(before) **(after)**

Fig. S1A: An example of GSA-MPSA

▲phase0 ▲phase1 ▲phase2

Fig. S1B: An example of GSA-MPSA

▼phase0 ▼phase1 ▼phase2

(before)

>RBP_M50_Org.1 [15:368] (1 - 368)

```
  1 M-----------------------------------------------------------| Aquicoer22023107
  1 M-----------------------------------------------------------| Arablyra16051447
  1 M-----------------------------------------------------------| Arabthal19639586
  1 M-----------------------------------------------------------| Arabthal19643610
  1 ------------------------------------------------------------| Ricicomm16828883
  1 MR----------------------------------------------------------| Caripapa16415391
  1 M-----------------------------------------------------------| Oryzsati24147382
  1 M-----------------------------------------------------------| Zea_mays20838612
  1 M-----------------------------------------------------------| Zea_mays20839405
  1 M-----------------------------------------------------------| Zea_mays20865706
  1 M-----------------------------------------------------------| Zea_mays20841553
  1 M-----------------------------------------------------------| Setaital19693586
  1 MW----------------------------------------------------------| Cucusati16966640
  1 M-----------------------------------------------------------| Cucusati16971357
  1 MPLPKAKQEETYGVPRSPLGRRQKSLPLKTEGTSDYSKPKRTRRGIGSPFTLFLGRNSGN| Gossraim26824973
    @

  2 ------------------------------------------------------------| Aquicoer22023107
  2 ------------------------------------------------------------| Arablyra16051447
  2 ------------------------------------------------------------| Arabthal19639586
  2 ------------------------------------------------------------| Arabthal19643610
  1 ------------------------------------------------------------| Ricicomm16828883
  3 ---------------------------------------------------------NI| Caripapa16415391
  2 ------------------------------------------------------------| Oryzsati24147382
  2 ------------------------------------------------------------| Zea_mays20838612
  2 ------------------------------------------------------------| Zea_mays20839405
  2 ------------------------------------------------------------| Zea_mays20865706
  2 ------------------------------------------------------------| Zea_mays20841553
  2 ------------------------------------------------------------| Setaital19693586
  3 ------------------------------------------------------------| Cucusati16966640
  2 ------------------------------------------------------------| Cucusati16971357
 61 GNSKPLSGWLNGFGRILNKRVCEIPVPLFFAARPFNQQISDVMKQLSKKVASNCSEILS-| Gossraim26824973


  2 --------------------GGLDGEQKQLINKLVNFRMKEGKRTRVRAIVYQTFHRPAR| Aquicoer22023107
  2 --------------------GGLDGEQKLLIKKLVNFRMKEGKRTRVRAIVYQTFHRPAR| Arablyra16051447
  2 --------------------GGLDGEQKLLIKKLVNFRMKEGKRTRVRAIVYQTFHRPAR| Arabthal19639586
  2 --------------------GGLDGEQKLLIKKLVNFRMKEGKRTRVRAIVYQTFHRPAR| Arabthal19643610
  1 ------------------------------------MKEGKRTRVRAIVYQTFHRLAR| Ricicomm16828883
  5 NISASSSKAAASNCSEILSYMGGLDGEQKQLIKKLVNFRMKEGKRTRVRAIVYQTFHRPAR| Caripapa16415391
  2 --------------------GDFDGEQKELIKKLVNFRMIDGKRTRVRAIVYKTFHRLAR| Oryzsati24147382
  2 --------------------GDFDGEQKELIKKLVNFRMIDGKRTRVRAIVYKTFHRLAR| Zea_mays20838612
  2 --------------------GDFDGEQKELIKKLVNFRMIDGKRTRVRAIVYKTFHRLAR| Zea_mays20839405
  2 --------------------GDFDGEQKELIKKLVNFRMIDGKRTRVRAIVYKTFHRLAR| Zea_mays20865706
  2 --------------------GDFDGEQKELIKKLVNFRMIDGKRTRVRAIVYKTFHRLAR| Zea_mays20841553
  2 --------------------GDFDGEQKELIKKLVNFRMIDGKRTRVRAIVYKTFHRLAR| Setaital19693586
  3 --------------------GGLDGEQKELIKKLVNFRMKEGKRTKVRVILSQTLNRPAQ| Cucusati16966640
  2 --------------------GGLDGEQKELIKKLVNFRMKEGKRTRVRAILYQTLNRPAQ| Cucusati16971357
120 ------------------YMGGLDGEQKQLIKKLVNFRMKE--------------------| Gossraim26824973
                        . o_.__+ @@j+@@_$+M _.++.+@+ @@ j.oj+ .j


 42 -TERDVIKLMVDAVEHIKPICEVEKVGVAGKIYDVPGIVARDRQQTLAIRWILGAAFKRR| Aquicoer22023107
 42 -TERDVIKLMVDAVENIKPICEVAKVGVAGTIYDVPGIVARDRQQTLAIRWILEAAFKRR| Arablyra16051447
 42 -TERDVIKLMVDAVENIKPICEVAKVGVAGTIYDVPGIVARDRQQTLAIRWILEAAFKRR| Arabthal19639586
 42 -TERDVIKLMVDAVENIKPICEVAKVGVAGTIYDVPGIVARDRQQTLAIRWILEAAFKRR| Arabthal19643610
 23 -TERDVIKLMVDAIDNIKPICEVEKVGVAGTIYDVPGIVARDRQQTLAIRWILEAAFKRR| Ricicomm16828883
 65 RTERDVIQFLVDAVENIKPICEVEKVRVAGTIYDVPGIVARDRQQTLAIRWILEAAFKRR| Caripapa16415391
