I**R**I**F**R**K**G**S**D**L**R**

A.thalianaPDI7 175 L**L**K**P**S**W**E**K**A**A**K**O**I**K**E**R**Y**D**P**E**M**D**G**R**V**I**L**A**K**V**D**C**T**O**E**G**D**L**C**R**R**N**H**I**Q**G**Y**P**S**I**R**I**F**R**K**G**S**D**L**K**

C.rubellaPDI-C2 175 L**L**K**P**S**W**E**K**A**A**K**O**I**K**E**R**Y**D**P**E**M**D**G**R**V**I**V**A**K**V**D**C**T**O**E**G**D**L**C**R**R**N**H**I**Q**G**Y**P**S**I**R**I**F**R**K**G**S**D**L**K**

S.lycopersicumPDI-C 175 R**L**K**P**S**W**E**K**A**A**N**I**I**R**E**R**Y**D**R**E**S**D**G**R**I**L**V**A**K**V**D**C**T**E**E**V**D**L**C**R**R**N**H**I**Q**G**Y**P**S**I**R**I**F**R**K**G**T**D**V**R**

S.tuberosumPDI-C 175 R**L**K**P**S**W**E**K**A**A**N**I**I**R**E**R**Y**D**R**E**S**D**G**R**I**L**V**A**K**V**D**C**T**E**E**V**D**L**C**R**R**N**H**I**Q**G**Y**P**S**I**R**I**F**R**K**G**S**D**V**R**

M.truncatulaPDI-C1 175 R**L**K**P**S**W**E**K**T**A**K**I**I**R**E**R**Y**D**P**E**M**D**G**R**I**L**L**G**K**V**D**C**T**K**E**A**D**L**C**R**R**H**H**I**Q**G**Y**P**S**I**R**I**F**R**K**G**S**D**V**R**

P.vulgarisPDI-C1 175 R**L**K**P**S**W**E**K**A**S**K**I**I**K**E**R**Y**D**P**E**T**D**G**R**I**V**M**G**R**V**D**C**T**O**N**G**E**L**C**R**S**H**H**V**Q**G**Y**P**S**I**R**I**F**R**K**G**S**D**V**R**

G.maxPDI-C1 175 R**L**K**P**S**W**E**K**A**A**K**I**I**K**E**R**Y**D**P**E**M**D**G**R**I**L**L**G**R**V**D**C**T**E**E**G**D**L**C**R**S**H**H**I**Q**G**Y**P**S**I**R**I**F**R**K**G**S**D**V**R**

G.maxPDI-C2 175 R**L**K**P**S**W**E**K**T**A**K**I**I**K**E**R**Y**D**P**E**M**D**G**R**I**L**L**G**R**V**D**C**T**E**E**G**D**L**C**R**S**H**H**I**Q**G**Y**P**S**I**R**I**F**R**K**G**S**D**V**R**

M.truncatulaPDI-C2 175 R**L**K**P**S**W**E**K**A**A**K**I**M**R**E**R**Y**D**P**E**M**D**G**R**I**L**L**A**K**V**D**C**T**O**E**G**D**L**C**R**R**H**H**I**Q**G**Y**P**S**I**R**I**F**R**K**G**S**D**V**R**

P.vulgarisPDI-C2 175 R**L**K**P**S**W**E**K**T**A**K**I**M**K**E**R**Y**D**P**E**M**D**G**R**I**I**M**G**K**V**D**C**T**E**E**G**D**L**C**R**R**N**H**I**Q**G**Y**P**S**I**R**I**F**R**K**G**S**D**L**R**

G.maxPDI-C3 175 R**L**K**P**S**W**E**K**T**A**K**I**M**K**E**R**Y**D**P**E**M**D**G**R**I**L**L**A**K**V**D**C**T**O**E**G**D**L**C**R**R**N**H**I**Q**G**Y**P**S**I**R**I**F**R**K**G**S**D**L**R**

G.maxPDI-C4 175 R**L**K**P**S**W**E**K**T**A**K**I**M**K**E**R**Y**D**P**E**M**D**G**R**I**L**L**A**K**V**D**C**T**O**E**G**D**L**C**R**R**N**H**I**Q**G**Y**P**S**I**R**I**F**R**K**G**T**D**L**R**

V.viniferaPDI-C 175 R**L**K**P**S**W**E**K**A**A**K**I**I**R**E**R**Y**D**P**E**L**D**G**R**I**V**M**A**K**V**D**C**T**E**E**G**E**L**C**R**R**H**H**I**Q**G**Y**P**S**I**R**I**F**R**K**G**S**D**V**R**

P.trichocarpaPDI-C1 175 R**L**K**P**S**W**E**K**A**A**K**I**I**R**E**R**Y**D**P**E**M**D**G**R**I**L**L**A**K**V**D**C**T**E**E**G**D**L**C**R**R**N**H**I**Q**G**Y**P**S**I**R**I**F**R**K**G**S**N**L**R**

P.trichocarpaPDI-C2 175 R**L**K**P**S**W**E**K**A**A**K**I**I**R**E**R**Y**D**P**E**L**D**G**R**I**L**L**A**K**V**D**C**T**E**E**G**D**L**C**R**R**N**H**I**Q**G**Y**P**S**I**R**I**F**R**K**G**S**D**L**R**

P.patensPDI-C 180 R**L**K**P**S**W**E**K**A**A**K**I**I**A**D**K**Y**N**P**E**M**D**G**R**I**L**L**A**K**V**D**C**T**V**N**V**E**L**C**R**S**H**H**I**Q**G**Y**P**S**I**R**I**F**R**K**G**H**D**V**R**

S.moellendorffiiPDI-C 173 R**L**K**P**S**W**D**K**A**A**G**I**I**A**E**K**Y**H**P**E**T**-**G**R**I**L**L**G**K**V**D**C**T**D**N**N**D**L**C**R**R**H**H**I**Q**G**F**P**S**I**R**I**F**H**K**G**H**D**L**K**

C.subellipsoideaPDI-C 174 R**L**E**P**T**W**E**A**V**T**O**E**V**H**T**K**Y**-**P**E**A**D**G**R**I**R**F**A**K**V**D**C**T**E**V**D**L**C**R**H**O**I**T**C**F**P**S**I**R**V**F**R**S**G**H**D**E**V**

C.reinhardtiiPDI-C 179 R**L**E**P**T**W**E**A**A**T**K**E**V**H**D**K**Y**-**P**E**W**D**G**R**I**R**F**A**K**V**D**C**T**A**E**V**D**L**C**R**H**O**F**I**O**C**F**P**S**I**R**V**F**R**K**G**H**D**D**I**

V.carteriPDI-C 179 R**L**E**P**T**W**E**A**A**T**K**E**V**H**D**K**Y**-**P**E**W**D**G**R**I**R**F**A**K**V**D**C**T**O**E**M**E**L**C**R**T**H**F**I**O**C**F**P**S**I**R**V**F**R**K**G**H**D**D**I**

----->

B.distachyonPDI-C	235	ENQGHHDHESYYGRDTSILVAAMETTYVGNIPKEAHMLALEDKSNKTVDPAPKRPAPMTSG
O.sativaPDI-C	235	ENQGHHDHESYYGDRDTSILVAAMETTYVANIPKCAHVLALEDKSNKTVDPAPKRPAPMTSG
E.salsugineumPDI-C1	235	EDHGHEHESYYGDRDTSIVKMMVEGLVAPHPETHKVALDGGKSNDTVKHKKK-APVTGG
A.thalianaPDI12	235	EDHGHEHESYYGDRDTSIVKMMVEGLVAPHPETHKVALDGGKSNDTVKHKKK-APVTGG
C.rubellaPDI-C1	235	EDHGHEHESYYGDRDTSIVKMMVEGLVAPHPETHKVALDGGKSNDTVKHKKK-APVTGG
E.salsugineumPDI-C3	236	EDHGHEHESYYGDRDTSILKMMVEELLKPIKKEDEKLLPLDGGISVNTASSKKK-APVSGG
A.thalianaPDI13	236	EDHGHEHESYYGDRDTSILKMMVEELLKPIKKEDEKLLPLDGGISVNTASSKKK-APVSGG
C.rubellaPDI-C3	235	DDHGHDHESYYGDRDTSIVKMMVEELLKPIKKEDEKLLPLDGGKSENAASTVKKK-APVSGG
E.salsugineumPDI-C2	235	DDNAHHDHESYYGDRDTSIVKMMVIGLVEPIHLEPQRLALEDKSDNASKIKKK-APSTGG
A.thalianaPDI7	235	DDNAHHDHESYYGDRDTSIVKMMVSLVEPIHLEPHNLALEDKSDNSSRTIKKK-APSTGG
C.rubellaPDI-C2	235	DDNAHHEHESYYGDRDTSIVKMMVSLVEPIHLEPHNLALEDKSGNSSKTIKKK-APSTGG
S.lycopersicumPDI-C	235	DDHGHDHESYYGDRDTSIVKMMEDLVAPIKLDSQTITSDNSSTKLETGKRPAPVTTGG
S.tuberosumPDI-C	235	DDHGHDHESYYGDRDTSIVKMMEDLVAPIKLDSQMISSENSSTKLETGKRPAPVTTGG
M.truncatulaPDI-C1	235	SDHGHEHESYYGDRDTSIVKTMENILASFPSEYYKLALEDKLNVTEDSKRPAPSSGG
P.vulgarisPDI-C1	235	TDHGHDHESYYGDRDTSIVKTMENLVASIPTESQKSHSGDKS-NLASTIKRPAPSSGG
G.maxPDI-C1	235	SNHGHDHESYYGDRDTSIVKTMENLVASIPSESQKLPLEDKS-DVAKNTERPAPSTGG
G.maxPDI-C2	235	SDHGHDHESYYGDRDTSIVKTMENLVASIPSESQKLPLEDKS-NVATNTERPAPSTGG
M.truncatulaPDI-C2	235	SDHGHEHESYYGDRDTSIVKTMETLVASIPTEGSQLALEDKS----NGTKRPAPSTGG
P.vulgarisPDI-C2	235	SEHGHEHESYYGDRDTSIVKTFMENLVTSIPTASQKPALEDKS-NATDNAKRPAPSSAGG
G.maxPDI-C3	235	SEHGHEHESYYGDRDTSIVKFMEDLVTSIPTESQKLALEDKS-NAADNAKRPAPSSAGG
G.maxPDI-C4	235	SEHGHEHESYYGDRDTSIVKFMEDLVTSIPTESQKLALEDKS-NASDNAKRPAPSSAGG
V.viniferaPDI-C	235	DDHGHDHESYYGDRDTSIVKTMETLVAPIPLESQRLALENKSDSTADHKRPAPRTGG
P.trichocarpaPDI-C1	235	EDHGHDHESYYGDRDTSIVKTMELVAPIPAMESQORQALEHKKPENATQHWKRPAPSSAGG
P.trichocarpaPDI-C2	235	DDHGHDHESYYGDRDTSIVKTMELVAPIPAMESQORQALEHKKPENATEHWKRPAPSSAGG
P.patensPDI-C	240	DEHGHDHESYYGDRDTSIVAFMVELVPPATVVGKFOLEKSSITVFNATIKRPAPKAGG
S.moellendorffiiPDI-C	232	DEHGHEHESYYGRDTSILVKAMFALVP----KETTALLEDKTI----NGTVKRPAPRAGG
C.subellipsoideaPDI-C	233	NVHCVKHEHESYGRDTSQASLLAFADNLAPSAGQPHHYIR-----GVTIR-MAKTSG
C.reinhardtiiPDI-C	238	YIGGMHEHESYMGDRTKDALVAFADSLVPSAGQPHRKLKLA-----GISA-AFKTPG
V.carteriPDI-C	238	VIGGMHEHESYMGDRTKDALVAFADSLVPSAGQPHRKHHA-----AISA-AFKTPG

----->

B.distachyonPDI-C	295	CRVEGFVRVKKVPGSVIISARSGSHSFDPSQINVSHYVTOFSFGNRLSPNMFSELKRLIP
O.sativaPDI-C	295	CRIEGFVRVKKVPGSVIISARSGSHSFDPSQINVSHYVTOFSFGKRLSAKMFNEIKRLIP
E.salsugineumPDI-C1	294	CRVEGYVRVKKVPGNLVISAHSGAHSFDSQMNMSHVVTLSFGKRLSPRLLTDMKRLIP
A.thalianaPDI12	294	CRVEGYVRVKKVPGNLVISAHSGAHSFDSQMNMSHVVSHTFSFGKRLSPRLLTDMKRLIP
C.rubellaPDI-C1	294	CRVEGYVRVKKVPGNLVISAHSGAHSFDSQMNMSHVVSHTLSFGKRLSPRLLTDMKRLIP
E.salsugineumPDI-C3	295	CRIEGYVRAKKVPGELVISAHSGAHSFDSQMNMSHFVTHLSFGKRLSPRLLTDMKRLIP
A.thalianaPDI13	295	CRIEGYVRAKKVPGELVISAHSGAHSFDSQMNMSHVTVTHLTFGTMSERLWTDKRLIP
C.rubellaPDI-C3	294	CRIEGYVRAKKVPGELVISAHSGAHSFDSQMNMSHVTVTHLTFGTMSERLWTDKRLIP
E.salsugineumPDI-C2	294	CRIEGYMRVKKVPGNLVISAHSGAHSFDSQMNMSHVVNHLISFGKRLSPRLLTDMKRLIP
A.thalianaPDI7	294	CRIEGYMRVKKVPGNLVISAHSGAHSFDSQMNMSHVVNHLISFGKRLSPRLLTDMKRLIP
C.rubellaPDI-C2	294	CRIEGYMRVKKVPGNLVISAHSGAHSFDSQMNMSHVVNHLISFGKRLSPRLLTDMKRLIP
S.lycopersicumPDI-C	295	CRIEGFVRVKKVPGNLVISAHSAHSFDSQMNMSHVVISSEFSFGKRLTPKVMSDIKRLIP
S.tuberosumPDI-C	295	CRIEGFVRVKKVPGNLVISAHSAHSFDSQMNMSHVVISSEFSFGKRLTPKVMSDIKRLIP
M.truncatulaPDI-C1	294	CRIEGYVRVKKVPGNLVISAHSDAHSFDSQMNMSHAVVHLSFGKRLSPKLMSDVQRLIP
P.vulgarisPDI-C1	294	CRIEGYVRVKKVPGNLVISAHSDAHSFDSQMNMSHVVNHLISFGKRVSPRVMSDVKRLIP
G.maxPDI-C1	294	CRIDGYVRVKKVPGNLVISAHSDAHSFDSQMNMSHVVNHLISFGKRVSPRVMSDVKRLIP
G.maxPDI-C2	294	CRIDGYVRVKKVPGNLVISAHSDAHSFDSQMNMSHVVNHLISFGKRVSLRVMSDVKRLIP
M.truncatulaPDI-C2	291	CRIEGYVRVKKVPGSLVISAHSDAHSFDSQMNMSHVVNHLISFGKRVTPRAMIDVHWIP
P.vulgarisPDI-C2	294	CRIEGYVRVKKVPGNLVISAHSDAHSFDSQMNMSHVVNHLISFGKRVTPRAMSDVKRLIP
G.maxPDI-C3	294	CRIEGYVRVKKVPGNLVISAHSDAHSFDSQMNMSHVVNHLISFGKRVTPRAMSDVKRLIP
G.maxPDI-C4	294	CRIEGYVRVKKVPGNLVISAHSDAHSFDSQMNMSHFINNLSFGKRVTPRAMSDVKRLIP
V.viniferaPDI-C	295	CRIEGFVRVKKVPGNLVISAHSGSHSFDPSQMNMSHVVISHLSFGKRLAPRVMSDMKRVLIP
P.trichocarpaPDI-C1	295	CRIEGYVRVKKVPGNLVISAHSGAHSFDSQMNLSHVVISSEFSFGKRVLPVMSDVKRLIP
P.trichocarpaPDI-C2	295	CRIEGYVRVKKVPGNLVISAHSGAHSFDSQMNLSHVVISSEFSFGKRVLPVMSDVKRLIP
P.patensPDI-C	300	CRVEGFVRVKKVPGELMISAHSGSHSFDASMNMTHYVGFPSFGKRLSWRVSVHWVNEMLIP
S.moellendorffiiPDI-C	285	CRIEGFTRAKKVPGNLVISAHSGSHSFDASMNMTHYVSQFTFGREINFWWRRELYRIYIP
C.subellipsoideaPDI-C	282	CALSGFVVLVKKVPGALHFLAKSPGHSFDYQAMNMSHVVNLYFGNIPSPRRHQSLAKLHP
C.reinhardtiiPDI-C	287	CNLAGEFVMVKKVPGTLVHFVARSEGHSHFDHFWNMTHMHSFHVGTIPSPRKYQQLKRLHP
V.carteriPDI-C	287	CNLAGEFVMVKKVPGTLVHFVARSEGHSHFDHFWNMTHLVHTFHVGTIPSPRKYQQLKRLHP

BLOCK#5----->

BLOCK#6

B.distachyonPDI-C 355 YVGGHHD---RLAGQSYIVKHGDNNANVTIEHYLQIVKTELVTLRSSKELKLVFEEYEY  
O.sativaPDI-C 355 YVGGHHD---RLAGQSYIVKHGDVNNANVTIEHYLQIVKTELVTLRSSKELKLVFEEYEY  
E.salsugineumPDI-C1 354 YLGGSHG---RLDCKAFINQ-HEFGANVTIEHYLQIVKTEVITRRSGQEHSLIEEYEY  
A.thalianaPDI12 354 YLGLSHD---RLDCKAFINQ-HEFGANVTIEHYLQIVKTEVITRRSGQEHSLIEEYEY  
C.rubellaPDI-C1 354 YLGGSHD---RLDCKAFINQ-HEFGANVTIEHYLQIVKTEVITRRSGLEQAVIEEYEY  
E.salsugineumPDI-C3 355 YLGGSHD---RLNCKWFINQ-GQFANVTIEHYLQIVKTEVVSRRFGQEHSLIEEYEY  
A.thalianaPDI13 355 YLGGSYD---RLNCKSFINE-RQLDANVTIEHYLQIVKTEVVSRRSGQEHSLIEEYEY  
C.rubellaPDI-C3 354 YLGGSHD---RLNCKSFINQ-RQLDANVTIEHYLQIVKTEVVSRRFGRHSLIEEYEY  
E.salsugineumPDI-C2 354 YLGRSHD---RLDGRPFINQ-RDLGPNVTIEHYLQIVKTEVVKSN---GQALVEAYEY  
A.thalianaPDI7 354 YLGRSHD---RLDGRPFINQ-RDLGPNVTIEHYLQIVKTEVVKSN---GQALVEAYEY  
C.rubellaPDI-C2 354 YLGRSHD---RLDGRPFINQ-RDLGPNVTIEHYLQIVKTEVVKSN---GQALVEAYEY  
S.lycopersicumPDI-C 355 HLGSRSHD---RLNNSYVTNPRDSTENVTEIHFLOVVKTEVMTR---SYKLVIEEYEY  
S.tuberosumPDI-C 355 HLGSRSHD---RLNNSYVTNPRDSTENVTEIHFLOVVKTEVMTR---SYKLVIEEYEY  
M.truncatulaPDI-C1 354 YVGNSHD---RLDCLSFINS-HDFGANVTIEHYLQIVKTEVITRQ---GYQLVEEYEY  
P.vulgarisPDI-C1 354 YVGS SHD---RLNGLSFINT-RDFGANVTIEHYLQIVKTEVITRK---DHKLVIEEYEY  
G.maxPDI-C1 354 YVGS SHD---RLNGRSFINT-HDFGANVTIEHYLQIVKTEVITRK---DYKLVIEEYEY  
G.maxPDI-C2 354 YVGS SHD---RLNGRSFINT-HDFGANVTIEHYLQIVKTEVITRK---DYKLVIEEYEY  
M.truncatulaPDI-C2 351 YLGINHD---RLNGRSFINT-RDLGNVTIEHYLQIVKTEVITRK---GYKLVIEEYEY  
P.vulgarisPDI-C2 354 YLGS SHD---RLSGRSFINT-RDFGANVTIEHYLQIVKTEVVNRK---GYKLVIEEYEY  
G.maxPDI-C3 354 YIGSSH D---RLNGRSFINT-RDLGANVTIEHYLQIVKTEVVTRK---GYKLVIEEYEY  
G.maxPDI-C4 354 YIGSSH D---RLNGRSFINT-HDFGANVTIEHYLQIVKTEVVTRN---GYKLVIEEYEY  
V.viniferaPDI-C 355 YIGSSH D---RLNGRSYVSHPSDSNANVTIEHYLQIVKTEVITR---DHKLVIEEYEY  
P.trichocarpaPDI-C1 355 YIGSRSHD---KLNGRSFINH-RDVGANVTIEHYLQVVKTEVVTRSSSRKLVIEEYEY  
P.trichocarpaPDI-C2 355 HIGSRSHD---KLNGRSFINH-RDVGANVTIEHYLQVVKTEVVTRSSSRKLVIEEYEY  
P.patensPDI-C 360 ALDSNID---RLTGQVFPESE---YENTHHDHYLQVVKTEVITLRKQDLRVLEQYDYT  
S.moellendorffiiPDI-C 345 HLASVYDVEANLIGRIYVYVQ---HENITHDHYLQVVKTEVVSLEKRRKFSLLBOYDYT  
C.subellipsoideaPDI-C 342 -AGLSDDWAD-KLAGQDFFSR---AAKATFEHYQVVLITIEPSKRRPILSY-DAYEY  
C.reinhardtiiPDI-C 347 -AGLTHDWAD-KLHDQLFVSE---HTQSTHEHYLQVVLITIEPRHSRHTGNY-DAYEY  
V.carteriPDI-C 347 -AGLTHDWAD-QLRDQFFVSE---HPOSTHEHYLQIVLITIEPRHSRHSNGY-DAYEY

B.distachyonPDI-C 411 AHSSIVHSFYVVPVKFHFEPSPMQVLVTELEPKSFSHFITNVCAIIGGVFTVAGILDSILH  
O.sativaPDI-C 411 AHSSIVHSFYVVPVKFHFEPSPMQVLVTELEPKSFSHFITNVCAIIGGVFTVAGILDSIFH  
E.salsugineumPDI-C1 409 AHSSVAQTYYPVAKFHFELSPMQVLITENPKSFSHFITNLCAIIGGVFTVAGILDSIFH  
A.thalianaPDI12 409 AHSSVAQTYYPVAKFHFELSPMQVLITENPKSFSHFITNLCAIIGGVFTVAGILDSIFH  
C.rubellaPDI-C1 409 AHSSVAQTYYPVAKFHFELSPMQVLITENPKSFSHFITNLCAIIGGVFTVAGILDSIFH  
E.salsugineumPDI-C3 410 AHSSVAHSYYPVAKFHFELSPMQVLISENPKSFSHFITNVCAIIGGVFTVAGILDSIFQ  
A.thalianaPDI13 410 AHSSVARSYHYPEAKFHFELSPMQVLISENPKSFSHFITNVCAIIGGVFTVAGILDSIFQ  
C.rubellaPDI-C3 409 AHSSVAHSYHYPEAKFHFELSPMQVLISENPKSFSHFITNVCAIIGGVFTVAGILDSIFQ  
E.salsugineumPDI-C2 406 AHSSVAQSYYPVAKFHFELSPMQVLITENPKSFSHFITNVCAIIGGVFTVAGILDSILH  
A.thalianaPDI7 406 AHSSVAHSYYPVAKFHFELSPMQVLITENPKSFSHFITNVCAIIGGVFTVAGILDSILH  
C.rubellaPDI-C2 406 AHSSVAQSYYPVAKFHFELSPMQVLITENPKSFSHFITNVCAIIGGVFTVAGILDSILH  
S.lycopersicumPDI-C 407 AHSSIVHSLHIPVAKFHFELSPMQVLITENPKSFSHFITNVCAIIGGVFTVAGILDSILH  
S.tuberosumPDI-C 407 AHSSIVHSLHIPVAKFHFELSPMQVLITENPKSFSHFITNVCAIIGGVFTVAGILDSILH  
M.truncatulaPDI-C1 406 AHSSVAHSLHIPVAKFHFELSPMQVLITENPKSFSHFITNVCAIIGGVFTVAGILDSILH  
P.vulgarisPDI-C1 406 AHSSVAQSLHIPVAKFHFELSPMQVLITENPKSFSHFITNVCAIIGGVFTVAGILDSILH  
G.maxPDI-C1 406 AHSSVAQSLHIPVAKFHFELSPMQVLITENPKSFSHFITNVCAIIGGVFTVAGILDSILH  
G.maxPDI-C2 406 AHSSVAQSLHIPVAKFHFELSPMQVLITENPKSFSHFITNVCAIIGGVFTVAGILDSILH  
M.truncatulaPDI-C2 403 AHSSVAHSVNIIPVAKFHFELSPMQVLITENPKSFSHFITNVCAIIGGVFTVAGILDSILH  
P.vulgarisPDI-C2 406 AHSSVAHSVDIPVAKFHFELSPMQVLITENPKSFSHFITNVCAIIGGVFTVAGILDSILH  
G.maxPDI-C3 406 AHSSVAHSLDIPVAKFHFELSPMQVLITENPKSFSHFITNVCAIIGGVFTVAGILDSILH  
G.maxPDI-C4 406 AHSSVAHSVDIPVAKFHFELSPMQVLITENPKSFSHFITNVCAIIGGVFTVAGILDSILH  
V.viniferaPDI-C 408 AHSSIVQSLYIPVAKFHFELSPMQVLITENPKSFSHFITNVCAIIGGVFTVAGILDSVH  
P.trichocarpaPDI-C1 410 AHSSIVQSLYIPVAKFHFELSPMQVLITENPKSFSHFITNVCAIIGGVFTVAGILDSILH  
P.trichocarpaPDI-C2 410 AHSSVAQTYYPVAKFHFELSPMQVLITENPKSFSHFITNVCAIIGGVFTVAGILDSILH  
P.patensPDI-C 412 AHSSVAQTYYPVAKFHFELSPMQVLITENPKSFSHFITNVCAIIGGVFTVAGILDSMLH  
S.moellendorffiiPDI-C 401 SHSNITQNTNVPVAKFHFELSPMQVLITENPKSFSHFITNVCAIIGGVFTVAGILDSMLH  
C.subellipsoideaPDI-C 395 VHSHTYDADIPVAKFHFELSPMQVLITENPKSFSHFITNVCAIIGGVFTVAGILDSMLH  
C.reinhardtiiPDI-C 400 AHSSVAQSDIPVAKFHFELSPMQVLITENPKSFSHFITNVCAIIGGVFTVAGILDSMLH  
V.carteriPDI-C 400 AHSSHTYQSDAIPVAKFHFELSPMQVLITENPKSFSHFITNVCAIIGGVFTVAGILDSMLH