 42 -TERDVIKLMVDAVDNIKPICEVVKVGVAGTIYDVPGILARDRQQTLAIRWILGAAFKRR| Oryzsati24147382
 42 -TERDVIKLMVDAVDNIKPICEVVKVGVAGTIYDVPGIVARDRQQTLAIRWILGAAFKRR| Zea_mays20838612
 42 -TERDVIKLMVDAVDNIKPICEVVKVGVAGTIYDVPGIVARDRQQTLAIRWILGAAFKRR| Zea_mays20839405
 42 -TERDVIKLMVDAVDNIKPICEVVKVGVAGTIYDVPGIVARDRQQTLAIRWILGAAFKRR| Zea_mays20865706
 42 -TERDVIKLMVDAVDNIKPICEVVKVGVAGTIYDVPGIVARDRQQTLAIRWILGAAFKRR| Zea_mays20841553
 42 -TERDVIKLMVDAVDNIKPICEVVKVGVAGTIYDVPGIVARDRQQTLAIRWILGAAFKRR| Setaital19693586
 43 -TERDGIKLMVEAVENIKPICEVEKVRVATTFYGVPGIVANDRQQTLAIRWIFEAAFKRR| Cucusati16966640
 42 -TERDGIKLMVEAVENIKPICEVEKVRVAATFYDVPGIVARDRQQTLAIRWILEAAFKRR| Cucusati16971357
143 --------------VNIKPICEVEKVRIAGTIYDVPGIVAKDRQQTLAIRWILEAAFKRR| Gossraim26824973
     ._+_ @jo@@_.@_jIKPICEV KV @A. oY VPGI@AjDRQQTLAIRWIo AAFKRR


101 ISYRISLEKCSFAEILDAYRKRGIARKKRENLHGLASTNR--RFAHFR------------| Aquicoer22023107
101 ISYRISLEKCSFAEILDAYQKRGSARRKRENLHGLASTNR--SFAHFR------------| Arablyra16051447
101 ISYRISLEKCSFAEILDAYQKRGSARRKRENLHGLASTNR--SFAHFR------------| Arabthal19639586
101 ISYRISLEKCSFAEILDAYQKRGSARRKRENLHGLASTNR--SFAHFR------------| Arabthal19643610
 82 ISYRISLEKCSFAEILDAYRKRGIA-------------------------------------| Ricicomm16828883
125 ISYRISLEKCSFDEILDAYKKMGIARKKRENLHGLASTNR--SFAHFR------------| Caripapa16415391
101 ISYRISLEKCSFAEILDAYRKRGISRKRRGNLHGLASTNR--SFAHFR------------| Oryzsati24147382
101 ISYRISLEKCSFAEILDAYRKRGISRKRRENLHGLASTNR--SFAHFR------------| Zea_mays20838612
101 ISYRISLEKCSFAEILDAYRKRGISRKRRENLHGLASTNR--SFAHFR------------| Zea_mays20839405
101 ISYRISLEKCSFAEILDAYRKRGISRKRRENLHGLASTNR--SFAHFR------------| Zea_mays20865706
101 ISYRISLEKCSFAEILDAYRKRGISRKRRENLHGLASTNR--SFAHFR------------| Zea_mays20841553
101 ISYRISLEKCSFAEILDAYRKRGISRKRRKNLHGLASTNR--SFAHFR------------| Setaital19693586
102 ISYKISLEKCSFDEILDAYRKRGIARKKRENLHRLASTNR--SFAHFR------------| Cucusati16966640
101 ISYRISLEKCSFDEILDAYRKRGIARKKRENLHRLASTNR--SFAHFR------------| Cucusati16971357
189 ISYRISLEKCSFAEILDAYRKRGIARKKRENLHGLSSTNRVGPFTPFRLTRGADLINALQ| Gossraim26824973
    ISY+ISLEKCSF EILDAYjK G .++++ _@+ @..._+   $. $+


147 ----------------------------------------------WW----------| Aquicoer22023107
147 ----------------------------------------------WW----------| Arablyra16051447
147 ----------------------------------------------WW----------| Arabthal19639586
147 ----------------------------------------------WW----------| Arabthal19643610
107 ------------------------------------------------------------| Ricicomm16828883
171 ----------------------------------------------WW----------| Caripapa16415391
147 ----------------------------------------------WW----------| Oryzsati24147382
147 ----------------------------------------------WW----------| Zea_mays20838612
147 ----------------------------------------------WW----------| Zea_mays20839405
147 ----------------------------------------------WW----------| Zea_mays20865706
147 ----------------------------------------------WW----------| Zea_mays20841553
147 ----------------------------------------------WW----------| Setaital19693586
148 ----------------------------------------------WW----------| Cucusati16966640
147 ----------------------------------------------WW----------| Cucusati16971357
249 REGSQVSHVVNFWGQAKVRARHLAMNSVTGSLSLCLVLASQVGIDSSERWACHVKAGPSN| Gossraim26824973
                                                  $


149 --------                                                  | Aquicoer22023107
149 --------                                                  | Arablyra16051447
149 --------                                                  | Arabthal19639586
149 --------                                                  | Arabthal19643610
107 --------                                                  | Ricicomm16828883
173 --------                                                  | Caripapa16415391
149 --------                                                  | Oryzsati24147382
149 --------                                                  | Zea_mays20838612
149 --------                                                  | Zea_mays20839405
149 --------                                                  | Zea_mays20865706
149 --------                                                  | Zea_mays20841553
149 --------                                                  | Setaital19693586
150 --------                                                  | Cucusati16966640
149 --------                                                  | Cucusati16971357