----->

B.distachyonPDI-C	471	NTLRVKKVELGKDI
O.sativaPDI-C	471	NTLRVKKVELGKNI
E.salsugineumPDI-C1	469	NTLRVKKVELGKNI
A.thalianaPDI12	469	NTVRLVKKVELGKNI
C.rubellaPDI-C1	469	NTIRLVKKVELGKNI
E.salsugineumPDI-C3	470	NTIRLVKKVELGKNI
A.thalianaPDI13	470	NTVRMVKKTELGNKI
C.rubellaPDI-C3	469	NTVRLVKKTELGNKI
E.salsugineumPDI-C2	466	QTMILMKKTELGNFI
A.thalianaPDI7	466	HSMILMKKTELGNFI
C.rubellaPDI-C2	466	HTMILMKKTELGNFI
S.lycopersicumPDI-C	467	NTMRMVKKVELGNFI
S.tuberosumPDI-C	467	NTMRMVKKVELGNFI
M.truncatulaPDI-C1	466	NTIRLMRKVELGNFI
P.vulgarisPDI-C1	466	NTIRLMKKVELGNFI
G.maxPDI-C1	466	NTIRLMKKVELGNFI
G.maxPDI-C2	466	NTIRLMKKVELGNFI
M.truncatulaPDI-C2	463	NTIRLMKKTELGNFI
P.vulgarisPDI-C2	466	NTIRLMKKVELGNFI
G.maxPDI-C3	466	NTIRMVKKTELGNFI
G.maxPDI-C4	466	NTIRMMKKVELGNFI
V.viniferaPDI-C	468	NTMRLMKKTELGNFI
P.trichocarpaPDI-C1	470	HTVRMMKKVELGNFI
P.trichocarpaPDI-C2	470	NTFRMMKKVELGNFI
P.patensPDI-C	472	NAMHILMKKVELGKQY
S.moellendorffiiPDI-C	461	GAMRMVKKTELGKQF
C.subellipsoideaPDI-C	455	TGARFAKKVELGKHT
C.reinhardtiiPDI-C	460	QSFKVVKKLNLGKOG
V.carteriPDI-C	460	QSFKVVKKLNLGKOG

Multiple sequence alignment for NJ tree in Online Reference 4

BLOCK#1-----

C.subellipsoideaPDI-C	1	----MARVL-QKLSVDFYRKIPNDL	TEATLAGAGLSIVFAFTIVVLLTAE	LSSTFAIET
C.reinhardtiiPDI-C	1	----MVRFL-SRLKALDFYRKIPSD	TEATLTGAWLSIVAALVIMLLFVAEL	SAFSTTT
V.carteriPDI-C	1	----MARLF-SFKLALDFYRKIPSD	TEATLTGAWLSIVAALVIMVLEF	TAMMSFTTT
K.flaccidumPDI-C	1	----MNRVL-GRLRSVDFYRRI	PRDLTEATLAGGTLVVASTIAMV	LLFGMELQAYLTTSA
B.rapaPDI-C1	1	-----MVSPTKLLKSMDFYRKIP	PRDLTEASLSGAGLSIVAALVMM	LLFGMELSSYLAVNT
B.rapaPDI-C2	1	-----MVSPTKLLKSMDFYRKIP	PRDLTEASLSGAGLSIVAALVMM	LLFGMELSSYLEVNT
E.salsugineumPDI-C1	1	-----MVSSTKLLKSVDFYRKIP	PRDLTEASLSGAGLSIVAALVMM	LLFGMELSSYLEVST
A.thalianaPDI12	1	-----MVSSTKLLKSVDFYRKIP	PRDLTEASLSGAGLSIVAALFMM	LLFGMELSSYLEVNT
C.rubellaPDI-C1	1	-----MVSSTKLLKSVDFYRKIP	PRDLTEASLSGAGLSIVAALFMM	LLFGMELSSYLEVNT
B.rapaPDI-C5	1	-----MVSTTKIKSVDFYRKIP	PRDLTEASLSGAGLSITAAALAM	MLFGMELSTYLAVT
A.thalianaPDI13	1	-----MVSTKIKSVDFYRKIP	PRDLTEASLSGAGLSIVAALAML	FLFGMELSSYLAIN
C.rubellaPDI-C3	1	-----MVSTTKIKSVDFYRKIP	PRDLTEASLSGAGLSIVAALAML	FLFGMELSSYLAVNT
B.rapaPDI-C6	1	-----MVSTTKIKSVDFYRKIP	PRDLTEASLSGAGLSITAAALAM	MLFGMELSTYLAVT
E.salsugineumPDI-C3	1	-----MVSTTKIKSVDFYRKIP	PRDLTEASLSGAGLSIVAALAM	VFLFGMELSNYLAVST
S.bicolorPDI-C	1	-----MISSSKLLKSVDFYRKIP	PRDLTEASLSGAGLSIVAALAM	VFLFGMELSNYLAVNT
Z.maysPDI-C	1	-----MISSSKLLKSVDFYRKIP	PRDLTEASLSGAGLSIVAALAM	VFLFGMELSNYLAVNT
B.distachyonPDI-C	1	-----MISSSKLLKSVDFYRKIP	PRDLTEASLSGAGLSIVAALAM	VFLFGMELSSYLAVNT
O.sativaPDI-C	1	-----MISSSKLLKSVDFYRKIP	PRDLTEASLSGAGLSIVAALAM	VFLFGMELSNYLAVNT
B.rapaPDI-C4	1	-----MISPRKIKSVDFYRKIP	PRDLTEASLSGAGLSIVAALSML	LLFGMELSSYITVST
A.thalianaPDI7	1	-----MVSTSKIKSVDFYRKIP	PRDLTEASLSGAGLSITAAALSML	FLFGMELNNYLAVST
C.rubellaPDI-C2	1	-----MVSTSKIKSVDFYRKIP	PRDLTEATLSGAGLSITAAALSML	FLFGMELNNYLAVST
B.rapaPDI-C3	1	-----MVSTSRIKSVDFYRKIP	PRDLTEATLSGAGLSIVAALSML	FLFGMELNNYLAVST
E.salsugineumPDI-C2	1	-----MVSTSKIKSVDFYRKIP	PRDLTEATLSGAGLSIVAALSML	FLFGMELNNYLAVST
S.lycopersicumPDI-C	1	-----MVSTSKIKSVDFYRKIP	PRDLTEASLSGAGLSIVAALCM	FLFGMELNNYITVST
S.tuberosumPDI-C	1	-----MVSTSKIKSVDFYRKIP	PRDLTEASLSGAGLSIVAALSMM	FLFGMELNNYITVST
M.truncatulaPDI-C1	1	-----MTTASKIKSVDFYRKIP	PRDLTEASLSGAGLSIVAALAM	MFLFGMELNEYLSVHT
P.vulgarisPDI-C1	1	-----MISSSKLLKSVDFYRKIP	PRDLTEASLSGAGLSIVAALCM	VFLFGMELNSYLSVST
G.maxPDI-C1	1	-----MISSSKIKSVDFYRKIP	PRDLTEASLSGAGLSIVAALAM	MLFGMELNSYLSVST
G.maxPDI-C2	1	-----MISSSKIKSVDFYRKIP	PRDLTEASLSGAGLSIVAALAM	MLFGMELNSYLSVST
M.truncatulaPDI-C2	1	-----MLSASKLLKSVDFYRKIP	PRDLTEASLSGAGLSILAAALAM	MFLFGMELSNYFAVTT
P.vulgarisPDI-C2	1	-----MISATKLLKSVDFYRKIP	PRDLTEASLSGAGLSIVAALSMM	FLFGMELSNYITVST
G.maxPDI-C3	1	-----MISATKLLKSVDFYRKIP	PRDLTEASLSGAGLSIVAALVMM	FLFGMELNSYLSVST
G.maxPDI-C4	1	-----MISATKLLKSVDFYRKIP	PRDLTEASLSGAGLSIVAALAM	MFLFGMELSSYLSVST
V.viniferaPDI-C	1	-----MVSTSKIKSVDFYRKIP	PRDLTEASLSGAGLSIVAALSMM	FLFGMELSNYLSVST
C.sativusPDI-C	1	-----MISSTKLLKSVDFYRKIP	PRDLTEATLSGAGLSIVAALSMM	VFLFGMELSNYLSVST
P.persicaPDI-C	1	-----MISTGKIKSVDFYRKIP	PRDLTEASLSGAGLSITAAALAM	MFLFGMELNSYFAVST
T.cacaoPDI-C	1	-----MISSSKIKSVDFYRKIP	PRDLTEASLSGAGLSIVAALAM	MFLFGMELSNYITVST
P.trichocarpaPDI-C1	1	-----MVSTNKLKSVDFYRKIP	PRDLTEASLSGAGLSIVAALAM	MFLFGMELNNYITVNT
P.trichocarpaPDI-C2	1	-----MVSTNKLKSVDFYRKIP	PRDLTEASLSGAGLSIVAALAM	VFLFGMELNNYITVNT
S.moellendorffiiPDI-C	1	-----MTTASKIKSVDFYRKIP	PRDLTEASLSGAGLSLIAAFAM	LFLFGMELNSYITVSS
P.patensPDI-C	1	-----MVSTSKLLKSVDFYRKIP	PRDLTEASLSGAGLSITAAALTM	VFLFGMELSAYLSTTT
C.reinhardtiiERV-A	1	--MSGGGFL-GKLLKALDAYPK	INEDFFTKTMSGGIITIVSVVM	VLLFLSELRLYTTTSS
V.carteriERV-A	1	MSNSGGGFL-SKLLKALDAYPK	INEDFFTKTMSGGIITIVSVVM	VLLFLSELRLYMTTQS
C.subellipsoideaERV-A	1	----MEGIV-SKLLKALDAYPK	INEDFFQRTLSGGIITIGSSI	IMLCLFSELRLYFKGIT
K.flaccidumERV-A	1	----MGDVL-NYLKLDAYPK	INEDFYRSLTSGGLITLVSSI	FIVLFFTELGLFHTTKT
B.distachyonERV-A3	1	----MDGFL-QKLLKGLDAYPK	VNEDFYKRTLSSGGVVTIVS	AVVMMLLFISETRSFYSAT
O.sativaERV-A3	1	----MEGFL-QKLLKGLDAYPK	VNEDFYKRTLSSGGVVTIVS	AVVMMLLFVSETRSFYSAT
Z.maysERV-A3	1	----MDAFL-QRLKRLDAYPK	VNEDFYKRTLSSGGVITVVA	AVVMMLLFISETRSFYSAT
Z.maysERV-A2	1	----MDAFL-QRLKRLDAYPK	VNEDFYKRTLSSGGVITVVA	AVVMMLLFISETRSFYSAT
S.bicolorERV-A3	1	----MDAFL-QRLKRLDAYPK	VNEDFYKRTLSSGGVITVVA	AVVMMLLFISETRSFYSAT
P.patensERV-A1	1	---MALQMI-QKLLKSLDAYPK	INEDFYRSLTSGGIITISAT	FMVLLFFSELRLYIAAQV
P.patensERV-A4	1	-----MSFF-NKLLKGLDAYPK	ISEDFYRSLTSGGLITLVSS	FMVLLFITFRIYSAQT
P.patensERV-A2	1	-----MAVF-NKLLKGLDAYPK	ISEDFYRSLTSGGVITLVST	VMFVLFVTEISLYLSAQT
P.patensERV-A3	1	-----MAVF-NKLLKGLDAYPK	ISEDFYRSLTSGGVITLVSS	FMVLLFVTEFRIYSAQT
S.bicolorERV-A2	1	-----MELW-SKLRNLDAYPK	VNEDFYRSLTSGGLITLSS	LATLFFSELRLYYSAT
B.distachyonERV-A2	1	-----MDLW-NKLRNLDAYPK	VNEDFYRSLTSGGLITLASS	LAILLFFSELRLYYSAT
O.sativaERV-A2	1	-----MDLW-NKLRNLDAYPK	VNEDFYRSLTSGGLITLASS	LAILLFLSELRLYYSAT
S.moellendorffiiERV-A	1	-----MQML-KKLLQGLDAYPK	INEDFHSRTLSSGGVITVSS	IFMALLFITELKLLPLPQT
C.sativusERV-A3	1	-----MDAIF-NKLRNLDAYPK	INEDFYRRTLSSGLITLASS	FFMFLFFSELRLYHAKT
M.truncatulaERV-A2	1	----MDKVF-NKLRNLDAYPK	VNEDFYNRTLSSGGVITVVA	AVVMMFLFFSELRLYTYVT
P.vulgarisERV-A2	1	----MDKVF-NKLRNLDAYPK	VNEDFYRSLTSSGGVITVVA	AVVMMFLFFSELRLYTYVT
G.maxERV-A3	1	----MDKVF-NKLRNLDAYPK	VNEDFYNRTLSSGGVITVVA	AVVMMFLFFSELRLYTYVT
G.maxERV-A4	1	----MDKVF-NKLRNLDAYPK	VNEDFYNRTLSSGGVITVVA	AVVMMFLFFSELRLYTYVT
S.lycopersicumERV-A2	1	----MERVF-SKLRNLDAYPK	INEDFYNRTLSSGIITLVAS	IMLVFVNLGLYHYSY
S.tuberosumERV-A2	1	----MERVF-SKLRNLDAYPK	INEDFYNRTLSSGIITLVAS	IMLVFVNLGLYHYSY
P.persicaERV-A2	1	----MDSIL-QKLRNLDAYPK	INDEFFSRTLSSGIITLASS	LILLFFSELRLYHTVT
T.cacaoERV-A2	1	----MENVF-NKLRNLDAYPK	VNEDFYRSLTSGGIITLVSS	LAIFFLFFSELRLYHTVT
P.trichocarpaERV-A3	1	----MEGIY-QKLRNLDAYPK	INEDFYRSLTSGGLITLSSI	IMLFFSELRLYHAVT
P.trichocarpaERV-A4	1	----MDRIY-QKVRNLDAYPK	INEDFYRSLTSGGLITLSSI	VLLIFLFFSELRLYHKVT
C.sativusERV-A1	1	----MESLM-NKIRKGLDAYPK	ISEDFYNRTLSSGIITLASS	IMLFFSELRLYHTAT
V.viniferaERV-A2	1	----MDRVF-QRLKRLDAYPK	INEDFYRRTLSSGLITLSSI	VMLFFLFFSELRLYHTVT
B.rapaERV-A4	1	-----M-NRLRNLDAYPK	INEDFYKRTLSSGGVITLVSS	VVMMLLFFSELRLYHPVT
B.rapaERV-A3	1	-----M-NRLRNLDAYPK	INEDFYNRTLSSGLITLFS	SLLMLLFFSELRLYHPVT
E.salsugineumERV-A2	1	----MVGVM-NRLRNLDAYPK	INEDFYRRTLSSGGVITLVSS	VVMLLFFSELRLYHPVT

## BLOCK#1

A.thalianaERV-A2 1 ----MVGVM-NRLRNLDAYPKINEDFYRRTLSSGGVITLASSIVMLLFFSELRQLYLHPVT  
C.rubellaERV-A2 1 ----MVGVM-NRLRNLDAYPKINEDFYRRTLSSGGVITLSSLLMLVLFSELRQLYLHPVT  
B.rapaERV-A2 1 ----MAGVM-NRLRNLDAYPKINDDFYRRTLSSGGLITLASSLVMLLFFSELRRLYLHPVT  
E.salsugineumERV-A3 1 ----MPGVM-NRLRNLDAYPKINDDFYRRTLSSGGLITLSSIFMLLFFSELRRLYLHPVT  
B.distachyonERV-A1 1 ----MDGLM-SKLRSLDAYPKVNEEDFYRRTLSSGGVITLASSFVMLLFFVSELRLYLHAVT  
O.sativaERV-A1 1 ----MEGLL-SKLRSLDAYPKVNEEDFYRRTLSSGGIITLASSVVMMLLFFVSELRLYLHAVT  
S.bicolorERV-A1 1 ----MDGLL-SKLRSLDAYPKVNEEDFYRRTLSSGGVITLASSVIMMLLFFVSELRLYLHAVT  
Z.maysERV-A1 1 ----MDGLL-SKLRSLDAYPKVNEEDFYRRTLSSGGIITLVSSAVMLLFFVSELRLYLHAVT  
S.lycopersicumERV-A1 1 ----MDSFV-SKIRSLDAYPKINEDFYRRTLSSGGVITLASSIIMTLLFISELRRLYLHAAT  
S.tuberosumERV-A1 1 ----MDSFI-SKIRSLDAYPKINEDFYRRTLSSGGVITLASSIIMTLLFISELRRLYLHAAT  
B.rapaERV-A1 1 ----MAGIL-NKLRNLDAYPKINEDFYRRTLSSGGVITLVSSVVMFLLFFSELRRLYLHSTV  
E.salsugineumERV-A1 1 ----MAGIL-NKLRNLDAYPKINEDFYRRTLSSGGVITLFFSVVMFLLFFSELRRLYLHTVT  
A.thalianaERV-A1 1 ----MAGIL-NKLRNLDAYPKINEDFYRRTLSSGGVITLSSVVMFLLFFSELRRLYLHTVT  
C.rubellaERV-A1 1 ----MAGIL-NKLRNLDAYPKINEDFYRRTLSSGGVITLSSVVMFLLFFSELRRLYLHTVT  
V.viniferaERV-A1 1 ----MDNII-NKLRNLDAYPKINEDFYRRTLSSGGVITLASSIFMLLFFISELRRLYLHAVT  
C.sativusERV-A2 1 ----MDNII-SKLRNLDAYPKINEDFYRRTLSSGGVITLSSSILMLLFFISELRRLYLHAVT  
M.truncatulaERV-A1 1 ----MDSIM-NKLRNLDAYPKINEDFYRRTLSSGGLITIVSSILMLLFFISELRRLYLHAAT  
P.persicaERV-A1 1 ----MENMM-SRLRNLDAYPKINEDFYRRTLSSGGVITLASSIVMLLFLSELRRLYLHAVT  
P.vulgarisERV-A1 1 ----MEGIM-SKLRNLDAYPKINEDFYRRTLSSGGVITLASSIIMMLLFFSELRRLYLQSVT  
G.maxERV-A1 1 ----MDSIM-SKLRNLDAYPKINEDFYRRTLSSGGVITLASSIIMMLLFFSELRRLYLHAVT  
G.maxERV-A2 1 ----MESII-SKLRNLDAYPKINEDFYRRTLSSGGVITLASSIIMMLLFFSELRRLYLHAVT  
T.cacaoERV-A1 1 ----MDGIM-NKLRNLDAYPKINEDFYRRTLSSGGVITLVSSVVMFLLFFSELRRLYLHAVT  
P.trichocarpaERV-A1 1 ----MEGLM-SKLRNLDAYPKINEDFYRRTLSSGGVITLASSVVMFLLFFSELRRLYLHAVT  
P.trichocarpaERV-A2 1 ----MDGLM-SKLRNLDAYPKINEDFYRRTLSSGGVITLASSIVMLLFFSELRRLYLHAVT  
C.reinhardtiiERV-B 1 ----MGKGR---LSSLSAYVYKPEAHLVNOITHGALVTLCCVLIATLTLFLHLSKSYQMHR  
V.carteriERV-B 1 -----MKF--KLSSLAYVYKPEAHLVQQTVMHGALVTLCCVLIAMLFVHLSGSYRQHR  
C.subellipsoideaERV-B 1 -----MKIK--SFRNFSAYVYKPEAHLVQRTYFGAVTVLCCVLIATLFLFANELREYTPFS  
K.flaccidumERV-B 1 ----MAFKIAALSRLDAYPRAESHLTQRTISGAATSIMCISLMVLLFVNELQFYTPYT  
P.patensERV-B 1 ----MRKEKW-QVIRNLDAPRAEEDHLLQKTQSGAVVSAICLFIIMGVLLFFHELRYLHTVT  
S.moellendorffiiERV-B 1 ----MGIK---MKNINAFPAEEDHLLQKTQSGAVVSAICLFIIMGVLLFFHELRYLSTNV  
S.bicolorERV-B 1 ----MARI-PSLKSINAFPAEEDHLLKKTYSGAVVTIFCLLIMVTLFVHLSQFYTTYT  
Z.maysERV-B 1 ----MARI-PSLKSINAFPAEEDHLLKKTYSGAVVTIFCLLIMVTLFVHLSQFYTTYT  
B.distachyonERV-B 1 ----MGRI-PSLKNFNAPFAEEDHLLKKTYSGAVVTIFCLLIMVTLFVHLSQFYTTYT  
O.sativaERV-B 1 ----MGRI-PSLKNFNAPFAEEDHLLKKTYSGAVVTIFCLLIMVTLFVHLSQFYTTYT  
B.rapaERV-B2 1 ----MGVK-QALRSIDAFPAEEDHLLQKTQSGAVVSVGLLIMATLFLHLSYINTLT  
B.rapaERV-B1 1 ----MGVK-QALRSIDAFPAEEDHLLQKTQSGAVVSVGLLIMATLFLHLSYINTLT  
E.salsugineumERV-B 1 ----MGVK-QALKSIDAFPAEEDHLLQKTQSGAVVSVGLLIMATLFLHLSYINTLT  
A.thalianaERV-B 1 ----MGVK-QALRSIDAFPAEEDHLLQKTQSGAVVSVGLLIMATLFLHLSYINTLT  
C.rubellaERV-B 1 ----MGVK-QALRSIDAFPAEEDHLLQKTQSGAVVSVGLLIMATLFLHLSYINTLT  
M.truncatulaERV-B 1 ----MGMK-QVIRNLDAPRTEEDHLLQKTQSGALVSIICLIMATLFLHLSYINTLT  
P.vulgarisERV-B 1 ----MGMK-QVIRNLDAPRAEEDHLLQKTQSGALVSVICLIMATLFLVHLSYINTLT  
G.maxERV-B1 1 ----MGMK-QVIRNLDAPRAEEDHLLQKTQSGALVSVICLIMATLFLVHLSYINTLT  
G.maxERV-B2 1 ----MGMK-QVIRNLDAPRAEEDHLLQKTQSGALVSVICLIMATLFLVHLSYINTLT  
C.sativusERV-B 1 ----MGLK-QTIRSLDAFPRAEEDHLLQKTQSGAVVSVGLVIMATLFLHLSYINTLT  
S.lycopersicumERV-B1 1 ----MGVK-QVLRAMDAFPRAEEDHLLQKTQSGAVVSVGLVIMSTLFLHLSYINTLT  
S.tuberosumERV-B1 1 ----MGVK-QVLRAMDAFPRAEEDHLLQKTQSGAVVSVGLVIMSTLFLHLSYINTLT  
S.lycopersicumERV-B2 1 ----MGVK-QALRAIDAFPAEEDHLLKTKFGAVSVICLIMVTLFLHLSYINTLT  
S.tuberosumERV-B2 1 ----MGVK-QALRAIDAFPAEEDHLLKTKFGAVSVICLIMVTLFLHLSYINTLT  
P.persicaERV-B 1 ----MGVK-QALKSLDAFPRAEEDHLLQKTQSGAVVSVGLLIMATLFLVHLSYINTLT  
P.trichocarpaERV-B1 1 ----MGMK-QAIKSLDAFPRAEEDHLLQKTQSGALVSIICLVIMATLFLYHLSYINTLT  
P.trichocarpaERV-B2 1 ----MGVK-QAIKSLDAFPRAEEDHLLQKTQSGALVSVICLVIMATLFLYHLSYINTLT  
V.viniferaERV-B 1 ----MGVK-QFIRSLHAFPAEEDHLLQKTQSGAVVSIICLVIMATLFLHLSYINTLT  
T.cacaoERV-B 1 ----MGVK-QALKSLDAFPRAEEDHLLQKTQSGALVSVICLVIMATLFLHLSYINTLT