309 DCTKSLRH                                                  | Gossraim26824973
```

(after)

>RBP_M50_Trd.1 [15:150] (1 - 150)

```
  1 M-GGLDGEQKQLINKLVNFRMKEGKRTRVRAIVYQTFHRPAR-TERDVIKLMVDAVEHIK| Aquicoer22023107
  1 M-GGLDGEQKLLIKKLVNFRMKEGKRTRVRAIVYQTFHRPAR-TERDVIKLMVDAVENIK| Arablyra16051447
  1 M-GGLDGEQKLLIKKLVNFRMKEGKRTRVRAIVYQTFHRPAR-TERDVIKLMVDAVENIK| Arabthal19639586
  1 M-GGLDGEQKLLIKKLVNFRMKEGKRTRVRAIVYQTFHRPAR-TERDVIKLMVDAVENIK| Arabthal19643610
  1 M-GDFDGEQKELIKKLVNFRMIDGKRTRVRAIVYKTFHRLAR-TERDVIKLMVDAVDNIK| Oryzsati24147382
  1 M-GDFDGEQKELIKKLVNFRMIDGKRTRVRAIVYKTFHRLAR-TERDVIKLMVDAVDNIK| Zea_mays20838612
  1 M-GDFDGEQKELIKKLVNFRMIDGKRTRVRAIVYKTFHRLAR-TERDVIKLMVDAVDNIK| Zea_mays20839405
  1 M-GDFDGEQKELIKKLVNFRMIDGKRTRVRAIVYKTFHRLAR-TERDVIKLMVDAVDNIK| Zea_mays20865706
  1 M-GDFDGEQKELIKKLVNFRMIDGKRTRVRAIVYKTFHRLAR-TERDVIKLMVDAVDNIK| Zea_mays20841553
  1 M-GDFDGEQKELINKLVNFRMIDGKRTRVRAIVYKTFHRLAR-TERDVIKLMVDAVDNIK| Setaital19693586
  1 MWGGLDGEQKELIKKLVNFRMKEGKRTKVRVILSQTLNRPAQ-TERDGIKLMVEAVENIK| Cucusati16966640
  1 M-GGLDGEQKELIKKLVNFRMKEGKRTRVRAILYQTLNRPAQ-TERDGIKLMVEAVENIK| Cucusati16971357
  1 M-GGLDGEQKQLIKKLVNFRMKEGKRTRVRAIVYQTFHRLAR-TERDVIKLMVDAIDNIK| Ricicomm16828883
  1 M-GGLDGEQKQLIKKLVNFRMKEGKETRVRAIFYQTFHRPAR-TERDVIKLMVDAVENIK| Gossraim26824973
  1 M-GGLDGEQKQLIKKLVNFRMKEGKRTRVRAIVYQTFHRPARRTERDVIQFLVDAVENIK| Caripapa16415391
    M G oDGEQK LIjKLVNFRM _GKjT+VR Io jTojR Aj TERD Ijo@V_A@_jIK


 59 PICEVEKVGVAGKIYDVPGIVARDRQQTLAIRWILGAAFKRRISYRISLEKCSFAEILDA| Aquicoer22023107
 59 PICEVAKVGVAGTIYDVPGIVARDRQQTLAIRWILEAAFKRRISYRISLEKCSFAEILDA| Arablyra16051447
 59 PICEVAKVGVAGTIYDVPGIVARDRQQTLAIRWILEAAFKRRISYRISLEKCSFAEILDA| Arabthal19639586
 59 PICEVAKVGVAGTIYDVPGIVARDRQQTLAIRWILEAAFKRRISYRISLEKCSFAEILDA| Arabthal19643610
 59 PICEVVKVGVAGTIYDVPGILARDRQQTLAIRWILGAAFKRRISYRISLEKCSFAEILDA| Oryzsati24147382
 59 PICEVVKVGVAGTIYDVPGIVARDRQQTLAIRWILGAAFKRRISYRISLEKCSFAEILDA| Zea_mays20838612
 59 PICEVVKVGVAGTIYDVPGIVARDRQQTLAIRWILGAAFKRRISYRISLEKCSFAEILDA| Zea_mays20839405
 59 PICEVVKVGVAGTIYDVPGIVARDRQQTLAIRWILGAAFKRRISYRISLEKCSFAEILDA| Zea_mays20865706
 59 PICEVVKVGVAGTIYDVPGIVARDRQQTLAIRWILGAAFKRRISYRISLEKCSFAEILDA| Zea_mays20841553
 59 PICEVVKVGVAGTIYDVPGIVARDRQQTLAIRWILGAAFKRRISYRISLEKCSFAEILDA| Setaital19693586
 60 PICEVEKVRVATTFYGVPGIVANDRQQTLAIRWIFEAAFKRRISYKISLEKCSFDEILDA| Cucusati16966640
 59 PICEVEKVRVAATFYDVPGIVARDRQQTLAIRWILEAAFKRRISYRISLEKCSFDEILDA| Cucusati16971357
 59 PICEVEKVGVAGTIYDVPGIVARDRQQTLAIRWILEAAFKRRISYRISLEKCSFAEILDA| Ricicomm16828883
 59 PICEVEKVRIAGTIYDVPGIVAKDRQQTLAIRWILEAAFKRRISYRISLEKCSFAEILDA| Gossraim26824973
 60 PICEVEKVRVAGTIYDVPGIVARDRQQTLAIRWILEAAFKRRISYRISLEKCSFDEILDA| Caripapa16415391
    PICEV KV @A. oY VPGI@AjDRQQTLAIRWIo AAFKRRISY+ISLEKCSF EILDA


119 YRKRGIARKKRENLHGLASTNRRFAHFRWW                            | Aquicoer22023107
119 YQKRGSARRKRENLHGLASTNRSFAHFRWW                            | Arablyra16051447
119 YQKRGSARRKRENLHGLASTNRSFAHFRWW                            | Arabthal19639586
119 YQKRGSARRKRENLHGLASTNRSFAHFRWW                            | Arabthal19643610
119 YRKRGISRKRRGNLHGLASTNRSFAHFRWW                            | Oryzsati24147382
119 YRKRGISRKRRENLHGLASTNRSFAHFRWW                            | Zea_mays20838612
119 YRKRGISRKRRENLHGLASTNRSFAHFRWW                            | Zea_mays20839405
119 YRKRGISRKRRENLHGLASTNRSFAHFRWW                            | Zea_mays20865706
119 YRKRGISRKRRENLHGLASTNRSFAHFRWW                            | Zea_mays20841553
119 YRKRGISRKRRKNLHGLASTNRSFAHFRWW                            | Setaital19693586
120 YRKRGIARKKRENLHRLASTNRSFAHFRWW                            | Cucusati16966640
119 YRKRGIARKKRENLHRLASTNRSFAHFRWW                            | Cucusati16971357
119 YRKRGIARKKRENLHGLASTNRSFAHFRWW                            | Ricicomm16828883
119 YRKRGIARKKRENLHGLSSTNRSFAHFRWW                            | Gossraim26824973
120 YKKMGIARKKRENLHGLASTNRSFAHFRWW                            | Caripapa16415391
    YjK G .R++R NLH L.STNR FAHFRWW
```

Fig. S1C: An example of GSA-MPSA

▼phase0 ▼phase1 ▼phase2

(before)

```
              >P450_M50_Org.4 [36:685]  ( 1 - 685 )

  1 ------------------------------------------------------------| Camesine18135266
  1 ------------------------------------------------------------| Citrclem20798056
  1 ------------------------------------------------------------| JatrcurcJcr4U31037.10
  1 ------------------------------------------------------------| Maniescu17967988