-----> BLOCK#2 ----->

C.subellipsoideaPDI-C 56 KEELIVDRSAHGDLRLRINFNISFPALSCEFATLDVSDALGTRKRN----LTKTIRKLPIT  
C.reinhardtiiPDI-C 56 SSQLVVDRSPQNEELKLNFNISFPALSCEFATVDVSDSLGTRKRN----LTKTVRKVPI  
V.carteriPDI-C 56 TTQLIVDRSPQNEELKLNFNISFPALSCEFATVDVSDTLGTRKRN----LTKTVRKMPI  
K.flaccidumPDI-C 56 TTTVLIDRSRDGDVLRINFNISFPALSCEFASVDVSDVLCGTHRIN----LTKTVRKFPPI  
B.rapaPDI-C1 55 TTAVVVDKSDGDFLRIDFNISFPALSCEFASVDVSDVLCGTRNRLN----LTKTVRKFPPI  
B.rapaPDI-C2 55 TTAVVVDKSDGDFLRIDFNISFPALSCEFASLDVNDVLCGTRNRLN----LTKTVRKFPPI  
E.salsugineumPDI-C1 55 TTAVVVDNSADGDFLRITFNISFPALSCEFASVDVSDVLCGTRNRLN----LTKTVRKFPPI  
A.thalianaPDI12 55 TTAVVVDKSDGDFLRIDFNISFPALSCEFASVDVSDVLCGTRNRLN----LTKTVRKFPPI  
C.rubellaPDI-C1 55 TTSVIVDKSDGDFLRIDFNISFPALSCEFASVDVSDVLCGTRNRLN----LTKTVRKFPPI  
B.rapaPDI-C5 55 QTSVVVDNSDDDFLRIDFNISFPALSCEFATFEVSDVLCSTNRLN----LTKTIKRVPI  
A.thalianaPDI13 55 STSVIVDKSSDGDFLRINIDFNISFPALSCEFASVDVSDVLCGTRNRLN----LTKTVRKFPPI  
C.rubellaPDI-C3 55 STSVIVDKSSDGDFLRINIDFNISFPALSCEFASVDVSDVLCGTRNRLN----LTKTVRKFPPI  
B.rapaPDI-C6 55 NTSVIVDKSSDGDFLRINIDFNISFPALSCEFASVDVSDVLCGTRNRLN----LTKTIKRVPI  
E.salsugineumPDI-C3 55 NTSVIVDKSSDGDFLRIDFNISFPALSCEFASVDVSDVLCGTRNRLN----LTKTVRKFPPI  
S.bicolorPDI-C 55 TTSVIVDRSSDGEFLRIDFNISFPALSCEFASVDVSDVLCGTRNRLN----LTKTVRKFSI  
Z.maysPDI-C 55 TTSVIVDRSSDGEFLRIDFNISFPALSCEFASVDVSDVLCGTRNRLN----LTKTVRKFSI  
B.distachyonPDI-C 55 TTSVIVDRSSDGEFLRIDFNISFPALSCEFASVDVSDVLCGTRNRLN----LTKTVRKFSI  
O.sativaPDI-C 55 STSVIVDRSSDGEFLRIDFNISFPALSCEFASVDVSDVLCGTRNRLN----LTKTVRKFSI  
B.rapaPDI-C4 55 TTSVIVDRSSDGDFLRMDFNISFPALSCEFASVDVSDVLCGTRNRLN----LTKTVRKFSI  
A.thalianaPDI7 55 STSVIVDRSSDGDFLRMDFNISFPALSCEFASVDVSDVLCGTRNRLN----LTKTVRKFSI  
C.rubellaPDI-C2 55 STSVIVDRSSDGDFLRMDFNISFPALSCEFASLDVSDVLCGTRNRLN----LTKTVRKFSI  
B.rapaPDI-C3 55 TTSVIVDRSSDGDFLRMDFNISFPALSCEFASVDVSDVLCGTRNRLN----LTKTVRKFSI  
E.salsugineumPDI-C2 55 TTSVIVDRSSDGDFLRMDFNISFPALSCEFASVDVSDVLCGTRNRLN----LTKTVRKFSI  
S.lycopersicumPDI-C 55 TTSVIVDKSSDAEFLRIDFNISFPALSCEFASVDVSDVLCGTRNRLN----LTKTVRKFSI  
S.tuberosumPDI-C 55 TTSVIVDKSSDAEFLRIDFNISFPALSCEFASVDVSDVLCGTRNRLN----LTKTVRKFSI  
M.truncatulaPDI-C1 55 STSVIVDKSSDGEFLRIDFNISFPALSCEFASVDVSDVLCGTRNRLN----LTKTVRKFSI  
P.vulgarisPDI-C1 55 ATSVIVDKSSDGDYLRIDFNISFPALSCEFAAVDSDVLCGTRNRLN----LTKTVRKFSI  
G.maxPDI-C1 55 STQVIVDKSSDGDYLRIDFNISFPALSCEFAAVDSDVLCGTRNRLN----LTKTVRKFSI  
G.maxPDI-C2 55 STQVIVDKSSDGDYLRIDFNISFPALSCEFAAVDSDVLCGTRNRLN----LTKTVRKFSI  
M.truncatulaPDI-C2 55 STSVIVDKSSDGDFLRIDFNISFPALSCEFASVDVSDVLCGTRNRLN----LTKTVRKFSI  
P.vulgarisPDI-C2 55 STSVIVDKSSDHDYLRIDFNISFPALSCEFASVDVSDVLCGTRNRLN----LTKTVRKFSI  
G.maxPDI-C3 55 STSVIVDKSSDGDYLRIDFNISFPALSCEFASVDVSDVLCGTRNRLN----LTKTVRKFSI  
G.maxPDI-C4 55 STSVIVDKSSDGDYLRIDFNISFPALSCEFASVDVSDVLCGTRNRLN----LTKTVRKFSI  
V.viniferaPDI-C 55 STSVIVDQSSDGDFLRIFENISFPALSCEFASVDVSDVLCGTRNRLN----LTKTVRKFSI  
C.sativusPDI-C 55 STSVIVDQSSDGDFLRMDFNISFPALSCEFAAVDSDVLCGTRNRLN----LTKTVRKFSI  
P.persicaPDI-C 55 STSVIVDKSSDGDFLRIFENISFPALSCEFASLDVSDVLCGTRNRLN----LTKTVRKFSI  
T.cacaoPDI-C 55 STSVIVDKSSDGDYLRIDFNISFPALSCEFASVDVSDVLCGTRNRLN----LTKTVRKFSI  
P.trichocarpaPDI-C1 55 STTVIVDQSSDGEFLRIDFNISFPALSCEFASVDVSDVLCGTRNRLN----LTKTVRKFSI  
P.trichocarpaPDI-C2 55 STSVIVDQSSDGEFLRIDFNISFPALSCEFASVDVSDVLCGTRNRLN----LTKTVRKFSI  
S.moellendorffiiPDI-C 55 TTNVVVDRSRDGEYLRIQFNISFPALSCEFASVDVSDALGTRNRYN----LTKTVRKFPPI  
P.patensPDI-C 55 STSVVVDRSRDGEYLRIQFNISFPALSCEFASVDVSDVLCGTHRFN----LTKTVRKFPPI  
C.reinhardtiiERV-A 58 AHELIVDVGGR-GEKLIHEDVTFPRVPCAWLSLDAMDISELHLD----LDHVVYKQRL  
V.carteriERV-A 60 VHELIVDVGGR-GEKLIHEDVTFPRVPCAWLSLDAMDISELHLD----LDHVVYKQRL  
C.subellipsoideaERV-A 56 TNELIVDVTTR-GEQLHINFDVTFPALPCSEWLSLDAMDISEMHLN----VDHVVYKQRL  
K.flaccidumERV-A 56 VNELIVDVTTR-GEQLHINFDVTFPALPCSEWLSLDAMDVSGEQHLD----LREHDIKRRRL  
B.distachyonERV-A3 56 ETKLVVDTSR-GERLRVNFDTFFPSTPCTLLSVDTRDISCEQHHD----LREHDIKRRRL  
O.sativaERV-A3 56 ETKLVVDTSR-GERLRVNFDTFFPSTPCTLLSVDTRDISCEQHHD----LREHDIKRRRL  
Z.maysERV-A3 56 ETKLVVDTSR-GERLRVNFDTFFPSTPCTLLSVDTRDISCEQHHD----LREHDIKRRRL  
Z.maysERV-A2 56 ETKLVVDTSR-GERLRVNFDTFFLSTPCTLLSVDTRDISCEQHHD----LREHDIKRRRL  
S.bicolorERV-A3 56 ETKLVVDTSR-GERLRVNFDTFFPSTPCTLLSVDTRDISCEQHHD----LREHDIKRRRL  
P.patensERV-A1 57 ANDLVVDTSR-GGTQLINLDVTFPALACSVVSLDAMDISEAHLD----VREHDIKRRRL  
P.patensERV-A4 55 QNQLVVDTSR-GETQLINLDITFPALACSVVSLDAMDISEQHLD----VREHDIKRRRL  
P.patensERV-A2 55 QNQLVVDTSR-GETQLINLDITFPALACSVVSLDAMDISEQHLD----VREHDIKRRRL  
P.patensERV-A3 55 QNQLVVDTSR-GETQLINLDITFPALACSVVSLDAMDISELHLD----VREHDIKRRRL  
S.bicolorERV-A2 55 ESKLVVDTSR-GERLHINFDVTFPALPCSLVAVDTMDVSGEQHYD----LREHDIKRRRL  
B.distachyonERV-A2 55 ESKLVVDTSR-GERLHINFDVTFPALPCSLVAVDTMDVSGEQHYD----LREHDIKRRRL  
O.sativaERV-A2 55 DSKLVVDTSR-GERLHINFDVTFPALPCSLVAVDTMDVSGEQHYD----LREHDIKRRRL  
S.moellendorffiiERV-A 55 TSELIVDTSR-GETQLINFDITFPALACSVVSLDAMDVSGEQHLD----VREHDIKRRRL  
C.sativusERV-A3 56 ETQLVVDTSR-GGELHINFDVTFPALPCSLVAVDTMDVSGEQHLD----LREHDIKRRRL  
M.truncatulaERV-A2 56 ESKLVVDTSR-GETLHINFDVTFPAVRCVLSLDAMDISEQHLD----LREHDIKRRRL  
P.vulgarisERV-A2 56 ESTLVVDTSR-GDTLHINFDVTFPAVRCVLSLDAMDISEQHLD----LREHDIKRRRL  
G.maxERV-A3 56 ESKLVVDTSR-GDTLHINFDVTFPAVRCVLSLDAMDISEQHLD----LREHDIKRRRL  
G.maxERV-A4 56 ESKLVVDTSR-GDTLHINFDVTFPAVRCVLSLDAMDISEQHLD----LREHDIKRRRL  
S.lycopersicumERV-A2 56 ETQLVVDTSR-GGKLIHFDITFPALPCVLSLDAMDISEEHFD----LREHDIKRRRL  
S.tuberosumERV-A2 56 ETQLVVDTSR-GGKLIHFDITFPALPCVLSLDAMDISEEHFD----LREHDIKRRRL  
P.persicaERV-A2 56 ESKLVVDTSR-GETLHINFDVTFPALPCVLSLDAMDISEEHFD----LREHDIKRRRL  
T.cacaoERV-A2 56 ETKLVVDTSR-GERLRINFDVTFPALPCVLSLDAMDISEQHLD----LREHDIKRRRL  
P.trichocarpaERV-A3 56 ETKLVVDTSR-GQTLRINFDITFPALPCVLSLDAMDISEQHHD----LREHDIKRRRL  
P.trichocarpaERV-A4 56 ETKLVVDTSR-GQSLRINFDVTFPALPCVLSLDAMDISEQHLD----LREHDIKRRRL  
C.sativusERV-A1 56 ETKLVVDTSR-GERLHINFDVTFPALPCVLSLDAMDISEQHLD----LREHDIKRRRL  
V.viniferaERV-A2 56 ETKLVVDTSR-GGTLRINFDVTFPALPCVLSLDAMDISEQHHD----LREHDIKRRRL  
B.rapaERV-A4 52 ESHLRVDTSR-GEKLRINFDVTFPALQCSIISIDTMDISGERHLD----VREHDIKRRRL  
B.rapaERV-A3 52 ETQLRVDTSR-GEKLRINFDVTFPALQCSIISIDTMDISGERHLD----VREHDIKRRRL  
E.salsugineumERV-A2 56 ETQLRVDTSR-GEKLRINFDVTFPALQCSIISIDTMDISGERHLD----VREHDIKRRRL

-----> BLOCK#2 ----->

A.thalianaERV-A2	56	ETQLRVDTSR	GEKLRINFDVTFPPALQCSIIISLDSMDISGERHLD	-----VRHDIIKRRL
C.rubellaERV-A2	56	ETQLRVDTSR	GEKLRINFDVTFPPALQCSIIISLDSMDISGERHLD	-----VRHDIIKRRL
B.rapaERV-A2	56	ESQLRVDTSR	GEKLRINFDATFPALACSIIISLDSMDISGEQHLD	-----VRHDMSKRRL
E.salsugineumERV-A3	56	ESQLRVDTSR	GEKLRINFDVTFPPALACSIIISLDSMDISGEQHLD	-----VRHDIKRRRL
B.distachyonERV-A1	56	ETTLRVDTSR	GETLRLINFDITFPALQCSIIISIDVMDISGEHLD	-----VKHDVFKQRI
O.sativaERV-A1	56	ETTLRVDTSR	GETLRLINFDVTFPPALQCSIIISLDAMDISGEHLD	-----VKHDIKQRI
S.bicolorERV-A1	56	ETTLRVDTSR	GETLRLINFDVTFPPALQCSIIISLDAMDISGEHLD	-----VKHDVFKQRI
Z.maysERV-A1	56	ETTLRVDTSR	GETLRLINFDVTFPPALQCSIIISLDAMDISGEHLD	-----VKHDVFKQRI
S.lycopersicumERV-A1	56	ETKLIVDTSR	GETLRLINFDITFPALPCSIIISVDAMDISGEQHLD	-----VRHDIKRRRL
S.tuberosumERV-A1	56	ETKLIVDTSR	GETLRLINFDITFPALPCSIIISVDAMDISGEQHLD	-----VRHDIKRRRL
B.rapaERV-A1	56	ETKLIVDTSR	GETLRLINFDITFPALACSIIISVDAMDISGELHLD	-----VKHDVFKRRL
E.salsugineumERV-A1	56	ETKLIVDTSR	GETLRLINFDITFPALACSIIISVDAMDISGELHLD	-----VKHDIKRRRL
A.thalianaERV-A1	56	ETKLIVDTSR	GETLRLINFDITFPALACSIIISVDAMDISGELHLD	-----VKHDIKRRRL
C.rubellaERV-A1	56	ETKLIVDTSR	GETLRLINFDITFPALACSIIISVDAMDISGELHLD	-----VKHDIKRRRL
V.viniferaERV-A1	56	ETKLIVDTSR	GETLRLINFDVTFPPALPCSIIISLDAMDISGEQHLD	-----VRHDIKRRRL
C.sativusERV-A2	56	ETKLIVDTSR	GETLRLINFDVTFPPALPCSIIISLDAMDISGEQHLD	-----VKHDIKRRRL
M.truncatulaERV-A1	56	ETKLIVDTSR	GETLRLINFDVTFPPALACSIIISLDAMDISGEQHLD	-----VRHDIKRRRL
P.persicaERV-A1	56	ETKLIVDTSR	GETLRLINFDVTFPPALPCSIIISLDAMDISGEQHLD	-----VKHDIKRRRL
P.vulgarisERV-A1	56	ETKLIVDTSR	GETLRLINFDVTFPPALPCSIIISLDAMDISGEQHLD	-----VKHDIKRRRL
G.maxERV-A1	56	ETKLIVDTSR	GETLRLINFDVTFPPALPCSIIISLDAMDISGEQHLD	-----VKHDIKRRRL
G.maxERV-A2	56	ETKLIVDTSR	GETLRLINFDVTFPPALPCSIIISLDAMDISGEQHLD	-----VKHDIKRRRL
T.cacaoERV-A1	56	ETKLIVDTSR	GETLRLINFDVTFPPALACSIIISLDAMDISGEQHLD	-----VRHDIKRRRL
P.trichocarpaERV-A1	56	ETKLIVDTSR	GETLRLINFDVTFPPALPCSIIISLDAMDISGEQHLD	-----VKHDIKRRRL
P.trichocarpaERV-A2	56	ETKLIVDTSR	GETLRLINFDVTFPPALPCSIIISLDAMDISGEQHLD	-----VKHDIKRRRL
C.reinhardtiiERV-B	55	VTVLSVDLAR	RHALTINLDTTFPSVPCAVLSIDVLDISCTAENDASFAHMRVHKRRL	
V.carteriERV-B	53	VTQMSVDLAR	RNALTTINIDITFPALPCAVLSIDVLDIAGTAENDASYAHMHHTKRL	
C.subellipsoideaERV-B	54	IQTMSVDTSR	AHYLRMNFNTYPSMPCQVLSLDATDMSCGKSGSGHAANGEIHKVRL	
K.flaccidumERV-B	56	ENEMTVDVKRG	REKLPPIHINITFPSPVLSLDAIDMSGKHEVD	-----ISNNIWKARL
P.patensERV-B	57	VHEMSVDVLR	GETLPIHINMTFPALPCEVLSLDAIDMSGKHEVD	-----DTNIWKRL
S.moellendorffiiERV-B	53	VHQM SVDLKR	GETLPIHINITFPSPVLSLDAIDMSGKHEVD	-----DTNIWKRL
S.bicolorERV-B	55	VHQM SVDLKR	GETLPIHINMTFPALPCEVLSLDAIDMSGKHEVD	-----HTNIWKRL
Z.maysERV-B	55	VHQM SVDLKR	GETLPIHINMTFPALPCEVLSLDAIDMSGKHEVD	-----HTNIWKRL
B.distachyonERV-B	55	VHQM SVDLKR	GETLPIHINMTFPALPCEVLSLDAIDMSGKHEVD	-----HTNIWKRL
O.sativaERV-B	55	VHQM SVDLKR	GETLPIHINMTFPALPCEVLSLDAIDMSGKHEVD	-----HTNIWKRL
B.rapaERV-B2	55	VHQM SVDLKR	GETLPIHVNM TFPALPCDVLSMDAIDMSGKHEVD	-----DTNIWKRL
B.rapaERV-B1	55	VHQM SVDLKR	GETLPIHVNM TFPALPCDVLSMDAIDMSGKHEVD	-----DTNIWKRL
E.salsugineumERV-B	55	VHQM SVDLKR	GETLPIHVNM TFPALPCDVLSMDAIDMSGKHEVD	-----DTNIWKRL
A.thalianaERV-B	55	VHQM SVDLKR	GETLPIHVNM TFPALPCDVLSMDAIDMSGKHEVD	-----DTNIWKRL
C.rubellaERV-B	55	VHQM SVDLKR	GETLPIHVNM TFPALPCDVLSMDAIDMSGKHEVD	-----DTNIWKRL
M.truncatulaERV-B	55	VHQM SVDLKR	GETLPIHINMTFPALPCDVLSMDAIDMSGKHEVD	-----DTNIWKRL
P.vulgarisERV-B	55	VHQM SVDLKR	GETLPIHINMTFPALPCDVLSMDAIDMSGKHEVD	-----DTNIWKRL
G.maxERV-B1	55	VHQM SVDLKR	GETLPIHINMTFPALPCDVLSMDAIDMSGKHEVD	-----DTNIWKRL
G.maxERV-B2	55	VHQM SVDLKR	GETLPIHINMTFPALPCDVLSMDAIDMSGKHEVD	-----DTNIWKRL
C.sativusERV-B	55	VHQM SVDLKR	GETLPIHINMTFPALPCDVLSMDAIDMSGKHEVD	-----DTNIWKRL
S.lycopersicumERV-B1	55	VHQM SVDLKR	GETLPIHINMTFPALPCDVLSMDAIDMSGKHEVD	-----DTNIWKRL
S.tuberosumERV-B1	55	VHQM SVDLKR	GETLPIHINMTFPALPCDVLSMDAIDMSGKHEVD	-----DTNIWKRL
S.lycopersicumERV-B2	55	VHQM SVDLKR	GETLPIHINMTFPALPCDVLSMDAIDMSGKHEVD	-----DTNIWKRL
S.tuberosumERV-B2	55	VHQM SVDLKR	GETLPIHINMTFPALPCDVLSMDAIDMSGKHEVD	-----DTNIWKRL
P.persicaERV-B	55	VHQM SVDLKR	GETLPIHINMTFPALPCDVLSMDAIDMSGKHEVD	-----DTNIWKRL
P.trichocarpaERV-B1	55	VHQM SVDLKR	GETLPIHINMTFPALPCDVLSMDAIDMSGKHEVD	-----DTNIWKRL
P.trichocarpaERV-B2	55	VHQM SVDLKR	GETLPIHINMTFPALPCDVLSMDAIDMSGKHEVD	-----DTNIWKRL
V.viniferaERV-B	55	VHQM SVDLKR	GETLPIHINMTFPALPCDVLSMDAIDMSGKHEVD	-----DTNIWKRL
T.cacaoERV-B	55	VHQM SVDLKR	GETLPIHINMTFPALPCDVLSMDAIDMSGKHEVD	-----DTNIWKRL

C.subellipsoideaPDI-C	111	---EDGQRAC---YV-----HDDSNVDK---YDE-----
C.reinhardtiiPDI-C	112	LDMRQGAAWEDTAH-----KVGPKYDAEGHFDEEPD-----
V.carteriPDI-C	111	---TELERMC---SAV-----EDSSHKPGPK---YDE-----
K.flaccidumPDI-C	111	---DHAGRTG---PEFHIIAHTVREPAHDDPAPDPD---EGAAEMEAKERQLAEGGQPP
B.rapaPDI-C1	110	---DPLKTTG---EEF-----HSGHGSHDN---HGE-----
B.rapaPDI-C2	110	---DPLKATG---GEF-----HSGASHHN---HGE-----
E.salsugineumPDI-C1	110	---DPLRRTG---AEF-----HSGALHDN---HGE-----
A.thalianaPDI12	110	---DPLRSTG---AEF-----HSGALHNN---HGE-----
C.rubellaPDI-C1	110	---DPLRSTG---AEF-----HSGHTLHNN---HGE-----
B.rapaPDI-C5	110	---DPLRDTG---EEY-----HPTPDSDLN---HGD-----
A.thalianaPDI13	110	---DPLRATA---EEF-----HSTSDLHLN---HGD-----
C.rubellaPDI-C3	110	---DPLRATG---TEF-----HSTSGLHLN---HGD-----
B.rapaPDI-C6	110	---DPYLRATG---AEV-----HSTSGLHLN---HGD-----
E.salsugineumPDI-C3	110	---DAHLRATG---AEF-----HSTTGLDLN---HGD-----
S.bicolorPDI-C	110	---DRNFVPTG---SEF-----HGPCIPTVNK---HGD-----
Z.maysPDI-C	110	---DRNLVPTG---SEF-----HGPCIPILNK---HGD-----
B.distachyonPDI-C	110	---DRNLVPTG---SEF-----HGPCIPTVNK---HGD-----
O.sativaPDI-C	110	---DRNLVPTG---SEF-----HGPCIPTVSK---HGD-----
B.rapaPDI-C4	110	---DSNLRPTG---SEF-----HSGEFLSRN---HGD-----
A.thalianaPDI7	110	---DSNMRPTG---SEF-----HAGEVLSLN---HGD-----
C.rubellaPDI-C2	110	---DSNMRPTG---AEF-----HAGEVLSLN---HGD-----
B.rapaPDI-C3	110	---DSNLRPTG---SEF-----HSGEVLSHN---HDE-----
E.salsugineumPDI-C2	110	---DSNLRPTG---TEF-----HSGEVLSLN---HGD-----
S.lycopersicumPDI-C	110	---DKNLRPTG---SEF-----HSGSTATELK---HDA-----
S.tuberosumPDI-C	110	---DKNLRPTG---SEF-----HSGSTATELK---HDA-----
M.truncatulaPDI-C1	110	---DSNLRPTG---SEF-----YLRPSTNVK---HDD-----
P.vulgarisPDI-C1	110	---DSNLRSTG---NEF-----HSEPTTNNK---HDN-----
G.maxPDI-C1	110	---DSNLRPTG---AEF-----HSEPAANSK---HDN-----
G.maxPDI-C2	110	---DSNLRPTG---AEF-----HSEPAANSK---HDN-----
M.truncatulaPDI-C2	110	---DSKLRPTG---SEF-----HSGTIANAVK---HDD-----
P.vulgarisPDI-C2	110	---DShLRPTG---AEF-----HSGAVSNAVK---HDD-----
G.maxPDI-C3	110	---DSNLRPTG---AEF-----HSGTVANAVK---HDD-----
G.maxPDI-C4	110	---DSNLRPTG---AEF-----HSGTVANAVK---HDD-----
V.viniferaPDI-C	110	---DPDLRPTG---AEF-----HSGPVGKVK---HGD-----
C.sativusPDI-C	110	---DSNLRSTG---SEF-----HSGPLSNLK---HGD-----
P.persicaPDI-C	110	---GPDLKPTG---SEF-----HSGPAFHDK---HGD-----
T.cacaoPDI-C	110	---DPhLRSTG---AEF-----HAGVPVPHK---HGD-----
P.trichocarpaPDI-C1	110	---DHDLKPTG---SEF-----HSGPVLHQK---HGD-----
P.trichocarpaPDI-C2	110	---DHDLKPTG---SEF-----HSGPVLHNN---HGD-----
S.moellendorffiiPDI-C	110	---DPNLKIVG---PEF-----HGPCIPNPTS---HGD-----
P.patensPDI-C	110	---DPLLQRTG---QEF-----HAGSVPNIKS---HGD-----ED
C.reinhardtiiERV-A	112	---NANGSPVKEVE-----KHNVDATKKK---PPS-----AVNATASA
V.carteriERV-A	114	---SANGSPVKEVE-----KHNVEATKKV---VPV-----
C.subellipsoideaERV-A	110	---DSNGVVIP---DSI-----EKHQVGPEID---DTL-----
K.flaccidumERV-A	110	---SPEGKPI---DVGT-----KDEHGGPKVQTGEVKVK
B.distachyonERV-A3	110	---NSHGNVIE---SR-----KEGIGGAKIE---RPL-----
O.sativaERV-A3	110	---DAHGNVIE---AR-----KEGIGGAKIE---SPL-----
Z.maysERV-A3	110	---NSHGNVIE---AR-----KEGIGGAKIE---RPL-----
Z.maysERV-A2	110	---DAHGNVIE---AR-----KVSIGGAKIE---RPL-----
S.bicolorERV-A3	110	---DSHGNVIE---AR-----KEGIGGAKIE---RPL-----
P.patensERV-A1	111	---DVNGKVI---EPAR-----QESLNQPKD---KPL-----
P.patensERV-A4	109	---DVHGKAV---DAPK-----PDATNAPKVQ---RPL-----
P.patensERV-A2	109	---DVHGKAV---NAPK-----PDATNAPKVQ---KPL-----
P.patensERV-A3	109	---DVHGKAV---DAPK-----PDATNAPKVQ---KPL-----
S.bicolorERV-A2	109	---DHLGNVIE---SR-----KDRVIGAPKIE---RPL-----
B.distachyonERV-A2	109	---DHLGNVIE---SR-----KDGVGSPKIE---RPL-----
O.sativaERV-A2	109	---DNLGNVIE---SR-----KDGVGAPKIE---RPL-----
S.moellendorffiiERV-A	109	---DPSGKVVQ---PPV-----QEDHGGPKID---KPL-----
C.sativusERV-A3	110	---DHLGTVIE---AR-----PDGIGAPKIE---KPL-----
M.truncatulaERV-A2	110	---DANGKVI---ER-----KEGIGAPKIE---RPL-----
P.vulgarisERV-A2	110	---DANGNVIE---ER-----KDGIGAPKIE---RPL-----
G.maxERV-A3	110	---DANGNVIE---ER-----KDGIGAPKIE---RPL-----
G.maxERV-A4	110	---DANGNVIE---ER-----KDGIGAPKIE---RPL-----
S.lycopersicumERV-A2	110	---DSHGAVIE---VR-----QDGIIGAPKIE---KPL-----
S.tuberosumERV-A2	110	---DSHGAVIE---VR-----QDGIIGAPKIE---KPL-----
P.persicaERV-A2	110	---DAHGNVIE---AK-----KDGIGAPKID---NPL-----
T.cacaoERV-A2	110	---NAHGDVIE---SR-----QDGIIGAPKIE---KPL-----
P.trichocarpaERV-A3	110	---NAHGDVIE---VR-----QDGIIGAPKID---KPL-----
P.trichocarpaERV-A4	110	---NAHGDVIE---VR-----QEGIGAPKID---RPL-----
C.sativusERV-A1	110	---DYQGNVID---SR-----PDGIGSTEIE---RPL-----
V.viniferaERV-A2	110	---DAHGNVIA---VR-----QDGIIGPQIE---KPL-----
B.rapaERV-A4	106	---DSHGNVIE---AK-----QGGIGHTKIE---KPL-----
B.rapaERV-A3	106	---DSHGNVIE---SK-----QDGIIGHTKIE---KPL-----
E.salsugineumERV-A2	110	---DSHGNVIE---AK-----QDGIIGHTKIE---KPL-----

A.thalianaERV-A2	110	---	DSSGNVIE-AK	-----	QDGI	GHTKIE	---	KPL	-----
C.rubellaERV-A2	110	---	DSTGNVIE-AK	-----	QDGI	GHTKIE	---	KPL	-----
B.rapaERV-A2	110	---	DAYGNVIE-TR	-----	QDGI	GHTKIE	---	NPL	-----
E.salsugineumERV-A3	110	---	DSSGNVIE-TR	-----	QDGI	GHTKIE	---	NPL	-----
B.distachyonERV-A1	110	---	DANGNVIA-TK	-----	QDAV	GGMKVE	---	KPL	-----
O.sativaERV-A1	110	---	DVHGNVIA-TK	-----	QDAV	GGMKVE	---	QPL	-----
S.bicolorERV-A1	110	---	DAHGNVIA-TR	-----	QDAV	GGMKVE	---	APL	-----
Z.maysERV-A1	110	---	DAHGNVIA-TR	-----	QDVV	GGMKVE	---	APL	-----
S.lycopersicumERV-A1	110	---	DVLGNVIE-TR	-----	KEGI	GSPTID	---	RPL	-----
S.tuberosumERV-A1	110	---	DVLGNVIE-TR	-----	KEGI	GSPTID	---	RPL	-----
B.rapaERV-A1	110	---	DSHGNTIE-SR	-----	QDGI	GAAKIE	---	KPL	-----
E.salsugineumERV-A1	110	---	DSHGNTIE-AR	-----	QDGI	GATKIE	---	NPL	-----
A.thalianaERV-A1	110	---	DSNGNTIE-AR	-----	QDGI	GATKIE	---	NPL	-----
C.rubellaERV-A1	110	---	DSNGNTIE-AR	-----	QDGI	GATKIE	---	KPL	-----
V.viniferaERV-A1	110	---	DAHGSVIE-AR	-----	QDGI	GSPKIE	---	KPL	-----
C.sativusERV-A2	110	---	DSHGNAIE-AR	-----	PDGI	GAPKIE	---	KPL	-----
M.truncatulaERV-A1	110	---	DSHGNVIE-TR	-----	QDGI	GSPNIE	---	KPL	-----
P.persicaERV-A1	110	---	DSHGNVIE-SR	-----	PDGI	GAPKIE	---	KPL	-----
P.vulgarisERV-A1	110	---	DSHGNVIE-TR	-----	QEGI	GAPKIE	---	KPL	-----
G.maxERV-A1	110	---	DSHGNVIE-TR	-----	QEGI	GAPKIE	---	KPL	-----
G.maxERV-A2	110	---	DSRGNVIE-TR	-----	QEGI	GAPKIE	---	KPL	-----
T.cacaoERV-A1	110	---	DAHGNVIE-SR	-----	QDGI	GAPKIE	---	KPL	-----
P.trichocarpaERV-A1	110	---	DFHGNVIE-AR	-----	QDGI	GAPKIE	---	KPL	-----
P.trichocarpaERV-A2	110	---	DSHGNVIE-SR	-----	QDGI	GAPKIE	---	KPL	-----
C.reinhardtiiERV-B	113	---	DKAGNITGKAIEY	-----	HTPQ	SQQIWD	---		-----
V.carteriERV-B	111	---	DGAGKPTGKAIEY	-----	HTPQ	SQQIWD	---	TGA	-----
C.subellipsoideaERV-B	112	---	NEAGEKIG	-----				LGE	-----
K.flaccidumERV-B	110	---	DSQGRPGI-WQQ	-----	VDKI		---	D	---
P.patensERV-B	111	---	HRDGYVLG-SEF	-----	VNDI	VEGEHR	---	KEE	-----
S.moellendorffiiERV-B	107	---	HKDGHILG-SEY	-----	LSDI	VEKEHA	---	HDN	-----
S.bicolorERV-B	109	---	DKYGHITG-TEY	-----	LSDI	VEKGHG	---		-----
Z.maysERV-B	109	---	DKYGHITG-TEY	-----	LSDI	VEKGHG	---		-----
B.distachyonERV-B	109	---	DKYGTITG-TEY	-----	LSDI	VEKE	---	HGA	-----
O.sativaERV-B	109	---	DKYGHITG-TEY	-----	LNDI	VEKE	---	HGT	-----
B.rapaERV-B2	109	---	NSHGHTIG-TEY	-----	ISDI	VEKEHD	---	HSS	-----
B.rapaERV-B1	109	---	NSHGHTIG-TEY	-----	ISDI	VEKEHD	---	HSS	-----
E.salsugineumERV-B	109	---	NSHGHTIG-TEY	-----	ISDI	VEKEHD	---	HST	-----
A.thalianaERV-B	109	---	NSHGHTIG-TEY	-----	ISDI	VEKGHE	---	HGH	-----
C.rubellaERV-B	109	---	NSHGHTIG-TEY	-----	ISDI	VEKGHE	---	HGH	-----
M.truncatulaERV-B	109	---	NSYGGITG-TEY	-----	ISDI	VEKGHEHDHD	---	HGT	-----
P.vulgarisERV-B	109	---	NSDGHITG-TEY	-----	ISDI	VEKG	---	HTH	-----
G.maxERV-B1	109	---	NSYGHITG-TEY	-----	ISDI	VEKE	---	HTN	-----
G.maxERV-B2	109	---	NSYGHITG-TEY	-----	ISDI	VEKEHT	---	HKK	-----
C.sativusERV-B	109	---	NSHGQITG-TEY	-----	LSDI	VEKE	---	HVD	-----
S.lycopersicumERV-B1	109	---	NSDGHITG-TEY	-----	LSDI	VEKE	---		-----
S.tuberosumERV-B1	109	---	NSDGHITG-TEY	-----	LSDI	VEKEHK	---	HDD	-----
S.lycopersicumERV-B2	109	---	NSDGHITG-TEY	-----	LSDI	VEKE	---	HEA	-----
S.tuberosumERV-B2	109	---	NSDGHITG-TEY	-----	LSDI	VEKE	---	HEV	-----
P.persicaERV-B	109	---	NSYGHITG-TEY	-----	LSDI	VEREHS	---		-----
P.trichocarpaERV-B1	109	---	NSYGHITG-TEY	-----	LSDI	VEKE	---	HEA	-----
P.trichocarpaERV-B2	109	---	NSHGHTIG-TEY	-----	LSDI	VEKE	---	HEA	-----
V.viniferaERV-B	109	---	NRDGFITG-TEY	-----	LSDI	VEKE	---	HAD	-----
T.cacaoERV-B	109	---	NSLGQIVG-TEY	-----	LSDI	VEKE	---	HAA	-----

C. subellipsoideaPDI-C	135	-----PSVSQDFALPLSKDSFKATLEA-YSIVVNFYAPWCPWCQRL	EPTWEAVTQEVHT
C. reinhardtiiPDI-C	144	-----IDITVPLSHENFEATLAR-YPIAVINFYAPWCHWCQRL	EPTWEAATKEVHD
V. carteriPDI-C	135	EGRFDDEPDIDITVPLSHVNF	EATLAR-YPIVVVNFYAPWCHWCQRL
K. flaccidumPDI-C	163	EGDPPPIKDPGGALPLSEAFD	TITKESFPIVMVNFYAPWCPWSQRL
B. rapaPDI-C1	134	---ETKEEIPDGSVPLVSSSF	DSFSKH-FPLLIVNFNAPWCYWSNRLKPSWEKASSI
B. rapaPDI-C2	134	---EIKQEPDGAIQLTNG	GFQSLSHH-FPLLIVNFNAPWCYWSNRLKPSWEKAATI
E. salsugineumPDI-C1	134	---ESKEEFPDGAIPLTS	SFESYSHH-FPILVNFYAPWCYWSNRLKPSWEKAANI
A. thalianaPDI12	134	---ETKEEFPDGAIPLTS	SFESLSSH-FPILVNFNAPWCYWSNRLKPSWEKAANI
C. rubellaPDI-C1	134	---ETKEEFPDGAIPLTS	SFESLSSH-FPILVNFNAPWCYWSNRLKPSWEKAANI
B. rapaPDI-C5	134	---EHHDDNTYAAIPLS	GGTFDKISHH-FPILVNFYAPWCYWSNRLKPSWEKAAEITRQ
A. thalianaPDI13	134	---EDHGDNSTYADIPLT	GAAF
C. rubellaPDI-C3	134	---EDHEENTYIDIPLT	GATFEKFKHH-FQILVNFYAPWCYWSNRLKPSWEKASQITRE
B. rapaPDI-C6	134	---EDHGNNTYAAIPLT	GATFDKFSHH-FQILVNFYAPWCYWSNRLKPSWEKAAEITRQ
E. salsugineumPDI-C3	134	---EDHHENNSYAAIPLT	GATFDKFSHH-FPILVNFYAPWCYWSNRLKPSWEKAAEITRQ
S. bicolorPDI-C	134	---DVEEDHVDGAFSLSSRN	DFDSFSHQ-YPVLVNFYAPWCYWSNRLKPSWEKAKI
Z. maysPDI-C	134	---DVEEDHVDGAFSLSSRN	DFDSFSHQ-YPVLVNFYAPWCYWSNRLKPSWEKAKI
B. distachyonPDI-C	134	---DVEEYHADGVALSSRN	DFDSFSHQ-YPILVNFYAPWCYWSNRLKPSWEKAKI
O. sativaPDI-C	134	---DVEENHDDGSVPLSSRN	DFDSFSHQ-YPVLVNFYAPWCYWSNRLKPSWEKAKI
B. rapaPDI-C4	134	---ESAEEVLVDGAFSLSSRN	DFDTFLHQ-YPIVNFYAPWCYWSNRLKPSWEKAKI
A. thalianaPDI7	134	---ETGEEIVEDSVPLT	GRNDFTFTHQ-FPILVNFYAPWCYWSNRLKPSWEKAKI
C. rubellaPDI-C2	134	---ETGEEVAEDSVSLT	GRNDFTFTHQ-FPILVNFYAPWCYWSNRLKPSWEKAKI
B. rapaPDI-C3	134	---AGEEVVEDSVSLT	SRNDFTLHQ-FPISVNFYAPWCYWSNRLKPSWEKAKI
E. salsugineumPDI-C2	134	---EAGEELVEDSVSLT	GRNDFTLHQ-FPISVNFYAPWCYWSNRLKPSWEKAKI
S. lycopersicumPDI-C	134	---EDDEEYGEVSVLN	GHSFDRVTHH-FPILVNFYAPWCYWSNRLKPSWEKAANI
S. tuberosumPDI-C	134	---EDDEEYGEVSVLN	GHSFDRVTHH-FPILVNFYAPWCYWSNRLKPSWEKAANI
M. truncatulaPDI-C1	134	---KVDDDESLEGAFVFTS	NNFDKYSHQ-FPITAVNFYAPWCYWSNRLKPSWEKAKI
P. vulgarisPDI-C1	134	---EQHEESIGGALELTT	DNFDKYAHQ-FPITVNFYAPWCYWSNRLKPSWEKAKI
G. maxPDI-C1	134	---EVNEESVEGVSVLKT	QNF
G. maxPDI-C2	134	---EVNEESVEGVSVLTT	QNF
M. truncatulaPDI-C2	134	---EVDTFDFVEGSLPLT	SQHF
P. vulgarisPDI-C2	134	---EVDGESVEGVSFLT	THNFDKYAHQ-FPITVNFYAPWCYWSNRLKPSWEKAKI
G. maxPDI-C3	134	---EVDEESVEGVSFLT	THNFDKYVHQ-FPVTIVNFYAPWCYWSNRLKPSWEKAKI
G. maxPDI-C4	134	---EVDEESVEGVSFLT	THNFDKYVHQ-FPITAVNFYAPWCYWSNRLKPSWEKAKI
V. viniferaPDI-C	134	---ETDEEYSEGSASLT	QNFYKYSHQ-HAILVNFYAPWCYWSNRLKPSWEKAANI
C. sativusPDI-C	134	---EVDEEANEGSVALT	TRNFDRYANQ-HPILVNFYAPWCYWSNRLKPSWEKAKI
P. persicaPDI-C	134	---GDEYGGDGSVIT	ARTFEKFTHQ-HPILVNFYAPWCYWSNRLKPSWEKAANI
T. cacaoPDI-C	134	---EVDEETVEGVSPLN	GVSF
P. trichocarpaPDI-C1	134	---EVDEEGEGSVSLKA	HNF
P. trichocarpaPDI-C2	134	---EVHEEGSEGSVSLKA	HNF
S. moellendorffiiPDI-C	134	-----DDHEGEGAHVLT	SSTFDEYARR-YSVLVNFYAPWCYWSNRLKPSWEKAKI
P. patensPDI-C	136	VGEDMFEHLGEGAVELN	KNTFDVYQQ-FSVLVNFYAPWCYWSNRLKPSWEKAKI
C. reinhardtiiERV-A	144	AAGGAPAGGAAGAAGAA	CGAAGGAGGG-ENATALANGCGS
V. carteriERV-A	138	-----NCTENSTATPV	-----CGSCYGAEDRQGDCCNTCEVRA
C. subellipsoideaERV-A	134	-----LHKAN	-----ETECGSCYGA-APDEECCNNSCEVRA
K. flaccidumERV-A	138	-----ESEGG	-----PAYCGSCYGAENAEDCCNTCEVRE
B. distachyonERV-A3	133	-----QKHGGRLD	---KG-----EQYCGTCYGAESDEQCCNSCEVRE
O. sativaERV-A3	133	-----QKHGGRLS	---KG-----EYCGTCYGAESDEQCCNSCEVRE
Z. maysERV-A3	133	-----QKHGGRLD	---KG-----EQYCGTCYGAESDEQCCNSCEVRE
Z. maysERV-A2	133	-----QKHGGRLD	---KG-----EQYCGTCYGAESDEQCCNSCEVRE
S. bicolorERV-A3	133	-----QKHGGRLD	---KG-----EQYCGTCYGAESDEQCCNSCEVRE
P. patensERV-A1	135	-----QKHGGRLE	---HN-----ETYCGSCYGAETDEQCCNSCEVRE
P. patensERV-A4	133	-----QKHGGRLE	---HN-----ETYCGSCYGAESSDDECCNSCEVRE
P. patensERV-A2	133	-----QKHGGRLE	---HN-----ETYCGSCYGAESSDDECCNSCEVRE
P. patensERV-A3	133	-----QKHGGRLE	---DH-----ETYCGSCYGAESSDQCCNSCEVRE
S. bicolorERV-A2	132	-----QKHGGRLD	---HN-----EYCGSCYGAETDDQCCNSCEVRE
B. distachyonERV-A2	132	-----QKHGGRLD	---HN-----EAYCGSCYGAESDDQCCNSCEVRE
O. sativaERV-A2	132	-----QKHGGRLD	---HN-----EYCGSCYGAESDDQCCNSCEVRE
S. moellendorffiiERV-A	133	-----QKHGGRLE	---HN-----ETYCGSCYGAEQSDDECCNSCEVRE
C. sativusERV-A3	133	-----QKHGGRLE	---HN-----ETYCGSCYGAESDDQCCNSCEVRE
M. truncatulaERV-A2	133	-----QKHGGRLE	---HD-----EKYCGSCYGAESDDHCCNSCEVRE
P. vulgarisERV-A2	133	-----QKHGGRLG	---HD-----EKYCGSCYGAETDEQCCNSCEVRE
G. maxERV-A3	133	-----QKHGGRLG	---HD-----EKYCGSCYGAESDEHCCNSCEVRE
G. maxERV-A4	133	-----QKHGGRLG	---HD-----EKYCGSCYGAESDEHCCNSCEVRE
S. lycopersicumERV-A2	133	-----QRHGGRL	---HN-----ETYCGSCYGAETADDECCNSCEVRE
S. tuberosumERV-A2	133	-----QRHGGRL	---HN-----ETYCGSCYGAETADDECCNSCEVRE
P. persicaERV-A2	133	-----QRHGGRL	---HN-----EKYCGSCYGAEMSDDDCCNSCEVRE
T. cacaoERV-A2	133	-----QRHGGRL	---HN-----ETYCGSCYGAEQSDDDCCNSCEVRE
P. trichocarpaERV-A3	133	-----QKHGGRLE	---HN-----EYCGSCYGAEMSDHCCNSCEVRE
P. trichocarpaERV-A4	133	-----QSHGGRLG	---HN-----EYCGSCYGAEMSHDDCCNTCEVRE
C. sativusERV-A1	133	-----QKHGGRLK	---QN-----ETYCGSCYGAESG-EDCCNSQDVE
V. viniferaERV-A2	133	-----QRHGGRL	---HN-----EKYCGSCYGAETDDCCNSCEVRE
B. rapaERV-A4	129	-----QKHGGRL	---DN-----EKYCGSCYGAETDDACCNSCEVRE
B. rapaERV-A3	129	-----QKHGGRL	---HN-----ETYCGSCYGAETDDTCCNSCEVRE
E. salsugineumERV-A2	133	-----QKHGGRL	---HN-----ETYCGSCYGAEMTDEACCNSCEVRE

A.thalianaERV-A2	133	-----QKHGGRL	HN	-----ETYCGSCFGAEAS	DDACCNSCEEVRE
C.rubellaERV-A2	133	-----QKHGGRL	HN	-----ETYCGSCFGAELS	DDACCNSCEEVRE
B.rapaERV-A2	133	-----QKHGGRL	HN	-----ETYCGSCYGAEAS	DDECCNSCEEVRE
E.salsugineumERV-A3	133	-----QRHGGRL	HN	-----ETYCGSCYGAEAT	DDECCNSCEEVGE
B.distachyonERV-A1	133	-----QMHHGRL	HN	-----ETYCGSCYGAEEP	GEQCCNSCEDVRE
O.sativaERV-A1	133	-----QRHGGRL	HN	-----ETYCGSCYGAEES	DEQCCNSCEDVRE
S.bicolorERV-A1	133	-----QHHGGRL	HN	-----ETYCGSCYGAQES	DGQCCNSCEDVRE
Z.maysERV-A1	133	-----QHHGGRL	HN	-----ETYCGSCYGAQES	DDQCCNTCEDVRE
S.lycopersicumERV-A1	133	-----QRHGGRL	HN	-----ETYCGSCYGAEGS	DDHCCNTCEDVRE
S.tuberosumERV-A1	133	-----QRHGGRL	HN	-----ETYCGSCYGSEGS	DDHCCNTCEDVRE
B.rapaERV-A1	133	-----QKHGGRL	HN	-----ETYCGSCYGAEAE	EHDCCNSCEDVRE
E.salsugineumERV-A1	133	-----QKHGGRL	HK	-----ETYCGSCYGAEAE	EHDCCNSCEDVRE
A.thalianaERV-A1	133	-----QKHGGRLG	HN	-----ETYCGSCYGAEAE	EHDCCNSCEDVRE
C.rubellaERV-A1	133	-----QKHGGRL	HN	-----ETYCGSCYGAEAE	EHDCCNSCEDVRE
V.viniferaERV-A1	133	-----QRHGGRL	HN	-----ETYCGSCYGAEAS	DDCCNNCEVRE
C.sativusERV-A2	133	-----QRHGGRL	HN	-----ETYCGSCFGAESAD	DDCCNSCEEVRE
M.truncatulaERV-A1	133	-----QRHGGRL	HN	-----ETYCGSCYGAEAS	DDECCNSCEEVRE
P.persicaERV-A1	133	-----QRHGGRL	HN	-----ETYCGSCYGAEAA	DEDCCNSCEDVRE
P.vulgarisERV-A1	133	-----QRHGGRL	HN	-----ETYCGSCFGAEAS	DDCCNSCEDVRE
G.maxERV-A1	133	-----QRHGGRL	HN	-----ETYCGSCYGAEES	DDCCNSCEDVRE
G.maxERV-A2	133	-----QRHGGRL	HN	-----ETYCGSCYGSEVS	DDCCNSCEDVRE
T.cacaoERV-A1	133	-----QRHGGRL	HN	-----ETYCGSCYGAEAS	DDCCNSCEDVRE
P.trichocarpaERV-A1	133	-----QRHGGRL	HN	-----ETYCGSCYGAEAS	DEDCCNSCEDVRE
P.trichocarpaERV-A2	133	-----QRHGGRL	HN	-----ETYC-----	DEDCCNSCEEVRE
C.reinhardtiiERV-B	135	-----TGCQQL		-----VSVNIQ	EAMOHLDVDMED
V.carteriERV-B	136	-----EQLVSVNIQ	EA	-----	MOHLVDMED
C.subellipsoideaERV-B	123	-----		-----YIPRRRWGFMGKP	-RQEVMEVNO
K.flaccidumERV-B	130	-----TAHNEAHA	EDT	-----TEHDFALANARRAAQADANKQVED	IKAKA
P.patensERV-B	135	-----PKADKKDE	HK	-----	DGDRKKDPQKVINEVKK
S.moellendorffiiERV-B	131	-----		-----LTGT	HSHEELRSVAVKVVNEINK
S.bicolorERV-B	130	-----AHHDHDHGQEHHD	HD	-----EQKKPEQTFNEEA	EAKMIKSVKQ
Z.maysERV-B	130	-----AHHDHDHD	HD	-----HHDEQKKHEQTFNEEA	EAKMIKSVKQ
B.distachyonERV-B	131	-----HHHDNGHE	HH	-----DEEKKPEHTFNEDADK	MVKSVRQ
O.sativaERV-B	131	-----HNHDHDHE	HE	-----DEQKKQEHTFNEDA	EAKMVKSVKQ
B.rapaERV-B2	133	-----HKHDEHKN		-----ETDALNLLGF	DEAAETMIKVKQ
B.rapaERV-B1	133	-----HKHDKKE	HK	-----NETEAVNTLGF	DEAAETMIKVKQ
E.salsugineumERV-B	133	-----HKHEHKNE		-----TEALNVLGF	DQAAETMIKVKQ
A.thalianaERV-B	133	-----SPHKHDKKE	HK	-----NETETEALNILGF	DQAAETMIKVKQ
C.rubellaERV-B	133	-----SSHKHDKKE	HK	-----NETEIE TLNSLGF	DQAAETMIKVKQ
M.truncatulaERV-B	137	-----HKHDDSKD	HH	-----EHSEQKVHLQTF	DEATEINTIKVKKE
P.vulgarisERV-B	131	-----HKHDDHKD	HD	-----EHSEQKIHLQNL	DESTENI IKVKKE
G.maxERV-B1	131	-----QEHDNDKDHHDH	HH	-----EHSEQKIHLQNL	DESTENI IKVKKE
G.maxERV-B2	133	-----HDDNKN	HE	-----HSEQKIHLQNL	DESTENI IKVKKE
C.sativusERV-B	131	-----HKHDDHDKKEKDH		-----PHIHGFDQAAENL	VKVKQ
S.lycopersicumERV-B1	128	-----HKHDDHKD	HH	-----DDSDNKTHMQGF	DQEAENLIKVKQ
S.tuberosumERV-B1	133	-----SDNKTH		-----MQGF	DQDAENLIKVKQ
S.lycopersicumERV-B2	131	-----HKHDVHKE	HH	-----EDSDKIHLQGI	DEESQNMIKVKQ
S.tuberosumERV-B2	131	-----HKHDHKE	HH	-----EDSDKIHLQGI	DEESQNMIKVKQ
P.persicaERV-B	130	-----HKHDDSKD	HH	-----EDKDQEIHLQGF	DQAAEDLIKRVKH
P.trichocarpaERV-B1	131	-----HNHDHNDK	HH	-----EDSHAKQHTHGF	DDAAETMVKVKQ
P.trichocarpaERV-B2	131	-----HNHDHDKD	HH	-----KDSHEEQHTHGF	DDAAETMIKVKQ
V.viniferaERV-B	131	-----HKHDHNDK	HH	-----GDSQKLHHSFDQDAEN	NMVKVKQ
T.cacaoERV-B	131	-----HKHDDEKE	HH	-----DDSDKLHALGF	DQEAENMIKVKQ