  1 ------------------------------------------------------------| Ricicomm16809073
  1 MWKKIEFGLGDNGSEQNQIYHPNFGEFGVMRLVICTIVIEPVHDGFVPLFNPIYTRCLAC| Theocaca27450440
  1 ------------------------------------------------------------| Vitivini17841677
  1 ------------------------------------------------------------| Gossraim26774033
  1 ------------------------------------------------------------| Gossraim26819267
  1 ------------------------------------------------------------| Poputric26992999
  1 ------------------------------------------------------------| Eucagran23577869
  1 ------------------------------------------------------------| Fragvesc27269381
  1 ------------------------------------------------------------| Prunpers17642522
  1 ------------------------------------------------------------| Aquicoer22024426
  1 ------------------------------------------------------------| Solalyco27305059
  1 ------------------------------------------------------------| Solatube24390442
  1 ------------------------------------------------------------| Solalyco27305816
  1 ------------------------------------------------------------| Solatube24392954
  1 ------------------------------------------------------------| Arablyra16060246
  1 ------------------------------------------------------------| Arabthal19643917
  1 ------------------------------------------------------------| Capsrube20896010
  1 ------------------------------------------------------------| Brasrapa22704316
  1 ------------------------------------------------------------| Brasrapa22712651
  1 ------------------------------------------------------------| Thelhalo20195894
  1 ------------------------------------------------------------| Arablyra16054334
  1 ------------------------------------------------------------| Arabthal19667813
  1 ------------------------------------------------------------| Capsrube20913401
  1 ------------------------------------------------------------| Brasrapa22691221
  1 ------------------------------------------------------------| Brasrapa22713166
  1 ------------------------------------------------------------| Thelhalo20202810
  1 ------------------------------------------------------------| Brasrapa22695554
  1 ------------------------------------------------------------| Mimugutt17677772
  1 ------------------------------------------------------------| Mimugutt17693704
  1 ------------------------------------------------------------| Linuusit23142300
  1 ------------------------------------------------------------| Linuusit23172097
  1 ------------------------------------------------------------| Linuusit23147631

  1 ------------------------------------------------------------| Camesine18135266
  1 ------------------------------------------------------------| Citrclem20798056
  1 ------------------------------------------------------------| JatrcurcJcr4U31037.10
  1 ------------------------------------------------------------| Maniescu17967988
  1 ------------------------------------------------------------| Ricicomm16809073
 61 FLHTTSFSTQLAATTTTTTPTLSTPTIQLLL------I--------------------EF| Theocaca27450440
  1 ------------------------------------------------------------| Vitivini17841677
  1 ------------------------------LLLHLFSSHNFFTIQLPSQDFHPIYNLLN-| Gossraim26774033
  1 ------------------------------------------------------------| Gossraim26819267
  1 ----------------------------------------------------------EV| Poputric26992999
  1 ------------------------------------------------------------| Eucagran23577869
  1 ------------------------------------------------------------| Fragvesc27269381
  1 ------------------------------------------------------------| Prunpers17642522
  1 ------------------------------------------------------------| Aquicoer22024426
  1 ------------------------------------------------------------| Solalyco27305059
  1 ------------------------------------------------------------| Solatube24390442
  1 ------------------------------------------------------------| Solalyco27305816
  1 ------------------------------------------------------------| Solatube24392954
  1 ------------------------------------------------------------| Arablyra16060246
  1 ------------------------------------------------------------| Arabthal19643917
  1 ------------------------------------------------------------| Capsrube20896010
  1 ------------------------------------------------------------| Brasrapa22704316