C. subellipsoideaPDI-C	189	KY-PDADGRIRFAKVDCTTEVDLCREHQITGFPSIRVFRSGHDEVNVHG	VKEHEHSYRGDR
C. reinhardtiiPDI-C	194	KY-PEWDRVRFVAKVDCTAEVDLCRQHFIQGFPSIRVFRKGHDDIYIG	MHEHEASYMGDR
V. carteriPDI-C	194	KY-PEWDRIRFAKVDCTQEMELCRTHFIQGFPSIRVFRKGHDDIYIG	MHEHEASYMGDR
K. flaccidumPDI-C	223	KYDQVNVNQIILLAKVDCTVEVALCRKHHVQGFPSIRIFRSGQDVR	AAQGHHDHESYGGDR
B. rapaPDI-C1	190	KYNPETDGRVLLGSVDCTEEAELCRNHHIQGYPSIRIFRKGSDLKED	HGHHEHESYGGDR
B. rapaPDI-C2	190	RYNPDTDGRVLLGSVDCTEFPALCRNHHIQGYPSIRIFRKGNDLKED	HGHHEHESYGGDR
E. salisugineumPDI-C1	190	RYPETDGRVLLGSVDCTEEAELCRNHHIQGYPSIRIFRKGSDLRED	HGHHEHESYGGDR
A. thalianaPDI12	190	RYPETDGRVLLGSVDCTEFPALCRNHHIQGYPSIRIFRKGSDLRED	HGHHEHESYGGDR
C. rubellaPDI-C1	190	KYDPETDGRVLLGSVDCTEFPALCRNHHIQGYPSIRIFRKGSDLRED	HGHHEHESYGGDR
B. rapaPDI-C5	190	KYGPENDGRVLLGSVDCTEETPLCTKYYHIQGYPSIRIFHNGSDLR	CDGHQEHDSYHGDR
A. thalianaPDI13	191	RYNPGTDDRVLGSDVCTEETPLCRNHHIQGYPSIRIFRKGSDLRED	HGHHEHESYGGDR
C. rubellaPDI-C3	190	RYPETDDRVLGSDVCTKESTLCKSNHHIQGYPSIRIFRKGSDLRDD	HGHHDHESYGGDR
B. rapaPDI-C6	190	RYNPETDGRVLLGSVDCTEETTLCKNHHIQGYPSIRIFRKGSDLKED	HGHHEHESYHGDR
E. salisugineumPDI-C3	191	KYDPEDDGRVLLGSVDCTEETPLCRNHHIQGYPSIRIFRKGSDLRED	HGHHEHESYGGDR
S. bicolorPDI-C	190	RYPEDMDGRILLGKVDCTEVEGLCRNHHIQGYPSIRVFRKSGDIKEN	QGHHDHESYGER
Z. maysPDI-C	190	RYPEDMDGRILLGKVDCTEVEGLCRNHHIQGYPSIRVFRKSGDIKEN	QGHHDHESYGER
B. distachyonPDI-C	190	RYPEDMDGRILLAKVDCTEVEGLCRNHHIQGYPSIRIFRKGSDMKEN	QGHHDHESYGER
O. sativaPDI-C	190	RYPEDMDGRILLAKVDCTEVEGLCRNHHIQGYPSIRIFRKGSDMKEN	QGHHDHESYGGDR
B. rapaPDI-C4	190	RYPEDMDGRVILAKVDCTEQEADLCRHHIQGYPSIRIFRKGSDLRDD	NAHHDHESYGGDR
A. thalianaPDI7	190	RYPEDMDGRVILAKVDCTEQEADLCRHHIQGYPSIRIFRKGSDLRDD	NAHHDHESYGGDR
C. rubellaPDI-C2	190	RYPEDMDGRVIVAKVDCTEQEADLCRHHIQGYPSIRIFRKGSDLRDD	NAHHDHESYGGDR
B. rapaPDI-C3	189	RYPEDMDGRVILAKVDCTEQEADLCRHHIQGYPSIRIFRKGSDLK	DNHHDHESYGGDR
E. salisugineumPDI-C2	190	RYPEDMDGRVILAKVDCTEQEADLCRHHIQGYPSIRIFRKGSDLRDD	NAHHDHESYGGDR
S. lycopersicumPDI-C	190	RYPEDMDGRILVAKVDCTEVEGLCRNHHIQGYPSIRIFRKGSDVRDD	HGHHDHESYGGDR
S. tuberosumPDI-C	190	RYPEDMDGRILVAKVDCTEVEGLCRNHHIQGYPSIRIFRKGSDVRDD	HGHHDHESYGGDR
M. truncatulaPDI-C1	190	RYPEDMDGRILLGKVDCTKEADLCRHHIQGYPSIRIFRKGSDVRS	DHGHHEHESYGGDR
P. trichocarpaPDI-C1	190	RYPEDMDGRIVMAKVDCTEQEADLCRHHIQGYPSIRIFRKGSDVRS	DHGHHDHESYGGDR
G. maxPDI-C1	190	RYPEDMDGRILLGRVDCTEDGDLCRSHHIQGYPSIRIFRKGSDVRS	SNHGHHDHESYGGDR
G. maxPDI-C2	190	RYPEDMDGRILLGRVDCTEDGDLCRSHHIQGYPSIRIFRKGSDVRS	DHGHHDHESYGGDR
M. truncatulaPDI-C2	190	RYPEDMDGRILLAKVDCTEQEADLCRHHIQGYPSIRIFRKGSDVRS	DHGHHEHESYGGDR
P. vulgarisPDI-C2	190	RYPEDMDGRILMGKVDCTEQEADLCRHHIQGYPSIRIFRKGSDLRSE	HGHHEHESYGGDR
G. maxPDI-C3	190	RYPEDMDGRILLAKVDCTEQEADLCRHHIQGYPSIRIFRKGSDLRSE	HGHHEHESYGGDR
G. maxPDI-C4	190	RYPEDMDGRILLAKVDCTEQEADLCRHHIQGYPSIRIFRKGSDLRSE	HGHHEHESYGGDR
V. viniferaPDI-C	190	RYPEDMDGRIVMAKVDCTEVEGLCRHHIQGYPSIRIFRKGSDVRDD	HGHHDHESYGGDR
C. sativusPDI-C	190	RYPEDMDGRILLAKVDCTEQEADLCRHHIQGYPSIRIFRKGSDVRDD	HGHHDHESYGGDR
P. persicaPDI-C	189	RYPEDMDGRILLAKVDCTEVEGLCRNHHIQGYPSIRIFRKGSDVRDD	HGHHDHESYGGDR
T. cacaoPDI-C	190	RYPEDMDGRILLAKVDCTEVEGLCRHHIQGYPSIRIFRKGSDLRDD	HGHHDHESYGGDR
P. trichocarpaPDI-C1	190	RYPEDMDGRILLAKVDCTEVEGLCRNHHIQGYPSIRIFRKGSDLRDD	HGRHDHESYGGDR
P. trichocarpaPDI-C2	190	RYPEDMDGRILLAKVDCTEVEGLCRNHHIQGYPSIRIFRKGSDLRDD	HGHHDHESYGGDR
S. moellendorffiiPDI-C	188	KYHPD-TGRILLGKVDCTDNNDLCRHHIQGFPSIRIFHKGHD	LKDEHGHHEHDSYGGDR
P. patensPDI-C	195	KYNPEMDGRILLAKVDCTVNVLECRSHHIQGYPSIRIFRKGSDVRDE	HGRHDHESYGGDR
C. reinhardtiiERV-A	203	AYRRKGWALSNDHTEQCAHDLYTEA-----	IKKQAGE-----
V. carteriERV-A	172	AYRRKGWALANVDHTEQCAHDLYTES-----	IKKQAGE-----
C. subellipsoideaERV-A	164	AYRRKGWGFDPQQLSQCAKEGFVEK-----	LKQAGE-----
K. flaccidumERV-A	169	AYRRKGWAFSNAELTEQCSREGFVEK-----	LKQAGE-----
B. distachyonERV-A3	169	AYKKKGWALTNPDLTDQCAREDFVER-----	VKTQAGE-----
O. sativaERV-A3	169	AYKKKGWALTNPDLTDQCAREDFVER-----	VKTQAGE-----
Z. maysERV-A3	169	AYKKKGWALTNPDLTDQCAREDFIDR-----	VKTQAGE-----
Z. maysERV-A2	169	AYKKKGWALTNPDLTDQCAREDFVER-----	VKTQAGE-----
S. bicolorERV-A3	169	AYKKKGWALTNPDLTDQCAREDFVER-----	VKTQAGE-----
P. patensERV-A1	171	AYRRKGWALNPNLTDQCKREGFVQK-----	IKDEAGE-----
P. patensERV-A4	169	AYRRKGWALINIDLTDQCHREGFIER-----	VKEEAGE-----
P. patensERV-A2	169	AYRRKGWALTADLTDQCHREGFIER-----	VKEEAGE-----
P. patensERV-A3	169	AYRRKGWALTNTDLTDQCHREGFIER-----	IKKEAGE-----
S. bicolorERV-A2	168	AYRRKGWALNPNLTDQCKREGFVQK-----	LKDEAGE-----
B. distachyonERV-A2	168	AYRRKGWALTNPDLTDQCKREGFVQK-----	LKDEAGE-----
O. sativaERV-A2	168	AYRRKGWALTNIETDQCKREGFVQK-----	LKDEAGE-----
S. moellendorffiiERV-A	169	AYRRKGWALHNADLTDQCKREGWLTQK-----	IKKEAGE-----
C. sativaERV-A3	169	AYRRKGWALTNPDLTDQCKREGFVQK-----	VKDEAGE-----
M. truncatulaERV-A2	169	AYRRKGWALTNDLTDQCKREGFVQK-----	VKDEAGE-----
P. vulgarisERV-A2	169	AYRRKGWALSNDLTDQCKREGFVQK-----	VKDEAGE-----
G. maxERV-A3	169	AYRRKGWAMTNDLTDQCKREGFVQK-----	VKDEAGE-----
G. maxERV-A4	169	AYRRKGWAMTNDLTDQCKREGFVQK-----	VKDEAGE-----
S. lycopersicumERV-A2	169	AYRRKGWMTNPDLTDQCKREGFVQK-----	IKDEAGE-----
S. tuberosumERV-A2	169	AYRRKGWMTNPDLTDQCKREGFVQK-----	IKDEAGE-----
P. persicaERV-A2	169	AYRRKGWALTADLTDQCKREGFVQK-----	IKDEAGE-----
T. cacaoERV-A2	169	AYRRKGWALTNDLTDQCKREGFVQK-----	VKDEAGE-----
P. trichocarpaERV-A3	169	AYRRKGWALTNDLTDQCKREGFVQK-----	IKDEAGE-----
P. trichocarpaERV-A4	169	AYRRKGWAMTNDLTDQCKREGFVQK-----	IKDEAGE-----
C. sativusERV-A1	167	AYRRKGWALSHPDLDQCKREGFVQK-----	VKDEAGE-----
V. viniferaERV-A2	169	AYRRKGWMTNPDLTDQCKREGFVQK-----	VKDEAGE-----
B. rapaERV-A4	165	AYRRKGWALSNDLTDQCKREGFVQK-----	VKDEAGE-----
B. rapaERV-A3	165	AYRRKGWALSNDLTDQCKREGFVQK-----	VKDEAGE-----
E. salisugineumERV-A2	169	AYRRKGWALSNDLTDQCKREGFVQK-----	VKDEAGE-----

A.thalianaERV-A2	169	AYRKKGWALSDPESIDQCKREGFVQK	-----	VKDEE	GE-----
C.rubellaERV-A2	169	AYRKKGWALSDPESIDQCKREGFVQK	-----	VKDEE	GE-----
B.rapaERV-A2	169	AYRKKGWAMTDPDIDQCKREGFVQK	-----	VKDEE	GE-----
E.salsugineumERV-A3	169	AYRKKGWAMSDPEIDQCKREGFVQK	-----	VKDEE	GE-----
B.distachyonERV-A1	169	AYRKKGWGVSNPDSIDQCKREGFLO	-----	IKDEE	GE-----
O.sativaERV-A1	169	AYRKKGWGVSNPDLIDQCKREGFLO	-----	IKDEE	GE-----
S.bicolorERV-A1	169	AYRKKGWGVSNPDLIDQCKREGFLO	-----	IKDEE	GE-----
Z.maysERV-A1	169	AYRKKGWGVSNPDLIDQCKREGFLO	-----	IKDEE	GE-----
S.lycopersicumERV-A1	169	AYRKKGWALTNPDELIDQCKREGFLEK	-----	IKDEE	GE-----
S.tuberosumERV-A1	169	AYRKKGWALTNPDELIDQCKREGFLEK	-----	IKDEE	GE-----
B.rapaERV-A1	169	AYRKKGWGVTNPDLIDQCKREGFLO	-----	VKDEE	GE-----
E.salsugineumERV-A1	169	AYRKKGWGVTNPDLIDQCKREGFLO	-----	VKDEE	GE-----
A.thalianaERV-A1	169	AYRKKGWGVTNPDLIDQCKREGFLO	-----	VKDEE	GE-----
C.rubellaERV-A1	169	AYRKKGWGVTNPDLIDQCKREGFLO	-----	VKDEE	GE-----
V.viniferaERV-A1	169	AYRKKGWAMSNPDLIDQCKREGFLO	-----	IKDEE	GE-----
C.sativusERV-A2	169	AYRKKGWALSNPDLIDQCKREGFLO	-----	IKDEE	GE-----
M.truncatulaERV-A1	169	AYRKKGWALSSPDSIDQCKREGFLE	-----	IKDEE	GE-----
P.persicaERV-A1	169	AYRKKGWALSNPDLIDQCKREGFLO	-----	IKDEE	GE-----
P.vulgarisERV-A1	169	AYRKKGWALSNPDLIDQCKREGFLO	-----	IKDEE	GE-----
G.maxERV-A1	169	AYRKKGWALSNPDLIDQCKREGFLO	-----	IKDEE	GE-----
G.maxERV-A2	169	AYRKKGWALSNPDLIDQCKREGFLO	-----	IKDEE	GE-----
T.cacaoERV-A1	169	AYRKKGWALSNPDLIDQCKREGFLO	-----	IKDEE	GE-----
P.trichocarpaERV-A1	169	AYRKKGWAVTNPDLIDQCKREGFLO	-----	IKDEE	GE-----
P.trichocarpaERV-A2	160	AYQKKGWAVTNPDLIDQCKREGFLO	-----	IKDEE	GE-----
C.reinhardtiiERV-B	158	EA-----	-----	DHHE	-----
V.carteriERV-B	156	EA-----	-----	DHHE	-----
C.subellipsoideaERV-B	146	AM-----	-----	DAHE	-----
K.flaccidumERV-B	168	AL-----	-----	ANQE	-----
P.patensERV-B	163	AI-----	-----	DDGE	-----
S.moellendorffiiERV-B	154	AL-----	-----	QDGE	-----
S.bicolorERV-B	165	AL-----	-----	GNGE	-----
Z.maysERV-B	165	AL-----	-----	GNGE	-----
B.distachyonERV-B	164	AL-----	-----	ENGE	-----
O.sativaERV-B	164	AM-----	-----	ENGE	-----
B.rapaERV-B2	164	AL-----	-----	ADGE	-----
B.rapaERV-B1	167	AL-----	-----	ADGE	-----
E.salsugineumERV-B	163	AL-----	-----	ADGE	-----
A.thalianaERV-B	171	AL-----	-----	ADGE	-----
C.rubellaERV-B	171	AL-----	-----	ADGE	-----
M.truncatulaERV-B	172	AL-----	-----	KNGE	-----
P.vulgarisERV-B	166	AI-----	-----	KNQE	-----
G.maxERV-B1	169	AL-----	-----	KNGE	-----
G.maxERV-B2	165	AL-----	-----	KNGE	-----
C.sativusERV-B	163	AL-----	-----	EAQ	-----
S.lycopersicumERV-B1	163	AL-----	-----	AHGE	-----
S.tuberosumERV-B1	156	AL-----	-----	AHGE	-----
S.lycopersicumERV-B2	165	AL-----	-----	ADGE	-----
S.tuberosumERV-B2	165	AL-----	-----	ADGE	-----
P.persicaERV-B	166	AI-----	-----	ANGE	-----
P.trichocarpaERV-B1	166	AL-----	-----	ANGE	-----
P.trichocarpaERV-B2	166	AL-----	-----	ANGE	-----
V.viniferaERV-B	166	AL-----	-----	ANGE	-----
T.cacaoERV-B	166	AL-----	-----	ANGE	-----



## BLOCK#3

C. subellipsoideaPDI-C	248	TQASLLAFADNLAPSAGQPHHYIRGV-----TRMAKTS	GCALSGF
C. reinhardtiiPDI-C	253	TKDALVAFADSLVPSAGQPHRKLGL-----SAAPKTP	GCNLAGF
V. carteriPDI-C	253	TKEALVAFADSLVPSAGQPHRKHAA-----SAAPKTP	GCNLAGF
K. flaccidumPDI-C	283	TEAAITQFADDLATGLQRAHALPGATAQQVPPWGMKDGRLRVVAKAPQSS	GCQIEGF
B. rapaPDI-C1	250	DTDSIVKMDVDELVAPIHPETHKLDLD-GIS-----NKTLLKHKAPVTG	GCRVEGY
B. rapaPDI-C2	250	DTESIVKMDVDELVAPIHPETHKLALDWGIS-----NDTAKLLKKAPVTG	GCRVEGY
E. salsugineumPDI-C1	250	DTDSIVKMDVDELVAPIHPETHKLALD-GIS-----NDTAKNKKAPVTG	GCRVEGY
A. thalianaPDI12	250	DTDSIVKMDVEGLVAPIHPETHKVALD-GKS-----NDTVKHLKKGKAPVTG	GCRVEGY
C. rubellaPDI-C1	250	DTKSIVKMDVDELVAPIHPETHKVALD-GKS-----NDTVKHLKKGKAPVTG	GCRVEGY
B. rapaPDI-C5	250	DTESLVKMDVEELLRPIKK-----FD-GTT-----NHAASRIRKAPVSG	GCRIEGY
A. thalianaPDI13	251	DTDSLVKMDVEELLKPIKKEDHKLALD-GKS-----DNAASTFKKAPVSG	GCRIEGY
C. rubellaPDI-C3	250	DTDSLVKMDVEELLKPIKKEDHKLALD-GKS-----ENAASTVKKAPVSG	GCRIEGY
B. rapaPDI-C6	250	DTESILKMDVEELLKPIKKEDHKLALD-GKT-----DNVVSGLKKGKAPVSG	GCRIVGY
E. salsugineumPDI-C3	251	DTESLLKMDVEELLKPIKKEDHKLPLD-GIS-----VNTASSIKKAPVSG	GCRIEGY
S. bicolorPDI-C	250	DTESLVAAMETYVANI PKEAHVLALD-DKS-----NKTADPAKRPAVSG	GCRIEGF
Z. maysPDI-C	250	DTESLVAAMETYVANI PKEAH-----ALE-DKS-----NKTVDPAKRPAVSG	GCRIEGF
B. distachyonPDI-C	250	DTDSLVAAMETYVGNL PKEAHVLALD-DKS-----NKTVDPAKRPAVSG	GCRVEGF
O. sativaPDI-C	250	DTESLVAAMETYVANI PKDAHVLALD-DKS-----NKTVDPAKRPAVSG	GCRIEGF
B. rapaPDI-C4	250	DTESLVKMDVIGLVEPIHLEPHKLALD-DKS-----GNASKTLKK-APSTG	GCRIEGY
A. thalianaPDI7	250	DTESLVKMDVSLVEPIHLEPHNLALD-DKS-----DNSSRTLKK-APSTG	GCRVEGY
C. rubellaPDI-C2	250	DTESLVKMDVSLVEPIHLEPHNLALD-DKS-----GNSSKTLKK-APSTG	GCRIEGY
B. rapaPDI-C3	248	DTESLVKMDVIGLVEPIHLEPHKLALD-DKS-----DNASKTLKK-APSTG	GCRIEGY
E. salsugineumPDI-C2	250	DTESLVKMDVIGLVEPIHLEPQLALD-DKS-----DNASKILKK-APSTG	GCRIEGY
S. lycopersicumPDI-C	250	DTDSLVKMDMEDLVAPIKLDSTITSD-NSS-----TKLETGLKRPAPVTG	GCRIEGF
S. tuberosumPDI-C	250	DTDSLVKMDMEDLVAPIKLDSTQMISSD-NSS-----TKLETGLKRPAPVTG	GCRIEGF
M. truncatulaPDI-C1	250	DTDSLVKTMENILASFPSEYKLALE-DKL-----NVTEDSKRPAPVSG	GCRIEGY
P. vulgarisPDI-C1	250	DTDSLVKTMENLVAASLPESQKSHSG-DKS-----NLASHIKRPAPVSG	GCRIEGY
G. maxPDI-C1	250	DTDSLVKTMENLVAASLPESQKLPLE-DKS-----DVAKNTERPAPVSG	GCRIDGY
G. maxPDI-C2	250	DTDSLVKTMENLVAASLPESQKLPLE-DKS-----NVATNTRKRPAPVSG	GCRIDGY
M. truncatulaPDI-C2	250	DTESLVKTMETLVAASLPESQHLALD-----DKSNGTKRPAPVSG	GCRVEGY
P. vulgarisPDI-C2	250	DTESLVEFMENLVTSLPTASQKPALE-DKS-----NATDNAKRPGPSAG	GCRIEGY
G. maxPDI-C3	250	DTESLVKFMEDLVTSLPTESQKLALE-DKS-----NAADNAKRPGPSAG	GCRVEGY
G. maxPDI-C4	250	DTESLVKFMEDLVTSLPTESQKLALE-DKS-----NASDNAKRPGPSAG	GCRVEGY
V. viniferaPDI-C	250	DTDTLVTTMETLVAPIPLESQRALD-NKS-----DSTADHIKRPAPRTG	GCRIEGF
C. sativusPDI-C	250	DTDSLVKTMEDLIAPLPAGSQKLALE-DKS-----NNETGNVKKRPAPVSG	GCRIEGY
P. persicaPDI-C	249	DTDSLVKTMETLVAPIPVEAQKLALE-GKS-----DNGTDNAKRPAVSG	GCRIEGY
T. cacaoPDI-C	250	DTESLVKTMEEELVAPIPLESQRALD-----DKSNITKRPAPKTG	GCRIEGY
P. trichocarpaPDI-C1	250	DTESLVKTMEEALVAPIAMESQRQALE-HKP-----ENATQHVKKRPAPVSG	GCRIEGY
P. trichocarpaPDI-C2	250	DTDSLVKTMEEGLVAPIAMESQRHALE-HKP-----ENATEHVKKRPAPVSG	GCRIEGY
S. moellendorffiiPDI-C	247	DTDSLVKAMEALVPKETT-----LALD-DKT-----NGTVKRPAPVSG	GCRIEGF
P. patensPDI-C	255	DTESLVAFMVELVPPATVDGKQFLEDKSSI-----TVNATIKRPAPKAG	GCRVEGF
C. reinhardtiiERV-A	236	-----	GCHMWGM
V. carteriERV-A	205	-----	GCHMWGM
C. subellipsoideaERV-A	197	-----	GCHMWGS
K. flaccidumERV-A	202	-----	GCNVYGY
B. distachyonERV-A3	202	-----	GCNVHGF
O. sativaERV-A3	202	-----	GCNVHGF
Z. maysERV-A3	202	-----	GCNVLGF
Z. maysERV-A2	202	-----	GCNVHGF
S. bicolorERV-A3	202	-----	GCNVHGF
P. patensERV-A1	204	-----	GCNVYGT
P. patensERV-A4	202	-----	GCNIYGK
P. patensERV-A2	202	-----	GCNIYGK
P. patensERV-A3	202	-----	GCNIYGK
S. bicolorERV-A2	201	-----	GCTIHGF
B. distachyonERV-A2	201	-----	GCNIHGF
O. sativaERV-A2	201	-----	GCSIHGF
S. moellendorffiiERV-A	202	-----	GCNIYGS
C. sativusERV-A3	202	-----	GCNIHGS
M. truncatulaERV-A2	202	-----	GCNIHGS
P. vulgarisERV-A2	202	-----	GCNIQGS
G. maxERV-A3	202	-----	GCNIQGS
G. maxERV-A4	202	-----	GCNIQGS
S. lycopersicumERV-A2	202	-----	GCNIHGS
S. tuberosumERV-A2	202	-----	GCNIHGS
P. persicaERV-A2	202	-----	GCNIHGS
T. cacaoERV-A2	202	-----	GCNIHGS
P. trichocarpaERV-A3	202	-----	GCNINGS
P. trichocarpaERV-A4	202	-----	GCNINGS
C. sativusERV-A1	200	-----	GCNIYGF
V. viniferaERV-A2	202	-----	GCNVYGF
B. rapaERV-A4	198	-----	GCNVHGF
B. rapaERV-A3	198	-----	GCNIHGF
E. salsugineumERV-A2	202	-----	GCNVHGF

## BLOCK#3

A.thalianaERV-A2	202	-----	GCNVHGF
C.rubellaERV-A2	202	-----	GCNIHGF
B.rapaERV-A2	202	-----	GCNIFGF
E.salsugineumERV-A3	202	-----	GCNIYGF
B.distachyonERV-A1	202	-----	GCNIYGF
O.sativaERV-A1	202	-----	GCNIYGF
S.bicolorERV-A1	202	-----	GCNIYGF
Z.maysERV-A1	202	-----	GCNIYGF
S.lycopersicumERV-A1	202	-----	GCNMYGF
S.tuberosumERV-A1	202	-----	GCNMYGF
B.rapaERV-A1	202	-----	GCNIYGF
E.salsugineumERV-A1	202	-----	GCNIYGF
A.thalianaERV-A1	202	-----	GCNIYGF
C.rubellaERV-A1	202	-----	GCNIYGF
V.viniferaERV-A1	202	-----	GCNIYGF
C.sativusERV-A2	202	-----	GCNIYGF
M.truncatulaERV-A1	202	-----	GCNVYGF
P.persicaERV-A1	202	-----	GCNIYGF
P.vulgarisERV-A1	202	-----	GCNVYGF
G.maxERV-A1	202	-----	GCNVYGF
G.maxERV-A2	202	-----	GCNVYGF
T.cacaoERV-A1	202	-----	GCNIYGF
P.trichocarpaERV-A1	202	-----	GCNIYGF
P.trichocarpaERV-A2	193	-----	GCNIYGF
C.reinhardtiiERV-B	164	-----	GCHVYGT
V.carteriERV-B	162	-----	GCHVYGT
C.subellipsoideaERV-B	152	-----	GCNIFGV
K.flaccidumERV-B	174	-----	GCRVYGH
P.patensERV-B	169	-----	GCNIFGV
S.moellendorffiiERV-B	160	-----	GCRVFGV
S.bicolorERV-B	171	-----	GCRVYGM
Z.maysERV-B	171	-----	GCRVYGM
B.distachyonERV-B	170	-----	GCRVYGM
O.sativaERV-B	170	-----	GCRVYGV
B.rapaERV-B2	170	-----	GCRVYGV
B.rapaERV-B1	173	-----	GCRVYGV
E.salsugineumERV-B	169	-----	GCRVYGV
A.thalianaERV-B	177	-----	GCRVYGV
C.rubellaERV-B	177	-----	GCRVYGV
M.truncatulaERV-B	178	-----	GCRVYGV
P.vulgarisERV-B	172	-----	GCRVYGV
G.maxERV-B1	175	-----	GCRVYGV
G.maxERV-B2	171	-----	GCRVYGV
C.sativusERV-B	169	-----	GCRVYGV
S.lycopersicumERV-B1	169	-----	GCRVYGV
S.tuberosumERV-B1	162	-----	GCRVYGV
S.lycopersicumERV-B2	171	-----	GCRVYGV
S.tuberosumERV-B2	171	-----	GCRVYGI
P.persicaERV-B	172	-----	GCQVFGV
P.trichocarpaERV-B1	172	-----	GCRVYGV
P.trichocarpaERV-B2	172	-----	GCRVYGV
V.viniferaERV-B	172	-----	GCRVYGV
T.cacaoERV-B	172	-----	GCRVYGV