  1 ------------------------------------------------------------| Brasrapa22712651
  1 ------------------------------------------------------------| Thelhalo20195894
  1 ------------------------------------------------------------| Arablyra16054334
  1 ------------------------------------------------------------| Arabthal19667813
  1 ------------------------------------------------------------| Capsrube20913401
  1 ------------------------------------------------------------| Brasrapa22691221
  1 ------------------------------------------------------------| Brasrapa22713166
  1 ------------------------------------------------------------| Thelhalo20202810
  1 ------------------------------------------------------------| Brasrapa22695554
  1 ------------------------------------------------------------| Mimugutt17677772
  1 ------------------------------------------------------------| Mimugutt17693704
  1 ------------------------------------------------------------| Linuusit23142300
  1 ------------------------------------------------------------| Linuusit23172097
  1 ------------------------------------------------------------| Linuusit23147631

  1 -----------------------------------MD-------FT-FLFL-----LPFA| Camesine18135266
  1 -----------------------------------MD-------FT-FLFL-----LPFA| Citrclem20798056
  1 -----------------------------------MD-------FN-SIFF-----LLFL| JatrcurcJcr4U31037.10
  1 -----------------------------------ME-------FI-SFFFS----LSFA| Maniescu17967988
  1 -----------------------------------MD-------FF-AFFF-----LLFL| Ricicomm16809073
 95 -----------------------------------ME-------FN-FMFY------SFA| Theocaca27450440
  1 -----------------------------------MD-------SS-FTTI------CFS| Vitivini17841677
 30 -----------------------------------MA-------FY-FMIP------LFA| Gossraim26774033
  1 -----------------------------------MA-------FT-FIFC------FIP| Gossraim26819267
  3 SYSIPPINTSSSSLVFPTQVSSLLTHKKEKNKATEME-------FSPSVFF-----LSFA| Poputric26992999
  1 -----------------------------------ME-------FT-TVLFT----TVLA| Eucagran23577869
  1 -----------------------------------M-------------------FA| Fragvesc27269381
  1 -----------------------------------ME-------IS-SILYSMLCMLAFV| Prunpers17642522
  1 -----------------------------------M--------VS-LILC------FFF| Aquicoer22024426
  1 -----------------------------------ME-------FV-SMFC-----LSF| Solalyco27305059
  1 -----------------------------------ME-------FV-SMFC-----LAF| Solatube24390442
  1 -----------------------------------ME-------FV-SMLC-----LTF| Solalyco27305816
  1 -----------------------------------ME-------FV-SMLC-----LTF| Solatube24392954
  1 -----------------------------------MD-------FS-ALFL-----TLLA| Arablyra16060246
  1 -----------------------------------MD-------IS-ALFL-----TLLA| Arabthal19643917
  1 -----------------------------------MD-------FS-AMFL-----TLLA| Capsrube20896010
  1 -----------------------------------MD-------SS-ALFF-----TFSA| Brasrapa22704316
  1 -----------------------------------MD-------FS-ALLL-----TLFT| Brasrapa22712651
  1 -----------------------------------MD-------FS-ALFL-----TLFA| Thelhalo20195894
  1 -----------------------------------MD-------FS-DLFL-----TLFA| Arablyra16054334
  1 -----------------------------------MD-------FS-GLFL-----TLSA| Arabthal19667813
  1 -----------------------------------MD-------FS-GLFL-----TLSA| Capsrube20913401
  1 -----------------------------------MD-------FS-GMFL-----TFFA| Brasrapa22691221
  1 -----------------------------------MD-------FS-GMFL-----IFSA| Brasrapa22713166
  1 -----------------------------------MD-------FS-GVFL-----ILFT| Thelhalo20202810
  1 -----------------------------------MD-------FS-SMFL-----TLFV| Brasrapa22695554
  1 -----------------------------------ME-------FI-SLCCF----LISS| Mimugutt17677772
  1 -----------------------------------M------------------------| Mimugutt17693704
  1 -----------------------------------MDASNYQITLP-LFLF-----SAA-| Linuusit23142300
  1 -----------------------------------MDASNYQITLP-LFLF-----SAAA| Linuusit23172097
  1 -----------------------------------MDSPS--LILP-FFYF-----FIIA| Linuusit23147631
                                       M

 13 SICFI---LCFYLF---LKFI----SSNGRNLPLPPGTLGWPYIGETFELYSQNPNVFFA| Camesine18135266
 13 SICFI---LCFYLF---LKFI----SSNGRNLPLPPGTLGWPYIGETFELYSQNPNVFFA| Citrclem20798056
 13 STFLI---FLFHSL---LKFF--SPTRTQQKLPLPPGTLGWPYIGETFQLYSQNPNVFFA| JatrcurcJcr4U31037.10
 14 SVLFI---FLFHYL---LKFF--DSNNHRNLPLPPGSLGWPYIGETFQLYSQNPNVFFA| Maniescu17967988