----->

BLOCK#4----->

C. subellipsoideaPDI-C	288	VLVKKVPGALHFLAKSPGHS-----FDYQAM---NMSHVVNYLWFGNKPSPRR
C. reinhardtiiPDI-C	293	VMVKKVPGTVHVFVARSEGH-----FDHTWM---NMTHTMHSFHVGTTRPSPRK
V. carteriPDI-C	293	VMVKKVPGTLTVVARSEGH-----FDHTWM---NMTHTLVHTFHVGTTRPSPRK
K. flaccidumPDI-C	343	VLVKKVPGNLQVAAVSAGHS-----FDPATM---NMSHSVNSFSFGGRKPTLKQ
B. rapaPDI-C1	300	VRVKKVPGNLIISAHSGAHS-----FDSSQM---NMSHVVSHLSFGRMFSRPL
B. rapaPDI-C2	301	VRVKKVPGNLVISAHSGAHS-----FDSSQM---NMSHVVTTHLSFGRMIDTRL
E. salisugineumPDI-C1	300	VRVKKVPGNLVISAHSGAHS-----FDSTQM---NMSHVVTTHLSFGRMFSRPL
A. thalianaPDI12	300	VRVKKVPGNLVISAHSGAHS-----FDSSQM---NMSHVVSHLSFGRMFSRPL
C. rubellaPDI-C1	300	VRVKKVPGNLIISAHSGAHS-----FDSSQM---NMSHVVTTHLSFGRMFSRPL
B. rapaPDI-C5	294	VRAKKVPGELVISAVSGSH-----FDASRM---NMTHEVNHLSFGRILSDRL
A. thalianaPDI13	301	VRAKKVPGELVISAHSGAHS-----FDASQM---NMSHIVTTHLTFGTMVSERL
C. rubellaPDI-C3	300	VRAKKVPGELVISAHSGAHS-----FDASQM---NMSHIVTTHLTFGTMVSERL
B. rapaPDI-C6	300	VRAKKVPGELIISAHSGAHS-----FDASQM---NMSHVVTTHLSFGRMFSRPL
E. salisugineumPDI-C3	301	VRAKKVPGVVISAHSGAHS-----FDASQM---NMSHIVTTHLSFGRMFSRPL
S. bicolorPDI-C	301	VRVKKVPGSVIVAARSGSH-----FDPSQI---NVSHVVTQFSFGKRLSHRM
Z. maysPDI-C	299	VRVKKVPGSVVISARSGSH-----FDPSQI---NVSHVVTQFSFGKRLSPRM
B. distachyonPDI-C	301	VRVKKVPGSVIISARSGSH-----FDPSQI---NVSHVVTQFSFGKRLSPNM
O. sativaPDI-C	301	VRVKKVPGSVVISARSGSH-----FDPSQI---NVSHVVTQFSFGKRLSAKM
B. rapaPDI-C4	300	MRVKKVPGNLMVSARSGSH-----FDTSQM---NMSHVVNHLFSFGKRLPEA
A. thalianaPDI7	300	MRVKKVPGNLMVSARSGSH-----FDSSQM---NMSHVVNHLFSGRRIMPQK
C. rubellaPDI-C2	300	MRVKKVPGNLIISARSDAHS-----FDSSQM---NMSHVVNHLFSFGKRLPQK
B. rapaPDI-C3	298	IRVKKVPGNLMVSARSGSH-----FDSTQM---NMSHVVNHLFSFGKRLPQT
E. salisugineumPDI-C2	300	MRVKKVPGNLMVSARSGSH-----FDSSQM---NMSHVVNHLFSGRRILPQT
S. lycopersicumPDI-C	301	VRVKKVPGNLVISARSAHS-----FDASQM---NMSHVVISFSFGKTIIPKV
S. tuberosumPDI-C	301	VRVKKVPGNLVISARSAHS-----FDASQM---NMSHVVISFSFGKTIIPKV
M. truncatulaPDI-C1	300	VRVKKVPGNLIISARSDAHS-----FDASQM---NMSHIVHHLFSFGKRLSPKL
P. vulgarisPDI-C1	300	VRVKKVPGNLIISARSDAHS-----FDASQM---NMSHVVNHLFSFGKRVSPRV
G. maxPDI-C1	300	VRVKKVPGNLIISARSDAHS-----FDASQM---NMSHVINHLFSFGKRVSPRV
G. maxPDI-C2	300	VRVKKVPGNLIISARSDAHS-----FDASQM---NMSHVINHLFSFGKRVSLRV
M. truncatulaPDI-C2	297	VRVKKVPGSLVVSARSDAHS-----FDASQM---NMSHVINHLFSFGKRVTPRA
P. vulgarisPDI-C2	300	VRVKKVPGNLIISARSDAHS-----FDASQM---NMSHVVNHLFSFGKRVTPRA
G. maxPDI-C3	300	VRVKKVPGNLIISARSDAHS-----FDASQM---NMSHVINHLFSFGKRVTPRA
G. maxPDI-C4	300	VRVKKVPGNLIISARSDAHS-----FDASQM---NMSHVINHLFSFGKRVTPRA
V. viniferaPDI-C	301	VRVKKVPGNLVISARSGSH-----FDPSQM---NMSHVVISHLFSFGKRIAPRV
C. sativusPDI-C	301	VRVKKVPGSLVIAARSESH-----FDASQM---NMSHIVISHLFSFGKRIAPRV
P. persicaPDI-C	300	VRVKKVPGNLVISAHSGAHS-----FDASQM---NMSHVVISHSFGRMIAPKV
T. cacaoPDI-C	297	VRVKKVPGNLIISARSAHS-----FDASQM---NMSHVVISHLFSFGKRIAPRV
P. trichocarpaPDI-C1	301	VRVKKVPGNLMISALSGAHS-----FDSKQM---NLSHVVISHSFSGMKVLPVR
P. trichocarpaPDI-C2	301	VRVKKVPGNLVISARSGAHS-----FDSKQM---NLSHVVISHSFSGMKVLPVR
S. moellendorffiiPDI-C	291	IRAKKVPGNIIISAHSGSH-----FDASAM---NMTHTVVSQTFGRRLNFWM
P. patensPDI-C	306	VRVKKVPGELMISAHSGSH-----FDATSM---NMTHTVVSQTFGRKTSWRSS
C. reinhardtiiERV-A	243	LEVNVKVGAFHFPAGRSYQQGSMHVD-IAPFGDAVI---DFRHTVHKLKLSFG-----
V. carteriERV-A	212	LEVNVKVGAFHFPAGRSYQQGSMHVD-IAPFGDAVI---DFRHTVHKLKLSFG-----
C. subellipsoideaERV-A	204	LAVNVKVGAFHFPAGKSFQQGPMHVD-LVFPQGVTF---DLSHRIDKLSFG-----
K. flaccidumERV-A	209	LEVNVKVGAFHFPAGKSFQQAHMHVD-LVFPASQKF---NMSHIVINKLSFG-----
B. distachyonERV-A3	209	LDVSKVAGNFHFPAGRGFYESNVDVPE--LSSLEGGF---NITHKINKLSFG-----
O. sativaERV-A3	209	LDVSKVAGNFHFPAGKGFYESNINVDPE--LSALEHGF---NITHKINKLSFG-----
Z. maysERV-A3	209	LDVSKVAGNFHFPAGKGFYESNIDVPE--LSSLEGGF---NISHKINKLSFG-----
B. distachyonERV-A2	209	LDVSKVAGNFHFPAGKGFYESNIDVPE--LSSLEGGF---NITHKINKLSFG-----
S. bicolorERV-A3	209	LDVSKVAGNFHFPAGKGFYESNIDVPE--LSSLEGGF---NITHKINKLSFG-----
P. patensERV-A1	211	LEVNVKVGAFHFPAGKSFQQANMHVD-LVAFGKDSF---NVSHKINEKLSFG-----
P. patensERV-A4	209	LEVNVKVGAFHFPAGKSFQQSAMHLD-LMGIRSDSF---NVSHIVNELSFG-----
P. patensERV-A2	209	LEVNVKVGAFHFPAGKSFQQSAMHLD-LMGFITDSF---NVSHITNELSFG-----
P. patensERV-A3	209	LEVNVKVGAFHFPAGKSFQQSAMHLD-LMGFVTDSD---NVSHITNELSFG-----
S. bicolorERV-A2	208	VNVNVKVGAFHFPAGKSLDQSFNFQD-LNFIQPEY---NISHKINKLSFG-----
B. distachyonERV-A2	208	VDVNVKVGAFHFPAGKSLDQSFNFQD-LNFIQPEY---NISHKINKLSFG-----
O. sativaERV-A2	208	VNVNVKVGAFHFPAGKSLDQSFNFQD-LNFIQPEY---NISHKINKLSFG-----
S. moellendorffiiERV-A	209	LEVNVKVGAFHFPAGKSFQSHVHVD-VQSLHKEKF---NVSHYINELSFG-----
C. sativusERV-A3	209	LEVNVKVGAFHFPVPGKSFYQSSFNFLG-LALQTSYD---NVSHRINRLAFG-----
M. truncatulaERV-A2	209	LEVNVKVGAFHFPATGQSFQSAIFLAD-LALQDNHY---NISHKINKLSFG-----
P. vulgarisERV-A2	209	LEVNVKVGAFHFPATGKSFQSAIFLAD-LALQDNHY---NISHKINKLSFG-----
G. maxERV-A3	209	LEVNVKVGAFHFPATGKSFQSAIFLAD-LALQDNHY---NISHKINKLSFG-----
G. maxERV-A4	209	LEVNVKVGAFHFPATGKSFQSAIFLAD-LALQDNHY---NISHKINKLSFG-----
S. lycopersicumERV-A2	209	LEVNVKVGAFHFAAGKSFHQSTFQFE-LISLQSDTY---NISHRVNRLAFG-----
S. tuberosumERV-A2	209	LEVNVKVGAFHFAAGKSFHQSTFQFE-LISLQSDTY---NISHRVNRLAFG-----
P. persicaERV-A2	209	LEVNVKVGAFHFPVSGKSFHQSNIFVQD-LAFQTSY---NISHKINRLAFG-----
T. cacaoERV-A2	209	LEVNVKVGAFHFPAGKSFHQSNIFVQD-LAFQKDSY---NISHKINRLAFG-----
P. trichocarpaERV-A3	209	LEVNVKVGAFHFPVPGKSFHQSNIFVQD-LDMQKESY---NISHKINRLAFG-----
P. trichocarpaERV-A4	209	LEVNVKVGAFHFPAPKSFHLSNIFVQD-LDLQKDSY---NISHKINRLAFG-----
C. sativusERV-A1	207	LEVNVKVGAFHFPAGRGFQSLYFQHNPLASFQWDAF---NISHKINRLAFG-----
V. viniferaERV-A2	209	LEVNVKVGAFHFPSPGKGFYQSNIFVQD-LAISKGDY---NISHKINRLAFG-----
B. rapaERV-A4	205	LEVNVKVGAFHFPVPGKSFHQSGFQFHD-MHMFQQGN---NISHKINRLAFG-----
B. rapaERV-A3	205	LEVNVKVGAFHFPVPGKSFHQSGFQFHD-LHMFQQGN---NISHKINRLAFG-----
E. salisugineumERV-A2	209	LEVNVKVGAFHFPVPGKSFHQSGFQFHD-LHMFQQGN---NISHKINRLAFG-----

-----> BLOCK#4----->

A.thalianaERV-A2	209	LEVNVK	VAGNFH	FIPGQSF	HQSGFQ	FHD-M	LLFQ	QGN	---	NISHK	VNRL	AFG	-----
C.rubellaERV-A2	209	LEVNVK	VAGNFH	FIPGQSF	HQSGFQ	FHD-M	LLFQ	QGN	---	NISHK	VNRL	AFG	-----
B.rapaERV-A2	209	LEVNVK	VAGNFH	FIPGQSF	HQSGFQ	FHD-M	LLFQ	QGN	---	NISHK	VNRL	AFG	-----
E.salsugineumERV-A3	209	LEVNVK	VAGNFH	FIPGQSF	HQSGFQ	FHD-M	LLFQ	QGN	---	NISHK	VNRL	AFG	-----
B.distachyonERV-A1	209	VEINKV	VAGNFH	FAPGKSF	FQGSNV	VHD-L	LPFQ	KDSF	---	NVSHK	INRL	SFG	-----
O.sativaERV-A1	209	LEVNVK	VAGNFH	FAPGKSF	FQGSNV	VHD-L	LPFQ	KDSF	---	NVSHK	INRL	SFG	-----
S.bicolorERV-A1	209	LEVNVK	VAGNFH	FAPGKSF	FQGSNV	VHD-L	LPFQ	KDSF	---	NVSHK	INRL	SFG	-----
Z.maysERV-A1	209	LEVNVK	VAGNFH	FAPGKSF	FQGSNV	VHD-L	LPFQ	KDSF	---	NVSHK	INRL	SFG	-----
S.lycopersicumERV-A1	209	LEVNVK	VAGNFH	FAPGKSF	FQGSNV	VHD-L	LPFQ	KDSF	---	NVSHK	INRL	SFG	-----
S.tuberosumERV-A1	209	LEVNVK	VAGNFH	FAPGKSF	FQGSNV	VHD-L	LPFQ	KDSF	---	NVSHK	INRL	SFG	-----
B.rapaERV-A1	209	LEVNVK	VAGNFH	FAPGKSF	FQGSNV	VHD-L	LPFQ	KDSF	---	NVSHK	INRL	SFG	-----
E.salsugineumERV-A1	209	LEVNVK	VAGNFH	FAPGKSF	FQGSNV	VHD-L	LPFQ	KDSF	---	NVSHK	INRL	SFG	-----
A.thalianaERV-A1	209	LEVNVK	VAGNFH	FAPGKSF	FQGSNV	VHD-L	LPFQ	KDSF	---	NVSHK	INRL	SFG	-----
C.rubellaERV-A1	209	LEVNVK	VAGNFH	FAPGKSF	FQGSNV	VHD-L	LPFQ	KDSF	---	NVSHK	INRL	SFG	-----
V.viniferaERV-A1	209	LEVNVK	VAGNFH	FAPGKSF	FQGSNV	VHD-L	LPFQ	KDSF	---	NVSHK	INRL	SFG	-----
C.sativusERV-A2	209	LEVNVK	VAGNFH	FAPGKSF	FQGSNV	VHD-L	LPFQ	KDSF	---	NVSHK	INRL	SFG	-----
M.truncatulaERV-A1	209	LEVNVK	VAGNFH	FAPGKSF	FQGSNV	VHD-L	LPFQ	KDSF	---	NVSHK	INRL	SFG	-----
P.persicaERV-A1	209	LEVNVK	VAGNFH	FAPGKSF	FQGSNV	VHD-L	LPFQ	KDSF	---	NVSHK	INRL	SFG	-----
P.vulgarisERV-A1	209	LEVNVK	VAGNFH	FAPGKSF	FQGSNV	VHD-L	LPFQ	KDSF	---	NVSHK	INRL	SFG	-----
G.maxERV-A1	209	LEVNVK	VAGNFH	FAPGKSF	FQGSNV	VHD-L	LPFQ	KDSF	---	NVSHK	INRL	SFG	-----
G.maxERV-A2	209	LEVNVK	VAGNFH	FAPGKSF	FQGSNV	VHD-L	LPFQ	KDSF	---	NVSHK	INRL	SFG	-----
T.cacaoERV-A1	209	LEVNVK	VAGNFH	FAPGKSF	FQGSNV	VHD-L	LPFQ	KDSF	---	NVSHK	INRL	SFG	-----
P.trichocarpaERV-A1	209	LEVNVK	VAGNFH	FAPGKSF	FQGSNV	VHD-L	LPFQ	KDSF	---	NVSHK	INRL	SFG	-----
P.trichocarpaERV-A2	200	LEVNVK	VAGNFH	FAPGKSF	FQGSNV	VHD-L	LPFQ	KDSF	---	NVSHK	INRL	SFG	-----
C.reinhardtiiERV-B	171	MEVNRV	VAGNFH	FAPGKSF	FQGSNV	VHD-L	LPFQ	KDSF	---	NVSHK	INRL	SFG	-----
V.carteriERV-B	169	MDVNRV	VAGNFH	FAPGKSF	FQGSNV	VHD-L	LPFQ	KDSF	---	NVSHK	INRL	SFG	-----
C.subellipsoideaERV-B	159	LDLQRV	VAGNFH	FAPGKSF	FQGSNV	VHD-L	LPFQ	KDSF	---	NVSHK	INRL	SFG	-----
K.flaccidumERV-B	181	LDVQRV	VAGNFH	FAPGKSF	FQGSNV	VHD-L	LPFQ	KDSF	---	NVSHK	INRL	SFG	-----
P.patensERV-B	176	LDVQRV	VAGNFH	FAPGKSF	FQGSNV	VHD-L	LPFQ	KDSF	---	NVSHK	INRL	SFG	-----
S.moellendorffiiERV-B	167	LDVQRV	VAGNFH	FAPGKSF	FQGSNV	VHD-L	LPFQ	KDSF	---	NVSHK	INRL	SFG	-----
S.bicolorERV-B	178	LDVQRV	VAGNFH	FAPGKSF	FQGSNV	VHD-L	LPFQ	KDSF	---	NVSHK	INRL	SFG	-----
Z.maysERV-B	178	LDVQRV	VAGNFH	FAPGKSF	FQGSNV	VHD-L	LPFQ	KDSF	---	NVSHK	INRL	SFG	-----
B.distachyonERV-B	177	LDVQRV	VAGNFH	FAPGKSF	FQGSNV	VHD-L	LPFQ	KDSF	---	NVSHK	INRL	SFG	-----
O.sativaERV-B	177	LDVQRV	VAGNFH	FAPGKSF	FQGSNV	VHD-L	LPFQ	KDSF	---	NVSHK	INRL	SFG	-----
B.rapaERV-B2	177	LDVQRV	VAGNFH	FAPGKSF	FQGSNV	VHD-L	LPFQ	KDSF	---	NVSHK	INRL	SFG	-----
B.rapaERV-B1	180	LDVQRV	VAGNFH	FAPGKSF	FQGSNV	VHD-L	LPFQ	KDSF	---	NVSHK	INRL	SFG	-----
E.salsugineumERV-B	176	LDVQRV	VAGNFH	FAPGKSF	FQGSNV	VHD-L	LPFQ	KDSF	---	NVSHK	INRL	SFG	-----
A.thalianaERV-B	184	LDVQRV	VAGNFH	FAPGKSF	FQGSNV	VHD-L	LPFQ	KDSF	---	NVSHK	INRL	SFG	-----
C.rubellaERV-B	184	LDVQRV	VAGNFH	FAPGKSF	FQGSNV	VHD-L	LPFQ	KDSF	---	NVSHK	INRL	SFG	-----
M.truncatulaERV-B	185	LDVQRV	VAGNFH	FAPGKSF	FQGSNV	VHD-L	LPFQ	KDSF	---	NVSHK	INRL	SFG	-----
P.vulgarisERV-B	179	LDVQRV	VAGNFH	FAPGKSF	FQGSNV	VHD-L	LPFQ	KDSF	---	NVSHK	INRL	SFG	-----
G.maxERV-B1	182	LDVQRV	VAGNFH	FAPGKSF	FQGSNV	VHD-L	LPFQ	KDSF	---	NVSHK	INRL	SFG	-----
G.maxERV-B2	178	LDVQRV	VAGNFH	FAPGKSF	FQGSNV	VHD-L	LPFQ	KDSF	---	NVSHK	INRL	SFG	-----
C.sativusERV-B	176	LDVQRV	VAGNFH	FAPGKSF	FQGSNV	VHD-L	LPFQ	KDSF	---	NVSHK	INRL	SFG	-----
S.lycopersicumERV-B1	176	LDVQRV	VAGNFH	FAPGKSF	FQGSNV	VHD-L	LPFQ	KDSF	---	NVSHK	INRL	SFG	-----
S.tuberosumERV-B1	169	LDVQRV	VAGNFH	FAPGKSF	FQGSNV	VHD-L	LPFQ	KDSF	---	NVSHK	INRL	SFG	-----
S.lycopersicumERV-B2	178	LDVQRV	VAGNFH	FAPGKSF	FQGSNV	VHD-L	LPFQ	KDSF	---	NVSHK	INRL	SFG	-----
S.tuberosumERV-B2	178	LDVQRV	VAGNFH	FAPGKSF	FQGSNV	VHD-L	LPFQ	KDSF	---	NVSHK	INRL	SFG	-----
P.persicaERV-B	179	LDVQRV	VAGNFH	FAPGKSF	FQGSNV	VHD-L	LPFQ	KDSF	---	NVSHK	INRL	SFG	-----
P.trichocarpaERV-B1	179	LDVQRV	VAGNFH	FAPGKSF	FQGSNV	VHD-L	LPFQ	KDSF	---	NVSHK	INRL	SFG	-----
P.trichocarpaERV-B2	179	LDVQRV	VAGNFH	FAPGKSF	FQGSNV	VHD-L	LPFQ	KDSF	---	NVSHK	INRL	SFG	-----
V.viniferaERV-B	179	LDVQRV	VAGNFH	FAPGKSF	FQGSNV	VHD-L	LPFQ	KDSF	---	NVSHK	INRL	SFG	-----
T.cacaoERV-B	179	LDVQRV	VAGNFH	FAPGKSF	FQGSNV	VHD-L	LPFQ	KDSF	---	NVSHK	INRL	SFG	-----