 13 SISFV---FLLISL---LNFF--FPSNSSAKLPLPPGSLGWPYIGETFQLYSQNPNVFFA| Ricicomm16809073
106 SIFLI---FLFCCL---FKSF----KSNSRQLPLPPGTLGWPYIGETFQLYSQNPNVFFA| Theocaca27450440
 12 IALLL---FLIHFL---LKLFSFFSASTARKLPLPPGSLGWPYIGETFQLYSQNPNVFFA| Vitivini17841677
 41 SILFI---FLFNFL---LNLF---KSKKSRDLPLPPGTLGWPYIGETFQLYSQNPNVFFA| Gossraim26774033
 12 PFLFI---FLFHSL---LLHF---FKPNRPKLPLPPGTMGWPYIGETFHLYSQNPNVFFA| Gossraim26819267
 51 SILLLVGGLLFKSL---LKFF---ASDRPQSLPLPPGTMGWPYIGETFQLYSQNPNVFFA| Poputric26992999
 14 ILSAS---LLLRYA---LHLL----ASARRRLPLPPGTLGWPYLGETFQLYSQDPNVFFA| Eucagran23577869
  4 ASALI---FFFSPI---IKLF---LISARHKIPLPPGSLGWPYIGETFQLYSQNPNVFFA| Fragvesc27269381
 18 VFFLF---LIHSLI---SKLF---FTPSSPKLPLPPGSLGWPYVGETFQLYSQNPNVFFA| Prunpers17642522
 11 SFLAL---FLLHRM---FKSS---SNSAMKKLPLPPGTIGWPYIGETFQLYSQNPNVFFT| Aquicoer22024426
 13 ISCSI---LLLHSV---FKLF----DCGVKKLPLPPGSLGWPYIGETFQLYSQNPSFFFA| Solalyco27305059
 13 ISCSI---LLLHSV---FKLF----DFGVKKLPLPPGALGWPYIGETFQLYSQNPSFFFA| Solatube24390442
 13 ISLTL---LLIHSI---FKFL----AFASKKLPLPPGTLGLPYIGETFQLYSQNPNVFFA| Solalyco27305816
 13 ISFTL---LLIHSI---FKFL----AFASKKLPLPPGTLGLPYIGETFQLYSQNPNVFFA| Solatube24392954
 13 GSLFL---YFLRCL---ISQR----RLGSSKLPLPPGTMGWPYVGETFQLYSQDPNVFFQ| Arablyra16060246
 13 GSLFL---YFLRCL---ISQR----RFGSSKLPLPPGTMGWPYVGETFQLYSQDPNVFFQ| Arabthal19643917
 13 GAFFL---YFL-------SQR----RRGSSKLPLPPGTMGWPYVGETFQLYSQDPNVFFQ| Capsrube20896010
 13 AIIIL---YFLRCL---ISQR----HRVSSKPPLPPGTMGWPYVGETFQLYSRDPNVFFA| Brasrapa22704316
 13 GIIFL---YFLRCL---ISQR----RRGPSKLPLPPGTMGWPYVGETFQLYSQDPNVFFA| Brasrapa22712651
 13 GSLFL---YFLRCL---ISQR----RRGSSTLPLPPGTMGWPYVGETFQLYSQDPNVFFA| Thelhalo20195894
 13 VALFL---CLLRFI---AGIR----RSSSTNLPLPPGTMGYPYVGETFQLYSQDPNVFFA| Arablyra16054334
 13 AALFL---CLLRFI---AGVR----RSSSTKLPLPPGTMGYPYVGETFQLYSQDPNVFFA| Arabthal19667813
 13 AALFL---CLLRFI---AGIR----RSSSTSLPLPPGTMGYPYVGETFQLYSQDPNVFFA| Capsrube20913401
 13 AALFL---CVLRFIVSAVGFR----RSSSSKLPLPPGTMGYPYVGETFQLYSQDPNVFFA| Brasrapa22691221
 13 AALFL---CLLRFV---AGFR----RSSSSKLPLPPGTMGYPYVGETFQLYSQDPNVFFA| Brasrapa22713166
 13 VALFL---CLLRFA---AGFR----RSSSSKLPLPPGTMGYPYIGETFQLYSQDPNVFFA| Thelhalo20202810
 13 AALFL---CLLRLIASVAGSR----RSSSSQLPLPPGTMGYPYVGETFQLYSQDPNVFFA| Brasrapa22695554
 14 LIFSI---FVLNKI---LKLL----SFGNVKLPLPPGTMGWPYIGETFQLYSQNPNTFFA| Mimugutt17677772
  2 ------------------------SLGHVKLPLPPGTMGWPYIGETFHLYSQNPNTFFA| Mimugutt17693704
 19 VSSFL---FLLNRF---LN------SRRRHQLPLPPGTMGWPYVGETFQLYSQNPNVFFA| Linuusit23142300
 20 VSSFL---FLLNHF---IN------SRRRHQLPLPPGTMGWPYVGETFQLYSQNPNVFFA| Linuusit23172097
 18 AVSSI---LFGK-------------WRRRHQLPLPPGTLGYPYVGETFQLYSQNPNVFFS| Linuusit23147631
            oo                  PLPPG.@GoPY@GETFjLYSj_P  FF

 63 SKVKRYGSIFKTHILGCPCVMISSPEAAKFVLVTRAHLFKPTFPASKERMIGKQAIFFHQ| Camesine18135266
 63 SKVKRYGSIFKTHILGCPCVMISSPEAAKFVLVTRAHLFKPTFPASKERMLGKQAIFFHQ| Citrclem20798056
 65 SKQKRYGSVFKTHILGCPCVMISSPEAAKFVLVTRAHLFKPTFPASKERMLGKQAIFFHQ| JatrcurcJcr4U31037.10
 65 SKQKRYGSVFKTHILGCPCVMISSPEAAKFVLVSRAHLFKPTFPASKERMLGKQAIFFHQ| Maniescu17967988
 65 SKQKRYGSVFKTHILGCPCVMISSPEAARFVLVSKAHLFKPTFPASKERMLGKQAIFFHQ| Ricicomm16809073
156 SKQKRYGSVFKTHILGCPCVMISSPEAAKFVLVTRAHLFKPTFPASKERMLGKQAIFFHQ| Theocaca27450440
 66 SKQERYGTIFKTHILGCPCVMISSPEAAKLVLVTKAPLFKPTFPASKERMLGKQAIFFHQ| Vitivini17841677
 92 SKQKRYGSIFKTHILGCPCVMISSPEAAKFVLVTKSHLFKPTFPASKERMLGKQAIFFSQ| Gossraim26774033
 63 SKQKRYGSIFKTHILGCPCVMISSPDAAKFVLVTKSHLFKPTFPASKERMLGKQAIFFNQ| Gossraim26819267
105 SKRKRYGSIFKTHILGCPCVMISSPEAAKFVLVTKSHLFKPTFPASKERMLGKEAIFFHQ| Poputric26992999
 64 KKQSRYGSIFKTHILGCPCVMISSPEAAKFVLVTKSHLFKPTFPASKERMLGKQAIFFHQ| Eucagran23577869
 55 SKIKRYGSIFKTHILGCPCVMISSPAAAKFVLLTKSHLFKPTFPASKERMLGKQAIFFHQ| Fragvesc27269381
 69 SKQKRYGSIFKTHILGCPCVMISSPEAAKFVLVTRSHLFKPTFPASKERMLGKQAIFFHQ| Prunpers17642522
 62 SKQKRYGSIFKTHILGCPCVMVSSPEAAKFVLVTKSHLFKPTFPASKERMLGRQALFFHQ| Aquicoer22024426
 63 SKVKKYGSIFKTHILGCPCVMISSPEAAKLVLVTKAHLFKPTFPASKERMLGKQAIFFHQ| Solalyco27305059
 63 SKVKKYGSIFKTHILGCPCVMISSPEAAKLVLVTKAHLFKPTFPASKERMLGKQAIFFHQ| Solatube24390442
 63 SKVKKYGSIFKTYILGCPCVMISSPEAAKQVLVTKANLFKPTFPASKERMLGKQAIFFHQ| Solalyco27305816
 63 SKVKKYGSIFKTYILGCPCVMISSPEAAKQVLVTRANLFKPTFPASKERMLGKQAIFFHQ| Solatube24392954
 63 TKQRRYGSVFKTHVLGCPCVMISSPEAAKFVLVTKSHLFKPTFPASKERMLGKQAIFFHQ| Arablyra16060246
 63 SKQKRYGSVFKTHVLGCPCVMISSPEAAKFVLVTKSHLFKPTLPASKERMLGKQAIFFHQ| Arabthal19643917
 59 SKQKRYGSVFKTHVLGCPCVMISSPEAAKFVLVTKAHLFKPTLPASKERMLGKQAIFFHQ| Capsrube20896010
 63 SKQKRYGSVFKTHVLGCPCVMISSPEAAKFVLVTKSHLFKPTLPASKERMLGKQAIFFHQ| Brasrapa22704316