C.subellipsoideaPDI-C	333	HQSLAKLHP--AGLSDDWADKLAGQ----	DFSR-AAK----	ATFEHYMQVLLTTIEPSKH
C.reinhardtiiPDI-C	338	YQQLKRLHP--AGLTADWADKLHDQ----	LFVSE-HTQ----	STHEHYLQVVLTTIEPRHS
V.carteriPDI-C	338	YQQLKRLHP--AGLTHDWADQLRDQ----	FLSE-HPQ----	STHEHYLQVVLTSIEPRRS
K.flaccidumPDI-C	388	YHEIDRIWSHHPSAGED---RLTGR---	YHSH-SDN---	LTHEHYLQVVLTSVEFLKL
B.rapaPDI-C1	345	LTDMRLLPYIGQSHD---KLNK----	AFINQ-HEFGANVTIEHYLQVVKTEVITRRT	
B.rapaPDI-C2	346	LTDLKRLLPYLGQSHD---KLDEK----	AFINQ-HEFGANVTIEHYLQVVKTEVITRRT	
E.salsugineumPDI-C1	345	LTDMRLLPYLGQSHG---RLDEK----	AFINQ-HEFGANVTIEHYLQVVKTEVITRKS	
A.thalianaPDI12	345	LTDMRLLPYLGLSHD---RLDGK----	AFINQ-HEFGANVTIEHYLQVVKTEVITRRS	
C.rubellaPDI-C1	345	LTDMRLLPYLGQSHD---RLDGK----	AFINQ-HEFGANVTIEHYLQVVKTEVITRRS	
B.rapaPDI-C5	339	LTDMRLLPYLGLSHD---RLNGK----	WVNE-GKFAANVTIEHYLQVVKTEVVSRRF	
A.thalianaPDI13	346	WTDMRLLPYLGQSHD---RLNGK----	SEINE-RQLDANVTIEHYLQVVKTEVVSRRS	
C.rubellaPDI-C3	345	WTDMRLLPYLGQSHD---RLNGK----	SEINQ-RQLDANVTIEHYLQVVKTEVVSRRF	
B.rapaPDI-C6	345	LTDMRLLPYLGLSHD---RLNSK----	WVNE-GQFAANVTIEHYLQVVKTEVVSRRF	
E.salsugineumPDI-C3	346	LTDMRLLPYLGQSHD---RLNGK----	WFLNQ-GQFAANVTIEHYLQVVKTEVVSRRF	
S.bicolorPDI-C	346	LDEFRLTPYLSGYND---RLAGQ----	SYIVKHGEVNANVTIEHYLQVVKTEVITQRS	
Z.maysPDI-C	344	LHEFIRLTPYLRGYHD---RLAGQ----	SYIVKHGEVNANVTIEHYLQVVKTEVITQRS	
B.distachyonPDI-C	346	FSELKRLIPYVGGSHD---RLAGQ----	SYIVKHGDNNANVTIEHYLQVVKTEVITLRS	
O.sativaPDI-C	346	FNELKRLTPYVGGSHD---RLAGQ----	SYIVKHGDVNANVTIEHYLQVVKTEVITLRS	
B.rapaPDI-C4	345	FSDLKRLAPYLGSSH---RLDDR----	SEINQ-HDLGPNVTIEHYLQVVKTEVVKNSG	
A.thalianaPDI7	345	FSEFKRLSPYLGLSHD---RLDGR----	SEINQ-RDLGPNVTIEHYLQVVKTEVVKNSG	
C.rubellaPDI-C2	345	FSELKRLSPYLGRNHD---RLDGR----	PEINQ-RDLGPNVTIEHYLQVVKTEVVKNSG	
B.rapaPDI-C3	343	FTDLKRLSPYLQSHD---RLNGR----	PEINQ-RDLGPNVTIEHYLQVVKTEVVKNSG	
E.salsugineumPDI-C2	345	FADLKRLLPYLGRSHD---RLDGR----	PEINQ-RDLGPNVTIEHYLQVVKTEVVKNSG	
S.lycopersicumPDI-C	346	MSDIKILLPHLGRSHD---RLNGN----	SYVTNPRDSTENVTIEHFLOVVKTEVMTRSY	
S.tuberosumPDI-C	346	MSDIKILLPHLGRSHD---RLNGN----	SYVTNPRDSTENVTIEHFLOVVKTEVMTRSY	
M.truncatulaPDI-C1	345	MSDVQRLIPYVGNSHD---RLDGL----	SEINS-HDFGANVTIEHYLQVVKTEVITRQG	
M.truncatulaPDI-C1	345	MSDVKRLIPYVGNSHD---RLNGL----	SEINT-RDFGANVTIEHYLQVVKTEVITRKD	
G.maxPDI-C1	345	MSDVKRLIPYVGNSHD---RLNGR----	SEINT-HDLGANVTIEHYLQVVKTEVITRKD	
G.maxPDI-C2	345	MSDVKRLIPYVGNSHD---RLNGR----	SEINT-HDLGANVTIEHYLQVVKTEVITRKE	
M.truncatulaPDI-C2	342	MIDVKHWIPYLGINHD---RLNGR----	SEINT-RDLEGNVTIEHYLQVVKTEVITRKG	
P.vulgarisPDI-C2	345	MSDVKRLIPYLGSSH---RLSGR----	SESNT-RDFGANVTIEHYLQVVKTEVVTNRKG	
G.maxPDI-C3	345	MSDVKLLIPYIGSSH---RLNGR----	SEINT-RDLGANVTIEHYLQVVKTEVVTNRKG	
G.maxPDI-C4	345	MSDVKLLIPYIGSSH---RLNGR----	SETNT-HDLGANVTIEHYLQVVKTEVVTNRG	
V.viniferaPDI-C	346	MSDMKRVLPYIGSHD---RLNGR----	SYTSHPSDSNANVTIEHYLQVVKTEVITTRD	
C.sativusPDI-C	346	FSDAKQLIPYIGISHD---RLNGR----	SEINQ-RDLGANVTIEHYLQVVKTEVVTTRRS	
P.persicaPDI-C	345	MSDVKRLVPYLGSSH---RLNGR----	SEINH-RDLGANVTIEHYLQVVKSEVITGRN	
T.cacaoPDI-C	342	LSDVKRLIPYIGRSHD---RLNGR----	SEINH-RELDANVTIEHYLQVVKTEVVTTRRS	
P.trichocarpaPDI-C1	346	MSDVKRLPYIGRSHD---KLNGR----	SEINH-RDVGANVTIEHYLQVVKTEVVTTRRS	
P.trichocarpaPDI-C2	346	MSDVKRLPHIGRSHD---KLNGR----	SEINH-RDVGANVTIEHYLQVVKTEVVTTRRS	
S.moellendorffiiPDI-C	336	RRELYRIYPLASVYDTVEANLTGR---	IYVSQ-HEN---	ITHDHYLQVVKTEVVSRLRK
P.patensPDI-C	351	VHWVNEMLPALDSNID---RLTQ---	VEPSE-YEN---	ITHDHYLQVVKTEVITLHR
C.reinhardtiiERV-A	291	-----EYPGGMKN---	PLDGAKAGQAAAAAAAAAT---	GMQYFVFKVPTSYTDLNS
V.carteriERV-A	260	-----APYPGMKN---	PLDNA-----	KAGYKSAATGMQYFVFKVPTSYTDLN
C.subellipsoideaERV-A	252	-----HEYPGTMN---	PLDRV-NLPKENTR-NPQGLF	GAYQYFVFKVPTIYVNSHN
K.flaccidumERV-A	257	-----ADYPGVVH---	PLDNV-----	RRIQE-ADG---GMQYFVFKVPTIYTDLSG
B.distachyonERV-A3	256	-----TEFPGVWN---	PLDGA---QWTOP-ASD---	GTQYFVFKVPTIYTDTRG
O.sativaERV-A3	256	-----TEFPGVWN---	PLDGA---QWTOP-ASD---	GTQYFVFKVPTIYTDTRG
Z.maysERV-A3	256	-----TEFPGVWN---	PLDGA---QWTOP-ASD---	GTQYFVFKVPTIYTDTRG
Z.maysERV-A2	256	-----TEFPGVWN---	PLDGA---QWTOP-ASD---	GTQYFVFKVPTIYTDTRG
S.bicolorERV-A3	256	-----TEFPGVWN---	PLDGA---QWTOP-ASD---	GTQYFVFKVPTIYTDTRG
P.patensERV-A1	259	-----VRYPGAVN---	PLDKL---ERIQT-TTH---	GMQYFVFKVPTIYTDTRG
P.patensERV-A4	257	-----AHEPGRVN---	PLDKI---TSIQK-DQN---	GMQYFVFKVPTIYTDTRG
P.patensERV-A2	257	-----AHEPGRVN---	PLDKV---TNIQK-DLN---	GMQYFVFKVPTIYTDTRG
P.patensERV-A3	257	-----AYEPGAVN---	PLDKV---TSIQK-DQN---	GMQYFVFKVPTIYTDTRG
S.bicolorERV-A2	256	-----EEFPGVWN---	PLDGV---EWIQD-NSNGLT	GMQYFVFKVPTIYTDTRG
B.distachyonERV-A2	256	-----KEFPGVWN---	PLDGV---EWKQE-QATGLT	GMQYFVFKVPTIYTDTRG
O.sativaERV-A2	256	-----VEFPGVWN---	PLDGV---EWIQE-HTNGLT	GMQYFVFKVPTIYTDTRG
S.moellendorffiiERV-A	257	-----AREPGRVN---	PLDKE---KRIQK-FPS---	AMYQYFVFKVPTIYTDTRG
C.sativusERV-A3	257	-----NHYDGLVN---	PLDGV---HMEYN-EQN---	VMHQYFVFKVPTIYTDTRG
M.truncatulaERV-A2	257	-----HHYPGLVN---	PLDGI---KWVQG-NDH---	GMQYFVFKVPTIYTDTRG
P.vulgarisERV-A2	257	-----HHEPGLVN---	PLDGV---KWVQG-PTH---	GMQYFVFKVPTIYTDTRG
G.maxERV-A3	257	-----HHEPGLVN---	PLDGV---KWVQG-PAH---	GMQYFVFKVPTIYTDTRG
G.maxERV-A4	257	-----HHEPGLVN---	PLDGV---RWVQG-PTH---	GMQYFVFKVPTIYTDTRG
S.lycopersicumERV-A2	257	-----DSIPGVWN---	PLDGV---QWTOE-AQN---	GMQYFVFKVPTIYTDTRG
S.tuberosumERV-A2	257	-----DSIPGVWN---	PLDGV---QWTOE-AQN---	GMQYFVFKVPTIYTDTRG
P.persicaERV-A2	257	-----DYEPGKLN---	PLDGV---QWRQE-TPN---	GMQYFVFKVPTIYTDTRG
T.cacaoERV-A2	257	-----EYEPGVWN---	PLDGA---QWIHE-TSN---	GMQYFVFKVPTIYTDTRG
P.trichocarpaERV-A3	257	-----DYEPGVWN---	PLDGI---QLMHE-TQN---	GVQCFVFKVPTIYTDTRG
P.trichocarpaERV-A4	257	-----DYEPGVWN---	PLAGI---QLMHD-TPN---	GVQCFVFKVPTIYTDTRG
C.sativusERV-A1	256	-----DFEPGVWN---	PLDGV---QWNQG-TLS---	GMQYFVFKVPTIYTDTRG
V.viniferaERV-A2	257	-----DHEPGRVN---	PLDGA---QWFQD-APD---	GMQYFVFKVPTIYTDTRG
B.rapaERV-A4	253	-----DFEPGVWN---	PLDGV---QWNQD-KQN---	GVYQYFVFKVPTIYTDVHG
B.rapaERV-A3	253	-----DFEPGVWN---	PLDGV---QWNQE-KQN---	GVYQYFVFKVPTIYTDVHG
E.salsugineumERV-A2	257	-----DFEPGVWN---	PLDGV---QWNQE-KQN---	GVYQYFVFKVPTIYTDVHG

A.thalianaERV-A2	257	-----DFEPGVVN-----	PLDGV---	QWNOG-KQS---	GVYQYFIKVVPSIYTDVHQ
C.rubellaERV-A2	257	-----DFEPGVVN-----	PLDGV---	QWNOG-KQS---	GVYQYFIKVVPSIYTDVHR
B.rapaERV-A2	257	-----DRFPGVWN-----	PLDGV---	QWTOE-TLN---	GMVQYFIKVVPTVYTDVVRG
E.salsugineumERV-A3	257	-----DYEPGVVN-----	PLDSV---	QWTOE-TLN---	GMVQYFIKVVPTVYTDVKE
B.distachyonERV-A1	257	-----EPEPGVWN-----	PLDGA---	HWFOH-SPY---	GMVQYFIKVVPTVYTDVSHINE
O.sativaERV-A1	257	-----QREPGVWN-----	PLDGA---	QWMOH-SSY---	GMVQYFIKVVPTVYTDINE
S.bicolorERV-A1	257	-----EYEPGVVN-----	PLDGA---	SWVOH-SSY---	GMVQYFIKVVPTVYTDINE
Z.maysERV-A1	257	-----EYEPGVVN-----	PLDGA---	NWVOH-SSY---	GMVQYFIKVVPTVYTDINE
S.lycopersicumERV-A1	257	-----EYEPGVVN-----	PLDGV---	KWTOE-TPH---	GMVQYFIKVVPTVYTDVSG
S.tuberosumERV-A1	257	-----EYEPGVVN-----	PLDGV---	MWTOE-TPH---	GMVQYFIKVVPTVYTDVSG
B.rapaERV-A1	257	-----DYEPGVVN-----	PLDKV---	QWSOD-TPN---	AMVQYFIKVVPTVYTDISG
E.salsugineumERV-A1	257	-----DYEPGVVN-----	PLDRV---	QWQOD-TPN---	AMVQYFIKVVPTVYTDISG
A.thalianaERV-A1	257	-----DYEPGVVN-----	PLDKV---	QWSOD-TPN---	AMVQYFIKVVPTVYTDIRG
C.rubellaERV-A1	257	-----DYEPGVVN-----	PLDKV---	QWSOD-TPN---	AMVQYFIKVVPTVYTDIRG
V.viniferaERV-A1	257	-----DYEPGVVN-----	PLDGV---	QWIOA-TPS---	GMVQYFIKVVPTVYTDVSG
C.sativusERV-A2	257	-----EYEPGVVN-----	PLDSV---	QWKOE-TPS---	ATVQYFIKVVPTVYNSVSG
M.truncatulaERV-A1	257	-----DYEPGVVN-----	PLDRV---	HWTOE-TPS---	GMVQYFIKVVPTVYTDVSG
P.persicaERV-A1	257	-----DYEPGVVN-----	PLDGV---	HWAOA-TPS---	GMVQYFIKVVPTVYTDVSG
P.vulgarisERV-A1	257	-----EYEPGVVN-----	PLDGV---	HWIOE-TPS---	GMVQYFIKVVPTVYTDVNG
G.maxERV-A1	257	-----EYEPGVVN-----	PLDGV---	HWTOE-TPS---	GMVQYFIKVVPTVYTDVSG
G.maxERV-A2	257	-----EYEPGVVN-----	PLDGV---	HWTOE-TPS---	GMVQYFIKVVPTVYTDVSG
T.cacaoERV-A1	257	-----DYEPGVVN-----	PLDGV---	HWTOE-QPS---	GMVQYFIKVVPTVYTDVSG
P.trichocarpaERV-A1	257	-----EYEPGVVN-----	PLDGV---	QWTOE-TPS---	GMVQYFIKVVPTVYTDVSG
P.trichocarpaERV-A2	248	-----EYEPGVVN-----	PLDGV---	QWTOE-TPS---	GMVQYFIKVVPTVYTDVSG
C.reinhardtiiERV-B	219	-----PHYPGQLN-----	PLDGY---	VRMVGREPF---	SYKYFIKVVPTVYTDVNRGL
V.carteriERV-B	217	-----PHYPGQLN-----	PLDGY---	VRMVK-GPP---	QSEKYFIKVVPTVYTDVNRGL
C.subellipsoideaERV-B	203	-----PTEPGVWN-----	PLDGA---	ERILD-KES---	GTEKYFIKVVPTVYTKLDG
K.flaccidumERV-B	225	-----PPIPGTIN-----	PLDGY---	TRILK-TEQ-ES	GTEKYFIKVVPTVYTFPLKG
P.patensERV-B	220	-----PTYPGHHN-----	PLDGS---	ERILH-DTS---	GTEKYFIKVVPTVYTYHLHG
S.moellendorffiiERV-B	211	-----PKYPGIHN-----	PLDRT---	VRILR-DTA---	GTEKYFIKVVPTVYTYRLNG
S.bicolorERV-B	222	-----PKYPGIHN-----	PLDET---	SRILH-DTS---	GTEKYFIKVVPTVYTYRLSK
Z.maysERV-B	222	-----PKYPGIHN-----	PLDET---	SRILH-DTS---	GTEKYFIKVVPTVYTYRLSK
B.distachyonERV-B	221	-----PKYPGIHN-----	PLDDT---	TRILH-DAS---	GTEKYFIKVVPTVYTYRLSK
O.sativaERV-B	221	-----PKYPGIHN-----	PLDET---	TRILH-DTS---	GTEKYFIKVVPTVYTYRLSK
B.rapaERV-B2	221	-----PKYPGIHN-----	PLDGT---	NRILH-DTS---	GTEKYFIKVVPTVYTYRLSK
B.rapaERV-B1	224	-----PKYPGIHN-----	PLDDT---	NRILR-DTS---	GTEKYFIKVVPTVYTYRLSK
E.salsugineumERV-B	220	-----PKYPGIHN-----	PLDDT---	NRILR-DTS---	GTEKYFIKVVPTVYTYRLSK
A.thalianaERV-B	228	-----PKYPGIHN-----	PLDDT---	NRILH-DTS---	GTEKYFIKVVPTVYTYRLSK
C.rubellaERV-B	228	-----PKYPGIHN-----	PLDDT---	NRMLH-ETS---	GTEKYFIKVVPTVYTYRLSK
M.truncatulaERV-B	229	-----PKYPGIHN-----	PLDET---	SRILH-DAS---	GTEKYFIKVVPTVYTYRISK
P.vulgarisERV-B	223	-----PKYPGIHN-----	PLDDT---	NRILH-DTS---	GTEKYFIKVVPTVYTYRISK
G.maxERV-B1	226	-----PKYPGIHN-----	PLDDT---	TRILH-DTS---	GTEKYFIKVVPTVYTYRISK
G.maxERV-B2	222	-----PKYPGIHN-----	PLDDT---	TRILH-DTS---	GTEKYFIKVVPTVYTYRISK
C.sativusERV-B	220	-----PKYPGIHN-----	PLDGT---	VRILR-DTS---	GTEKYFIKVVPTVYTYRISK
S.lycopersicumERV-B1	220	-----PKYPGIHN-----	PLDGT---	ERILR-GAS---	GTEKYFIKVVPTVYTYRISK
S.tuberosumERV-B1	213	-----PKYPGIHN-----	PLDGT---	ERILR-GAS---	GTEKYFIKVVPTVYTYRISK
S.lycopersicumERV-B2	222	-----PKYPGIHN-----	PLDGT---	SRILR-GTS---	GTEKYFIKVVPTVYTYRISK
S.tuberosumERV-B2	222	-----PKYPGIHN-----	PLDGT---	SRILR-GSS---	GTEKYFIKVVPTVYTYRISK
P.persicaERV-B	223	-----PKYPGIHN-----	PLDGT---	ERILH-DTS---	GTEKYFIKVVPTVYTYRISK
P.trichocarpaERV-B1	223	-----PKYPGIHN-----	PLDGT---	TRILH-ETS---	GTEKYFIKVVPTVYTYRISK
P.trichocarpaERV-B2	223	-----PKYPGIHN-----	PLDGT---	ARILR-ETS---	GTEKYFIKVVPTVYTYRISK
V.viniferaERV-B	223	-----PKYPGIHN-----	PLDGT---	VRILR-GAS---	GTEKYFIKVVPTVYTYRISK
T.cacaoERV-B	223	-----PKYPGIHN-----	PLDGT---	VRILH-DTS---	GTEKYFIKVVPTVYTYRISK