 63 SKQKRYGSVFKTHVLGCPCVMISSPEAAKFVLVTKSHLFKPTFPASKERMLGKQAIFFHQ| Brasrapa22712651
 63 SKQKRYGSVFKTHVLGCPCVMISSPEAAKFVLVTKSHLFKPTFPASKERMLGKQAIFFHQ| Thelhalo20195894
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 63 SKQRRYGSVFKTHVLGCPCVMISSPEAAKFVLVTKSHLFKPTFPASKERMLGKQAIFFHQ| Brasrapa22713166
 63 SKQRRYGSVFKTHVLGCPCVMISSPEAAKFVLVTKSHLFKPTFPASKERMLGKQAIFFHQ| Thelhalo20202810
 63 SKQRRYGSVFKTHVLGCPCVMISSPEAAKFVLVTKSHLFKPTFPASKERMLGKHAIFFHE| Brasrapa22695554
 64 SKIKRYGSIFKTHILGCNCVMISSPEAAKFVLVTKSDLFKPTFPASKERMLGKQAIFFHQ| Mimugutt17677772
 37 SKVKKYGSIFKTHILGCPCVMISSPDAAKTVLVTKSNLFKPTFPASKERMLGRQAIFFHQ| Mimugutt17693704
 67 CKVKKFGSILKTHILGCPCVMVSSPEAAKFVLVTKSNLFKPTFPASKERMLGRQAIFFHQ| Linuusit23142300
 68 SKVKKFGSILKTHILGCPCVMISSPEAAKFVLVTKSNLFKPTFPASKERMLGRQAIFFHQ| Linuusit23172097
 63 SKIKKFGSILKTHILGCRCVMISSPEAAKFVLVTKSNLFKPTFPASKERMLGRQAIFFHQ| Linuusit23147631
       K  +$G.@oKT @LGC CVM@.SP AA+ VL@.+. LFKPToPASKERM@G+j@FF _

123 GDYHIKLRKLVLRAFMPEAIKNIIPDIECIAKDSLQSWQG-RLINTYQEMKTTFNVALL| Camesine18135266
123 GDYHTKVRKLVLRAFLPEAIKNIIPDIECIAKDSLQSWQG-RLINTYQEMKTTFNVALL| Citrclem20798056
125 GEYHTKLRKLVLRAFVPESIKYIVSDIETIAKDALKSWEG-RIVNTFQEMKTTFDVALL| JatrcurcJcr4U31037.10
125 GDYHAKLRKLVLRAFMPEAIKSIVCDIESIAIDSLKSWEG-RIINTFQEMKTSFNVALL| Maniescu17967988
125 GDYHNKLRKLVLRAFVPEAIKSIVSDIESIAKESVHSWEG-RDINTFQEMKTAFNVALL| Ricicomm16809073
216 GEYHAKLRKLVLRAFMPEAIKSIVSDIESIAKDSLQSLEG-REITTFLEMKTTFNVALL| Theocaca27450440
126 GDYHAKLRKLVLRAFMPGAIKNIVSNIDSIATQTLQSWEG-RSINTFQEMKTTFNVALL| Vitivini17841677
152 GQYHAKLRKLVLRAFVPEAIKSFVSNIESIAKDSLQSLEG-RLITTFQEMKTTFNVALL| Gossraim26774033
123 GDYHAKLRKLVLRAFMPESIKNIVPDIESIAKHSLHSLQG-RLITTFQEMKTTFNVALL| Gossraim26819267
165 GAYHMKLRKLVLRAFLPEAIKNIVPDIQNIAKDSLQYWEG-RLITTFQEMKSTFNVALL| Poputric26992999
124 GDYHAKLRKLVLRAFMPEAIKSRVAGIESVAVDSLQSWEG-RLVNTFQEMKTAFKIALL| Eucagran23577869
115 GEYHSKLRKLVLRAFMPTALKNKVGDIEAIAKDSLQSWEG-RSFNTYQEMKTTFNVALL| Fragvesc27269381
129 GDYHAKLRKLVLRAFMPEAIRSIVPDIESIAKDSLQSWEG-RLVNTFQEMKTTFNVALL| Prunpers17642522
122 GDYHSKLRKLVLRAFMPEAIKNIVSQVDNLAVHSLQSWDG-QLINTFQEMKTAFNVALM| Aquicoer22024426
123 GEYHAKLRKLVLRAFKPEAIKNIVPDIESIAITSLQSMQG-RLINTYQEMKTTFNVALL| Solalyco27305059
123 GEYHAKLRKLVLRAFKPEAIKNIVPDIESIAINSLESMQG-RLINTYQEMKTTFNVALL| Solatube24390442
123 GDYHAKLRKLVLQAFKPDSIRNIIPDIESIAITSLESFQG-RLINTYQEMKTTYNVALL| Solalyco27305816
123 GDYHAKLRKLVLQAFKPDSIRNIIPDIESIAITSLESFEG-RLINTYQEMKTTYNVALL| Solatube24392954
123 GDYHAKLRKLVLRAFMPESIRNMVPDIESIAQDSLRIWEG-TMINTYQEMKTTFNVALL| Arablyra16060246
123 GDYHAKLRKLVLRAFMPESIRNMVPDIESIAQDSLRIWEG-TMINTYQEMKTTFNVALL| Arabthal19643917
119 GDYHAKLRKLVLRAFMPEAIRNMVPDIESIAQDSLRTWDG-TMINTYQEMKTTFNVALL| Capsrube20896010
123 GDYHSKLRKLVLRAFMPEAIRDMVPDIESIAQDSLRSWVG-TMINTYQEMKTTFNVALL| Brasrapa22704316
123 GDYHAKLRKLVLRAFMPEAIRDMVPDIETIAQDSLRNWDG-TMINTYQEMKTTFNVALL| Brasrapa22712651
123 GDYHAKLRKLVLRAFMPESIRNMVPDIETIAQDSLRNWDG-TMINTYQEMKTTFNVALL| Thelhalo20195894
123 GDYHSKLRKLVLRAFMPDAIRNMVPHIESIAQESLNSWDG-TQLNTYQEMKTTFNVALI| Arablyra16054334
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126 GDYHSKLRKLVLRAFMPDSVRNMVPNIESIAQESLSAWDG-TQLNTYQEMKTTFNVALI| Brasrapa22691221
123 GDYHSKLRKLVLRAFMPDSVRNMVPHIESIAQESLSSWDG-TQLNTYQEMKTTFNVALI| Brasrapa22713166
123 GDYHSKLRKLVLRAFMPDSVRNMVPHIESIAQESLNSWDG-TQLNTYQEMKTTFNVALI| Thelhalo20202810
126 GDYHAQLRKLVLRAFMPDSVRNMVANIESIARESLSSWDG-TQLNTYQEMKTTFNVALI| Brasrapa22695554
124 GDYHSKLRKLVLRSFMPESIKNIVPQIESLAVKSLESWEG-QLITTFQEMKTAFNVALL| Mimugutt17677772
 97 GDYHSKLRKLVLRAFTPDSIKNIVPDIESLAVTSLQSWKG-QLITTFQEMKTAFNVALL| Mimugutt17693704
127 GDYHSKLRKLVLRAFLPQSIQHAVPQVESLAVQALQYWESLPQINTYLEMKSTFNVALL| Linuusit23142300
128 GDYHSKLRKLVLRAFLPQSIQHAVPQVESLAVQALQSWESLPQINTYLEMKSTFNVALL| Linuusit23172097
122 GDYHAKLRKLVLRAFLPRSLQHIVPRVESLALRSIRSWEAAEEINTYLEMKTTFNVALL| Linuusit23147631
    G YH j@RKLVLj.F P .@j  @  @_ @A  .@  o  .   o T$ EMK $.$j@AL@

182 SIFG-KDEVLYREDLKRCYYILEKGYNSMPINLPGTLFHKSMAKRKELAQIVAKIISTRR| Camesine18135266
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184 SIFG-KDEFQYREDLKRCYYILEEGYNSMPINLPGTLFHKAMKARKELAQILAKTLSTRR| JatrcurcJcr4U31037.10
184 SIFG-KDEFLYREDLKRCYYILEKGYNSMPINLPGTLFNKSMKARKELAQILAKTLSTRR| Maniescu17967988
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275 SIFG-KDEVLYREDLKRCYYILEKGYNSMPINLPGTLFNKSMKARKELAQILAKILSTRR| Theocaca27450440
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211 SIFG-EDEVKYREDLKRCYYILEKGYNSMPINLPGTLFHKAMKARKELAQILAKIISTRR| Gossraim26774033