## BLOCK#5

C.subellipsoideaPDI-C 383 RPELSY-DAWEYTVH-----SHTYDTADTPAAKFFTYDLSPIQILVSEKRRAWYHFTTTTC

C.reinhardtiiPDI-C 388 RHTGNY-DAWEYTAH-----SHSYQSDSIP SARFTYDLSPIQILVHETSKPWYQFLTTSCTSC

V.carteriPDI-C 388 RHSGNY-DAWEYTAH-----SHTYQSDAIP SARFTYDLSPIQILVQETARWYQFLTTSCTSC

K.flaccidumPDI-C 437 PAHQYV-QSYDYTAH-----SNVFNAAAPVAKFHFELSPMQVVTENSRFSFSHFTTNVC

B.rapaPDI-C1 396 AQEHSLVVEEWEYTAH-----SSIAQTYYPVAKFHFELSPMQIMITENPKFSFSHFTTNLC

B.rapaPDI-C2 397 GQEHSLTEEHEYTAH-----SSITQTYYPVAKFHFELSPMQILITENPKFSFSHFTTNLC

E.salsugineumPDI-C1 396 GQEHSLIEEWEYTAH-----SSVAQTYYPVAKFHFELSPMQILITENPKFSFSHFTTNLC

A.thalianaPDI12 396 GQEHSLIEEWEYTAH-----SSVAQTYYPVAKFHFELSPMQILITENPKFSFSHFTTNLC

C.rubellaPDI-C1 396 GLEQAVIEEWEYTAH-----SSVAQTYYPVAKFHFELSPMQILITEDPKFSFSHFTTNLC

B.rapaPDI-C5 390 GQEHSVIEEWEYTAH-----SSVAQGYYPVAKFHFELSPMQVLI SENPKFSFSHFTTNVC

A.thalianaPDI13 397 GQEHSLIEEWEYTAH-----SSVAQSYHYPEAKFHFELSPMQVLI SENPKFSFSHFTTNVC

C.rubellaPDI-C3 396 GREHSLIEEWEYTAH-----SNVAQSYHYPEAKFHFELSPMQVLI SENPKFSFSHFTTNVC

B.rapaPDI-C6 396 GQEHSVIEEWEYTAH-----SSVAQGYYPVAKFHFELSPMQVLI SENPKFSFSHFTTNVC

E.salsugineumPDI-C3 397 GQEHSLIEEWEYTAH-----SNVAQSYHYPEAKFHFELSPMQVLI SENPKFSFSHFTTNVC

S.bicolorPDI-C 398 SKELKVLVEEWEYTAH-----SSLVQSFYVPVVKFHFEPSPMQVLTVEVPSFSFSHFTTNVC

Z.maysPDI-C 396 SKELKVLVEEWEYTAH-----SSLVQSFYVPVVKFHFEPSPMQVLTVEVPSFSFSHFTTNVC

B.distachyonPDI-C 398 SKELKVLVEEWEYTAH-----SSLVQSFYVPVVKFHFEPSPMQVLTTELPSFSFSHFTTNVC

O.sativaPDI-C 398 SKELKVLVEEWEYTAH-----SSLVQSFYVPVVKFHFEPSPMQVLTTELPSFSFSHFTTNVC

B.rapaPDI-C4 396 HAMV---EEWEYTAH-----SSVAQTYYPVAKFHFELSPMQVLI TENPKFSFSHFTTNVC

A.thalianaPDI7 396 QALV---EAWWEYTAH-----SSVAQSYYPVAKFHFELSPMQVLI TENPKFSFSHFTTNVC

C.rubellaPDI-C2 396 QVLI---EEWEYTAH-----SSVAQSYYPVAKFHFELSPMQVLI TENPKFSFSHFTTNVC

B.rapaPDI-C3 394 HAMV---EEWEYTAH-----SSVAQSYYPVAKFHFELSPMQVLI TENPKFSFSHFTTNVC

E.salsugineumPDI-C2 396 QALI---EEWEYTAH-----SSVAQSYYPVAKFHFELSPMQVLI TETSFSFSHFTTNVC

S.lycopersicumPDI-C 398 KLV---EEWEYTAH-----SSLVQSLHLPVAKFHFELSPMQVLI TENPKFSFSHFTTNVC

S.tuberosumPDI-C 398 KLV---EEWEYTAH-----SSLVQSLHLPVAKFHFELSPMQVLI TENPKFSFSHFTTNVC

M.truncatulaPDI-C1 396 YQLV---EEWEYTAH-----SSLAQSLHLPVAKFHFELSPMQVLI TEDHKSFSFSHFTTNVC

P.vulgarisPDI-C1 396 HKLV---EEWEYTAH-----SSVAQSLHLPVAKFHFELSPMQVLI TENPKFSFSHFTTNVC

G.maxPDI-C1 396 YKLV---EEWEYTAH-----SSVAQSLHLPVAKFHFELSPMQVLI TENPKFSFSHFTTNVC

G.maxPDI-C2 396 YKLV---EEWEYTAH-----SSVAQSLHLPVAKFHFELSPMQVLI TENPKFSFSHFTTNVC

M.truncatulaPDI-C2 393 YKLI---EEWEYTAH-----SSVAQSVNLPVAKFHFELSPMQVLI TENPKFSFSHFTTNVC

P.vulgarisPDI-C2 396 YKLI---EEWEYTAH-----SSVAQSVNLPVAKFHFELSPMQVLI TENPKFSFSHFTTNVC

G.maxPDI-C3 396 YKLI---EEWEYTAH-----SSVAQSLDLPVAKFHFELSPMQVLI TENPKFSFSHFTTNVC

G.maxPDI-C4 396 YKLI---EEWEYTAH-----SSVAQSVNLPVAKFHFELSPMQVLI TENPKFSFSHFTTNVC

V.viniferaPDI-C 398 HKLV---EEWEYTAH-----SSLVQSLYLPVAKFHFELSPMQVLI TENPKFSFSHFTTNVC

C.sativusPDI-C 397 GKLV---EEWEYTAH-----SSVSQSLYLPVAKFHFELSPMQVLI TENPKFSFSHFTTNVC

P.persicaPDI-C 396 HKLI---EEWEYTAH-----SSLVQSLQLPVAKFHFELSPMQVLI TENPKFSFSHFTTNVC

T.cacaoPDI-C 393 SREHSLIEEWEYTAH-----SSLAQSIYLPVTKFHFELSPMQVLI TENPKFSFSHFTTNVC

P.trichocarpaPDI-C1 397 SSERKLIEEWEYTAH-----SSLSQTVYMPVAKFHFELSPMQVLI TENPKFSFSHFTTNVC

P.trichocarpaPDI-C2 397 SAEHKLIEEWEYTAH-----SSLAQTVYMPVAKFHFELSPMQVLI TENPKFSFSHFTTNVC

S.moellendorffiiPDI-C 388 RKEFSLLEQMDYTSH-----SNTIQNTNVPVAKFHFELSPMQVLI KENPKFSFSHFTTNVC

P.patensPDI-C 399 QKDLRVLEQMDYTAH-----SNMIQSTKVPVVKFHFELSPMQVLI KENPKFSFSHFTTNVC

C.reinhardtiiERV-A 336 KTLST--NQFSVTEHFRD--AQGGAGRTLPGVFFFYDLSPIKVKVVEHGSFSLFSLTTSVC

V.carteriERV-A 302 KTLAT--NQFSVTEHFRD--SSQGGAGKTLPGVFFFYDLSPIKVKVVEHSSFSLFSLTTSVC

C.subellipsoideaERV-A 298 HTLNS--NQFSVTEHFKG--SQDFQAQ-LPGVFFFYDLSPIKVKVHETRMSFLHFLTTSVC

K.flaccidumERV-A 297 HVIST--NQFSVTEHFRD--QEVASGRSLPGVFFFYDLSPIKVKVTEQRQSFSLHFLTTSVC

B.distachyonERV-A3 296 RKIDS--NQFSVTEHFRD--GNV-PRPQPGVFFFYDFSPKVKVITEENRSFLHFLTTSVC

O.sativaERV-A3 296 RKIHS--NQFSVTEHFRD--GNI-RPKQPGVFFFYDFSPKVKVITEENRSLLHFLTTSVC

Z.maysERV-A3 296 RGIHS--NQFSVTEHFRD--GNV-RPKSQPGVFFFYDFSPKVKVITEENRSLLHFLTTSVC

Z.maysERV-A2 296 HNIHS--NQFSVTEHFRD--GNV-RPKQPGVFFFYDFSPKVKVITEENRSLLHFLTTSVC

S.bicolorERV-A3 296 HNIHS--NQFSVTEHFRD--GNI-LPKQPGVFFFYDFSPKVKVITEENRSLLHFLTTSVC

P.patensERV-A1 299 RKIST--NQFSAVTEHFKG--VGPGEHALPGVFFFYDLSPIKVKVTEKRMSEFHFHTTNVC

P.patensERV-A4 297 SELAT--NQFSVTEHYTA--GDHG-PRVPGVFFFYDLSPIKVKVTEKRSFSLHFLTTSVC

P.patensERV-A2 297 RKIST--NQFSVTEHYTA--GDHG-PRFVPGVFFFYDLSPIKVKVTEERPSFSLHFLTTSVC

P.patensERV-A3 297 RKIST--NQFSVMEHYTA--GDHGPRV-LPGVFFFYDLPKVKVTEERPSFSLHFLTTSVC

S.bicolorERV-A2 299 RKIYS--NQFSVTEHER---EAIGYPRPPPGVFFFYDFSPKVKVTEENTSLHFLTTSVC

B.distachyonERV-A2 299 RKIHS--NQFSVTEHER---EAIGYPRPPPGVFFFYDFSPKVKVTEENTSLHFLTTSVC

O.sativaERV-A2 299 RKINS--NQFSVTEHER---EAIGYPRPPPGVFFFYDFSPKVKVTEENTSLHFLTTSVC

S.moellendorffiiERV-A 297 HKIVT--NQFSVTEHFKA--VEGLNGRSLPGVFFFYDLSPIKVKVTEERKTSFSLHFLTTSVC

C.sativusERV-A3 297 RTVHS--NQFSVTEHFKS--VEFGSSQSLPGVFFFYDLSPIKVTYTEEHVSFSLHFLTTSVC

M.truncatulaERV-A2 297 RVIHS--NQFSVTEHFKS--SELGAA--VPGVFFFYDISPIKVNFKEEHIFSLHFLTTSVC

P.vulgarisERV-A2 297 RVIHS--NQFSVTEHFKS--SELGVA--VPGVFFFYDISPIKVNFKEEHIFSLHFLTTSVC

G.maxERV-A3 297 RVIHS--NQFSVTEHFKS--SELGVA--VPGVFFFYDISPIKVNFKEEHIFSLHFLTTSVC

G.maxERV-A4 297 RVIHS--NQFSVTEHFKS--SELGVA--VPGVFFFYDISPIKVNFKEEHIFSLHFLTTSVC

S.lycopersicumERV-A2 297 RTIDS--NQFSVTEHFKG--SDLGLFQSI TGVFFFYDLSPIKVTYTEEHVSFSLHFLTTSVC

S.tuberosumERV-A2 297 RTIDS--NQFSVTEHFKG--SDLGLFQSI TGVFFFYDLSPIKVTYTEEHVSFSLHFLTTSVC

P.persicaERV-A2 297 RTIRS--NQFSVTEHFKS--SELGSQLPGVFFFYDLSPIKVTYTEEHVSFSLHFLTTSVC

T.cacaoERV-A2 297 RTVHS--NQFSVTEHFKN--LEVIYPNSHPGVFFFYDFSPKVKVTEEHISFSLHFLTTSVC

P.trichocarpaERV-A3 297 RTVHS--NQFSVTEHFKT--SELMQLDLSLPGVFFFYDFSPKVKVTEEHISFSLHFMSTISIC

P.trichocarpaERV-A4 297 RTVHS--NQFSATEHFKK--SELTPLDSLPGVFFFYDFSPKVKVTEEHISFSLHFMSTISIC

C.sativusERV-A1 296 KALIS--NQFSVTEHLRG--IDGESFQALHGVFFFYDLSPIKVTYTEEHVSFSLHFLTTSVC

V.viniferaERV-A2 297 HTIQS--NQFSVTEHFRS--AEPGRPHSLPGVFFFYDLSPIKVTSKEEHISFSLHFMSTISIC

B.rapaERV-A4 293 KTIQS--NQFSVTEHFQN--AEAGRMQSPPGVFFFYDLSPIKVFIEQHVEFLHFLTTSVC

B.rapaERV-A3 293 HTIQS--NQFSVTEHFQK--MEAGRMQSPPGVFFFYDLSPIKVFIEQHVEFLHFLTTSVC

E.salsugineumERV-A2 297 NTIQS--NQFSVTEHFQN--AEAGRMQSPPGVFFFYDLSPIKVFIEQHVEFLHFLTTSVC

## BLOCK#5-----

A.thalianaERV-A2 297 NTIQS--NQFSVTEHFQN--MEAGMQSPGCVFFFYDLSPIKVIFFEQHVEFLHFITNVC  
 C.rubellaERV-A2 297 NTIQS--NQFSVTEHFQG--MEAGMQSPGCVFFFYDLSPIKVIFFEQHVEFLHFITNVC  
 B.rapaERV-A2 297 HVIQS--NQFSVTEHFQK--TEAGTQSLPGVFFFYDLSPIKVIFFEQHVEFLHFITNVC  
 E.salsugineumERV-A3 297 HIIQS--NQFSVTEHFQK--TEAGTQSLPGVFFFYDLSPIKVIFFEQHVEFLHFITNVC  
 B.distachyonERV-A1 297 QIILS--NQFSVTEHFARS--SESGRMAQLPGVFFFYDLSPIKVTFTERRHVSFLHFITNVC  
 O.sativaERV-A1 297 HIIILS--NQFSVTEHFARS--SESGRIQAVPGVFFFYDLSPIKVTFTERRHVSFLHFITNVC  
 S.bicolorERV-A1 297 HIIILS--NQFSVTEHFARS--GESGRMAQLPGVFFFYDLSPIKVTFTERRHVSFLHFITNVC  
 Z.maysERV-A1 297 HIIILS--NQFSVTEHFARS--GESGRMAQLPGVFFFYDLSPIKVTFTERRHVSFLHFITNVC  
 S.lycopersicumERV-A1 297 HTIQS--NQFSVTEHFQK--ADFGRFQSLPGVFFFYDLSPIKVTFTERRHVSFLHFITNVC  
 S.tuberosumERV-A1 297 HTIQS--NQFSVTEHFQK--ADFGRFQSLPGVFFFYDLSPIKVTFTERRHVSFLHFITNVC  
 B.rapaERV-A1 297 HTIQS--NQFSVTEHFVKS--SEAGQLQSLPGVFFFYDLSPIKVTFTERRHVSFLHFITNVC  
 E.salsugineumERV-A1 297 HSIHS--NQFSVTEHFVKS--SEAGQLQSLPGVFFFYDLSPIKVTFTERRHVSFLHFITNVC  
 A.thalianaERV-A1 297 HTIQS--NQFSVTEHFVKS--SEAGQLQSLPGVFFFYDLSPIKVTFTERRHVSFLHFITNVC  
 C.rubellaERV-A1 297 HTIQS--NQFSVTEHFVKS--SEAGQLQSLPGVFFFYDLSPIKVTFTERRHVSFLHFITNVC  
 V.viniferaERV-A1 297 HTIIST--NQFSVTEHFERN--AELGRLQSLPGVFFFYDLSPIKVTFTERRHVSFLHFITNVC  
 C.sativusERV-A2 297 YTIQS--NQFSVTEHFVRT--AEVGRQSLPAVFFFYDLSPIKVTFTERRHVSFLHFITNVC  
 M.truncatulaERV-A1 297 NTIQS--NQFSVTEHFRT--ADVGRQSLPGVFFFYDLSPIKVTFTERRHVSFLHFITNVC  
 P.persicaERV-A1 297 HTIQS--NQFSVTEHFRT--GVDGRQSLPGVFFFYDLSPIKVTFTERRHVSFLHFITNVC  
 P.vulgarisERV-A1 297 HTIQS--NQFSVTEHFRT--GVDGRQSLPGVFFFYDLSPIKVTFTERRHVSFLHFITNVC  
 G.maxERV-A1 297 HTIQS--NQFSVTEHFRT--GVDGRQSLPGVFFFYDLSPIKVTFTERRHVSFLHFITNVC  
 G.maxERV-A2 297 HTIQS--NQFSVTEHFRT--GVDGRQSLPGVFFFYDLSPIKVTFTERRHVSFLHFITNVC  
 T.cacaoERV-A1 297 HTIQS--NQFSVTEHFQK--AEINRQSLPGVFFFYDLSPIKVTFTERRHVSFLHFITNVC  
 P.trichocarpaERV-A1 297 HTIQS--NQFSVTEHFRT--ADIGRQSLPGVFFFYDLSPIKVTFTERRHVSFLHFITNVC  
 P.trichocarpaERV-A2 288 HTIQS--NQFSVTEHFRT--ADIGRQSLPGVFFFYDLSPIKVTFTERRHVSFLHFITNVC  
 C.reinhardtiiERV-B 259 RATEI--HQMSVTEHY----AQPLQRYAPAVDVHYDLSPIVMTNERPPSLLHFIVRILC  
 V.carteriERV-B 257 RVTEI--HQMSVTEHY----TQPLEPGYVPTLDVHYDLSPIVMTNERPPSLLHFIVRILC  
 C.subellipsoideaERV-B 243 TRTTI--NQMSVTEYDTV--VHKGMQ--MPSVWFSDYIISPISVTISEIRRSFAHLIVRIFC  
 K.flaccidumERV-B 267 DHVEI--NQMSVTEYTMP---SSMQPGGLPAVYFLYDLSPIAVKVTERRRNFHGHLTRILC  
 P.patensERV-B 260 EVMPT--NQFSVTEYIQ---RTKPSDRSYPAVYFLYDLSPIVVTREHRRNFHGHLTRILC  
 S.moellendorffiiERV-B 251 GKLPIT--NQFSVGEYIL---AARDDDISWPAVYFLYDLSPIVTLKEERRSFGHLTRIFC  
 S.bicolorERV-B 262 KVLPTI--NQFSVTEYELP--IRPSDEA--WPAVYFLYDLSPIVTLKEERRNLFHFLTRILC  
 Z.maysERV-B 262 KVLPTI--NQFSVTEYELP--IRPTDEA--WPAVYFLYDLSPIVTLKEERRNLFHFLTRILC  
 B.distachyonERV-B 261 QVLPIT--NQFSVTEYVVP--IRPADRS--WPAVYFLYDLSPIVTLKEERRNLFHFLTRILC  
 O.sativaERV-B 261 QVLPIT--NQFSVTEYVVP--KRATDRSAWPAVYFLYDLSPIVTLKEERRNLFHFLTRILC  
 B.rapaERV-B2 261 DILTIT--NQMSVTEYITP--MNEFDEI--WPAVYFLYDLSPIVTLKEERRSFLHFLTRILC  
 B.rapaERV-B1 264 DVLSTI--NQMSVTEYITP--MNEFDEI--WPAVYFLYDLSPIVTLKEERRSFLHFLTRILC  
 E.salsugineumERV-B 260 DVLSTI--NQMSVTEYITP--MNEFDEI--WPAVYFLYDLSPIVTLKEERRSFLHFLTRILC  
 A.thalianaERV-B 268 DVLSTI--NQMSVTEYITP--MTEFDEI--WPAVYFLYDLSPIVTLKEERRSFLHFLTRILC  
 C.rubellaERV-B 268 DVLSTI--NQMSVTEYITP--MTDFDEI--WPAVYFLYDLSPIVTLKEERRSFLHFLTRILC  
 M.truncatulaERV-B 269 EVLPTI--NQFSVTEYI--SPITSQFDEI--WPAVYFLYDLSPIVTLKEERRSFLHFLTRILC  
 P.vulgarisERV-B 263 EVLPTI--NQFSVSEYI--SP--INQFDEI--WPAVYFLYDLSPIVTLKEERRSFLHFLTRILC  
 G.maxERV-B1 266 EVLPTI--NQFSVSEYI--SP--INQFDEI--WPAVYFLYDLSPIVTLKEERRSFLHFLTRILC  
 G.maxERV-B2 262 EVLPTI--NQFSVSEYI--SP--INQFDEI--WPAVYFLYDLSPIVTLKEERRSFLHFLTRILC  
 C.sativusERV-B 260 AVLPTI--NQFSVTEYI--SP--MTDSDRS--WPAVYFLYDLSPIVTLKEERRSFLHFLTRILC  
 S.lycopersicumERV-B1 260 EVLPTI--NQFSVSEYI--SP--INEFDEI--WPAVYFLYDLSPIVTLKEERRNLFHFLTRILC  
 S.tuberosumERV-B1 253 EVLPTI--NQFSVSEYI--SP--INEFDEI--WPAVYFLYDLSPIVTLKEERRNLFHFLTRILC  
 S.lycopersicumERV-B2 262 EVLPTI--NQFSVTEYI--SP--IHDFEIT--WPAVYFLYDLSPIVTLKEERRSFLHFLTRILC  
 S.tuberosumERV-B2 262 EVSPTI--NQFSVTEYI--SP--IHDFEIT--WPAVYFLYDLSPIVTLKEERRSFLHFLTRILC  
 P.persicaERV-B 263 EVLPTI--NQFSVTEYI--SP--MKQFDEI--WPAVYFLYDLSPIVTLKEERRSFLHFLTRILC  
 P.trichocarpaERV-B1 263 EVLPTI--NQFSVTEYI--SP--MTDFDEI--WPAVYFLYDLSPIVTLKEERRSFLHFLTRILC  
 P.trichocarpaERV-B2 263 DVLPTI--NQFSVTEYI--SP--ITDFDEI--WPAVYFLYDLSPIVTLKEERRSFLHFLTRILC  
 V.viniferaERV-B 263 EVLPTI--NQFSVMEYI--SP--MNEFDEI--WPAVYFLYDLSPIVTLKEERRSFLHFLTRILC  
 T.cacaoERV-B 263 EVLPTI--NQFSVSEYI--SP--MHEFDEI--WPAVYFLYDLSPIVTLKEERRSFLHFLTRILC



----->

C. subellipsoideaPDI-C	437	AIIGGVFTVAGIVDGLVHTGARFAKK--VELGKHT
C. reinhardtiiPDI-C	442	AIIGGVFTVAGILDALLYQSFKVVKK--LNLGKQG
V. carteriPDI-C	442	AIIGGVFTVAGILDALLYQSFKVVKK--LNLGKQG
K. flaccidumPDI-C	491	AIIGGVFTVAGIVDGLVHTGARFAKK--VELGKQF
B. rapaPDI-C1	451	AIIGGVFTVAGILDSIFHNTRLRLVKK--VELGKNF
B. rapaPDI-C2	452	AIIGGVFTVAGILDSVHLNTRLRLVKK--VELGKNI
E. salsugineumPDI-C1	451	AIIGGVFTVAGILDSIFHNTRLRLVKK--VELGKNI
A. thalianaPDI12	451	AIIGGVFTVAGILDSIFHNTRLRLVKK--VELGKNI
C. rubellaPDI-C1	451	AIIGGVFTVAGILDSIFHNTRLRLVKK--VELGKNI
B. rapaPDI-C5	445	AIIGGVFTVAGILDSIFQSTYGYMKK--VELGKNF
A. thalianaPDI13	452	AIIGGVFTVAGILDSIFQNTVRLVKK--TELGKNI
C. rubellaPDI-C3	451	AIIGGVFTVAGILDSIFQNTVRLVKK--TELGKNI
B. rapaPDI-C6	451	AIIGGVFTVAGILDSIFQNTFRLVKK--TELGKNI
E. salsugineumPDI-C3	452	AIIGGVFTVAGILDSIFQNTIRLVKK--VELGKNI
S. bicolorPDI-C	453	AIIGGVFTVAGILDSIFHNTRLRLVKK--VELGKNI
Z. maysPDI-C	451	AIIGGVFTVAGILDSIFHNTRLRLVKK--TELGKNI
B. distachyonPDI-C	453	AIIGGVFTVAGILDSIFHNTRLRLVKK--VELGKDI
O. sativaPDI-C	453	AIIGGVFTVAGILDSIFHNTRLRLVKK--VELGKNI
B. rapaPDI-C4	448	AIIGGVFTVAGILDSILHQTMMLMCK--TELGKNF
A. thalianaPDI7	448	AIIGGVFTVAGILDSILHSMMLMCK--TELGKNF
C. rubellaPDI-C2	448	AIIGGVFTVAGILDSILHSMMLMCK--TELGKNF
B. rapaPDI-C3	446	AIIGGVFTVAGILDSILHQTMMLMCK--TELGKNF
E. salsugineumPDI-C2	448	AIIGGVFTVAGILDSILHQTMMLMCK--TELGKNF
S. lycopersicumPDI-C	449	AIIGGVFTVAGILDSILHNTRMLMCK--VELGKNF
S. tuberosumPDI-C	449	AIIGGVFTVAGILDSILHNTRMLMCK--VELGKNF
M. truncatulaPDI-C1	448	AIIGGVFTVAGILDSILHNTRLRLMCK--VELGKNF
P. vulgarisPDI-C1	448	AIIGGVFTVAGILDSILHNTRLRLMCK--VELGKNF
G. maxPDI-C1	448	AIIGGVFTVAGILDSILHNTRLRLMCK--VELGKNF
G. maxPDI-C2	448	AIIGGVFTVAGILDSILHNTRLRLMCK--VELGKNF
M. truncatulaPDI-C2	445	AIIGGVFTVAGILDSILHNTRKAMCK--TELGKNF
P. vulgarisPDI-C2	448	AIIGGVFTVAGILDSILHNTRMLMCK--VELGKNF
G. maxPDI-C3	448	AIIGGVFTVAGILDSILHNTRMLMCK--TELGKNF
G. maxPDI-C4	448	AIIGGVFTVAGILDSILHNTRMLMCK--VELGKNF
V. viniferaPDI-C	450	AIIGGVFTVAGILDSVHLNTRMLMCK--TELGKNF
C. sativusPDI-C	449	AIIGGVFTVAGILDSILHNTRLRLMCK--VELGKNF
P. persicaPDI-C	448	AIIGGVFTVAGILDSILHNTRMLMCK--VELGKNF
T. cacaoPDI-C	448	AIIGGVFTVAGILDSILHNTRLRLMCK--VELGKNF
P. trichocarpaPDI-C1	452	AIIGGVFTVAGILDSILHSTVRLMCK--VELGKNF
P. trichocarpaPDI-C2	452	AIIGGVFTVAGILDSILHNTRMLMCK--VELGKNF
S. moellendorffiiPDI-C	443	AIIGGVFTVAGIVDSMLHGAMRMVKK--TELGKQF
P. patensPDI-C	454	AIIGGVFTVAGIIDSMLHNAMHIMCK--VELGKQY
C. reinhardtiiERV-A	392	AIIGGVFTVSGIVDAFVYTGTRMICK--KMEIGKFS
V. carteriERV-A	359	AIIGGVFTVSGIVDAFIYTSRRLVKK--KMEIGKFS
C. subellipsoideaERV-A	353	AIIGGVFTVAGIVDAFIYHGHQAIKK--KVDLIGKQI
K. flaccidumERV-A	353	AIIGGVFTVSGIIDAFAVYHGHKVLKK--KMEIGKLN
B. distachyonERV-A3	351	AIIGGVFTVSGIIDSFIYHGHQKALKK--KMEIGKYR
O. sativaERV-A3	351	AIIGGVFTVSGIIDSFIYHGHQKALKK--KMEIGKYR
Z. maysERV-A3	351	AIIGGVFTVSGIIDSFIYHGHQKALKK--KMEIGKYR
Z. maysERV-A2	351	AIIGGVFTVSGIIDSFIYHGHQKALKK--KMEIGKYR
S. bicolorERV-A3	351	AIIGGVFTVSGIIDSFIYHGHQKALKK--KMEIGKYR
P. patensERV-A1	355	AIIGGVFTVSGIIDAFAVYHGHQKALKK--RIGKDT
P. patensERV-A4	352	AIIGGVFTVSGIIDSFIYHGHRAIKK--KMEIGKFS
P. patensERV-A2	352	AIIGGVFTVSGIIDSFIYHGHRAIKK--KMEIGKLS
P. patensERV-A3	352	AIIGGVFTVSGIIDSFIYHGHRAIKK--KMEIGKLS
S. bicolorERV-A2	354	AIIGGVFTVSGIIDSFIYHGHRAIKK--KMEIGKLG
B. distachyonERV-A2	354	AIIGGVFTVSGIIDSFIYHGHRAIKK--KMEIGKLG
O. sativaERV-A2	354	AIIGGVFTVSGIIDSFIYHGHRAIKK--KMEIGKLG
S. moellendorffiiERV-A	353	AIIGGVFTVSGIIDSFIYHGHRAIKK--KMEIGKYI
C. sativusERV-A3	353	AIIGGVFTVSGIIDSFIYHGHRAIKK--KMEIGKFG
M. truncatulaERV-A2	351	AIIGGVFTVSGIIDSFIYHGHRAIKK--KMEIGKYR
P. vulgarisERV-A2	351	AIIGGVFTVSGIIDSFIYHGHRAIKK--KMEIGKYT
G. maxERV-A3	351	AIIGGVFTVSGIIDSFIYHGHRAIKK--KMEIGKFT
G. maxERV-A4	351	AIIGGVFTVSGIIDSFIYHGHRAIKK--KMEIGKFT
S. lycopersicumERV-A2	353	AIIGGVFTVAGILDACIYHGHRAIKK--KMEIGKFG
S. tuberosumERV-A2	353	AIIGGVFTVAGILDACIYHGHRAIKK--KMEIGKFG
P. persicaERV-A2	353	AIIGGVFTVAGIIDSFIYHGHRAIKK--KMEIGKFG
T. cacaoERV-A2	353	AIIGGVFTVAGIIDSFIYHGHRAIKK--KMEIGKFG
P. trichocarpaERV-A3	353	AIIGGVFTVAGIIDSFIYHGHRAIKK--KMEIGKFS
P. trichocarpaERV-A4	353	AIIGGVFTVAGIIDSFIYHGHRAIKK--KMEIGKFG
C. sativusERV-A1	352	AIIGGVFTVSGIIDSFIYHGHRAIKK--KMEIGKFT
V. viniferaERV-A2	353	AIIGGVFTVSGIIDSFIYHGHRAIKK--KMEIGKFS
B. rapaERV-A4	349	AIIGGVFTVSGIIDSFIYHGHRAIKK--KMEIGKFN
B. rapaERV-A3	349	AIIGGVFTVSGIIDSFIYHGHRAIKK--KMEIGKFN
E. salsugineumERV-A2	353	AIIGGVFTVSGIIDSFIYHGHRAIKK--KMEIGKFN

----->

A.thalianaERV-A2	353	AIVGGIFTVSGIIVDSFIYHGQRAIKK-KMETGKFN
C.rubellaERV-A2	353	AIVGGIFTVSGILDSFIYHGQRAIKK-KMETGKFN
B.rapaERV-A2	353	AIVGGIFTVSGIIVDSFVYHGQRAIKK-KMETGKFG
E.salsugineumERV-A3	353	AIVGGIFTVSGIIVDSFIYHGQRAIKK-KMETGKFG
B.distachyonERV-A1	353	AIVGGVFTVSGIIVDSFVYHGQRAIKK-KMETGKFN
O.sativaERV-A1	353	AIVGGVFTVSGIIVDSFVYHGQRAIKK-KMETGKFN
S.bicolorERV-A1	353	AIVGGVFTVSGIIVDSFVYHGQRAIKK-KMETGKFN
Z.maysERV-A1	353	AIVGGVFTVSGIIVDSFVYHGQRAIKK-KMETGKFN
S.lycopersicumERV-A1	353	AIVGGVFTVSGILDSFIYHGQKAIKK-KMETGKFS
S.tuberosumERV-A1	353	AIVGGVFTVSGILDSFIYHGQKAIKK-KMETGKFS
B.rapaERV-A1	353	AIVGGVFTVSGIIVDAFIYHGQKAIKK-KMETGKFS
E.salsugineumERV-A1	353	AIVGGVFTVSGIIVDAFIYHGQKAIKK-KMETGKFS
A.thalianaERV-A1	353	AIVGGVFTVSGIIVDAFIYHGQKAIKK-KMETGKFS
C.rubellaERV-A1	353	AIVGGVFTVSGIIVDAFIYHGQKAIKK-KMETGKFN
V.viniferaERV-A1	353	AIVGGVFTVSGILDSFIYHGQKAIKK-KMETGKFS
C.sativusERV-A2	353	AIVGGVFTVSGILDSFIYHGQKVIKK-KMETGKFS
M.truncatulaERV-A1	353	AIVGGIFTVSGILDSFIYHGQKAIKK-KMETGKFS
P.persicaERV-A1	353	AIVGGVFTVSGILDSFIYHGQKAIKK-KMETGKFS
P.vulgarisERV-A1	353	AIVGGIFTVSGILDSFIYHGQRAIKK-KMETGKFN
G.maxERV-A1	353	AIVGGIFTVSGILDSFIYHGQRAIKK-KMETGKFN
G.maxERV-A2	353	AIVGGIFTVSGILDSFIYHGQRAIKK-KMETGKFN
T.cacaoERV-A1	353	AIVGGVFTVSGILDSFIYHGQRAIKK-KMETGKYS
P.trichocarpaERV-A1	353	AIVGGVFTVSGILDTFIYHGQKAIKK-KMETGKFS
P.trichocarpaERV-A2	344	AIVGGVFTVSGILDSFIYHGQKAIKK-KMETGKFS
C.reinhardtiiERV-B	312	AVVGGVFALTRITDRVVDWLVRLVTK-AAARGP--
V.carteriERV-B	310	AVVGGAFALTRMTDRVVDWVRLVTK-----LK
C.subellipsoideaERV-B	298	AVVGGVFALTGMDRVMHRIVTAIFS-----ASS
K.flaccidumERV-B	322	AVLGGTFAVTGMIDKWTYKTVQLFTS-QRSSGSQ-
P.patensERV-B	315	AVLGGTFAVTGMIDRWMRSRIIDFVMS--TSKQGF
S.moellendorffiiERV-B	306	AVVGGTFSLTGMIDRWIYRLVESITR---AKGVLI
S.bicolorERV-B	317	AVLGGTFAVTGMIDRWMYRLIESVTN-SKTRSVLR
Z.maysERV-B	317	AVLGGTFAVTGMIDRWMYQLIKTVTN-SKTRSVLR
B.distachyonERV-B	316	AVLGGTFAVTGMIDRWMYRIIESVSS-SKPRSVLR
O.sativaERV-B	317	AVLGGTFAVTGMIDRWMYRLIESVTK-SKTRSVLR
B.rapaERV-B2	316	AVLGGTFALTGMIDRWMMFRIIESFTKKPSTRSIHK
B.rapaERV-B1	319	AVLGGTFALTGMIDRWMMFRIIESFTKKPSTRSIHK
E.salsugineumERV-B	315	AVLGGTFALTGMIDRWMMFRIIESFTKKPSTRSIHK
A.thalianaERV-B	323	AVLGGTFALTGMIDRWMMFRIESFNKKPSTR---
C.rubellaERV-B	323	AVLGGTFALTGMIDRWMMFRIESFNK-NTNTRSMH
M.truncatulaERV-B	325	AVLGGTFAVTGMIDRWMYRLVEAATK-PKNKK---
P.vulgarisERV-B	318	AVLGGTFAVTGMIDRWMYRLLEALTK-SKSKR---
G.maxERV-B1	321	AVLGGTFAVTGMIDRWMYRLLEALTK-SKSKR---
G.maxERV-B2	317	AVLGGTFAVTGMIDRWMYRLLETITK-SKSKR---
C.sativusERV-B	315	AVLGGTFAVTGMIDRWMMRFLEALTK---PKRRT
S.lycopersicumERV-B1	315	AVLGGTFALTGMIDRWMMRFLEAVMK-KNSRSLVR
S.tuberosumERV-B1	308	AVLGGTFALTGMIDRWMMRFLEAVMK-KDSRGLVR
S.lycopersicumERV-B2	317	AVLGGTFALTGMIDRWMMYKILESFTK-KNSRTIVR
S.tuberosumERV-B2	317	AVLGGTFALTGMIDRWMMYKILESFTK-KNSRTIVR
P.persicaERV-B	318	AVLGGTFALTGMIDRWMMYFLEAVTK-PNARSVLR
P.trichocarpaERV-B1	318	AVLGGTFALTGMIDRWMMYRLLEALTK-PNPRSVLR
P.trichocarpaERV-B2	318	AVLGGTFALTGMIDRWMMYRLLEALTK-PNRSGSFL
V.viniferaERV-B	318	AVLGGTFALTGMIDRWMMYFLEMVTK-PNAKSVYR
T.cacaoERV-B	318	AVLGGTFALTGMIDRWMMFLIEGLTK-PSHKGVLR