182 SIFGKDDQVLYREDLKRCYYILEKGYNSMPINIPGTLFNKAMKARKEIAQILAKIISTRR| Gossraim26819267
224 SIFG-KDEVLYREDLKRCYYILEKGYNSMPINLPGTLFHKSMKARKELARILAKIISTRR| Poputric26992999
183 SIFG-KDEIKYREDLKKCYYILEKGYNSMPINLPGTLFNKSMKARKELARILAKILVTRR| Eucagran23577869
174 SIFG-KDEVFYREDLKRCYYILEKGYNSMSINIPGTLFHKSMKARKELAQILAKIISTRR| Fragvesc27269381
188 SIFG-KDEILYREDLKRCYYILEKGYNSMPINLPGTLFHKSMKARKELAQILAKIISTRR| Prunpers17642522
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182 SIFG-KDEMLYREDLKRCYYVLETGYNSMPINLPGTLFHKSMKARKELAKMLAKIISVRR| Solalyco27305059
182 SIFG-KDEMLYREDLKRCYYVLETGYNSMPINLPGTLFHKSMKARKELAKILAKIISVRR| Solatube24390442
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182 SIFG-KDEFLYREELKKCYYILEKGYNSMPINLPGTLFNKAMKARKELAKIVAKIISTRR| Solatube24392954
182 SIFG-KDEVLYREDLKRCYYILEKGYNSMPVNLPGTLFHKSMKARKELSQILARILSERR| Arablyra16060246
182 SIFG-KDEVLYREDLKRCYYILEKGYNSMPVNLPGTLFHKSMKARKELSQILARILSERR| Arabthal19643917
178 SIFG-KDEVLYREDLKRCYYILEKGYNSMPVNLPGTLFHKSMKARKELSQILARILSERR| Capsrube20896010
182 SIFG-KDEVLYREDLKRCYYILEKGYNSMPVNLPGTLFHKSMKARKELSQILARILSERR| Brasrapa22704316
182 SIFG-KDEVLYREDLKRCYYILEKGYNSMPVNLPGTLFHKAMKARKELSQILARILSERR| Brasrapa22712651
182 SIFG-KDEVLYREDLKRCYYILEKGYNSMPVNLPGTLFHKAMKARKELSQILARILSERR| Thelhalo20195894
182 SILG-KDEVLYREDLKRCYYILEKGYNSMPVNLPGTLFHKAMKARKELAQILANILSKRR| Arablyra16054334
182 SILG-KDEVYYREDLKRCYYILEKGYNSMPVNLPGTLFHKAMKARKELAQILANILSKRR| Arabthal19667813
182 SILG-KDEVFYREDLKRCYYILEKGYNSMPVNLPGTLFHKAMKARKELAQILANILSKRR| Capsrube20913401
185 SIFG-KDEIFYREDLKRCYYILEKGYNSMPVNLPGTLFHKAMKARKELAHILAKILTKRR| Brasrapa22691221
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182 SILG-KDEVFYREDLKRCYYILEKGYNSMPVNLPGTLFHKAMKARKELAQILANILSKRR| Thelhalo20202810
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156 SIFG-KDEVLYREDLKRCYYDLEKGYNSMPVNLPGTLFHKAMARRKQLSKILAKILSLRR| Mimugutt17693704
187 SIFG-KDATLYREDLKRCYYILEKGYNSMPVNLPGTLFHKAMKARKQLALILAKIMARRR| Linuusit23142300
188 SIFG-KDATLYREDLKRCYYILEKGYNSMPVNLPGTLFHKAMKARKELALILAKIMARRR| Linuusit23172097
188 SIFG-NDGMMYGEELKRCYYILEKGYNSMPVNLPGTLFHKAMKARKEIATIVARIMATRR| Linuusit23147631
    SIoG jD   Y E_LKjCYY LE GYNSM.@ oP TLFjK.M+ARK_@. @@Aj @  RR

241 QMK-L---DHNDLLGSFMGAKEGLTDEQIADNIIGVIFAARDTTASALTWIVKYLGENPG| Camesine18135266
241 QMK-L---DHNDLLGSFLGAKEGLTDEQIADNIIGVIFAARDTTASALTWIVKYLGENPG| Citrclem20798056
243 QMK-L---DRTDLLGSFMGDKEGLTDEQIADNIIGVIFAARDTTASVLTWILKYLEENPS| JatrcurcJcr4U31037.10
243 QMK-L---QQNDLLGSFMGDKEGLSDEQIADNIIGVIFAARDTTASVLTWILKYLGENPS| Maniescu17967988
243 QMK-L---DRNDLLGSFMEDKEGLTDEQIADNIIGVIFAARDTTASVLTWIIKYLGENPS| Ricicomm16809073
334 QMK-L---DCNDLLGSFMGDKEGLTDEQIADNIIGVIFAARDTTASVLTWIIKYLGENLS| Theocaca27450440
244 QAN-G---DHNDLLGSFMGDKEGLTDEQIADNIIGVIFAARDTTASVLTWILKYLGENPS| Vitivini17841677
270 ETK-Q---EYNDLLGSFMGDKEGLTDEQIADNIIGVIFAARDTTASVLTWIIKYLGENPS| Gossraim26774033
242 QTK-QV--DCNDLLGSFMSDKEGLTDEQIADNVISVIFAARDTTASVLTWIIKYLGENPS| Gossraim26819267
283 QMK-L---DHNDLLGSFMGDKEGLTDDQIADNIIGVIFAARDTTASVLTWILKYLGENPS| Poputric26992999
242 QMK-L---DHNDLLASFMGDKEGLTDEQIADNIIGVIFAARDTTASVLTWIVKYLGENPS| Eucagran23577869
233 ESK-LD--DHNDLLGSFMGDKEGLTDEQIADNVIGVIFAARDTTASVLTWIMKYLGENPS| Fragvesc27269381
247 QRKQVE--DHNDLLGSFMGDKEGLTDEQIADNIIGVIFAARDTTASVLTWIVKYLGENPS| Prunpers17642522
240 QRK-E---ETTDLLGSFMGDGEGLTDEQIADNVIGVIFAARDTTASVLTWIVKYLGENPS| Aquicoer22024426
241 ETN-Q---NHADLLGSFMGDQEDLTDEQIADNVIGVIFAARDTTASVLTWILKYLGENPS| Solalyco27305059
241 ETN-Q---NHTDLLGSFMGDQENLTDEQIADNVIGVIFAARDTTASVLTWILKYLGENPS| Solatube24390442
241 EMK-I---DHGDLLGSFMGDKEGLTDEQIADNIIGVIFAARDTTASVLTWILKYLGENPS| Solalyco27305816
241 EMK-I---DHSDLLGSFMGDKEGLTDEQIADNIIGVIFAARDTTASVLTWILKYLGENPS| Solatube24392954
241 QNG-S---SHNDLLGSFMEDKEELTDEQIADNIIGVIFAARDTTASVMSWILKYLAENPN| Arablyra16060246
241 QNG-S---SHNDLLGSFMGDKEELTDEQIADNIIGVIFAARDTTASVMSWILKYLAENPN| Arabthal19643917
237 QNG-S---SDNDLLGSFMEDKEELTDEQIADNIIGVIFAARDTTASVMTWILKYLAENPN| Capsrube20896010
241 DER-S---SHNDLLGSFMGDKEELSDEQIADNIIGVIFAARDTTASVMTWILKYLAENPN| Brasrapa22704316
241 ENR-S---SHNDLLGSFMEDKEELSDEQIADNIIGVIFAARDTTASVMTWILKYLVENPN| Brasrapa22712651
241 ENS-S---SHNDLLGSFMGDKEELSDEQIADNIIGVIFAARDTTASVMTWILKYLAENPN| Thelhalo20195894
241 QNS-S---SHTDLLGSFMEDKEGLSDEQIASSHTDLFIFAARDTTASVLTWILKYLADNPT| Arablyra16054334
241 QNP-S---SHTDLLGSFMEDKAGLTDEQIADNIIGVIFAARDTTASVLTWILKYLADNPT| Arabthal19667813
241 QNS-S---THTDLLGSFMEDKEGLTDEQIADNIIGVIFAARDTTASVLTWILKYLADNPT| Capsrube20913401
244 QNP-S---THKDLLGSFMEEKEGLSDEQIADNIIG-------------------------| Brasrapa22691221
241 ENP-S---THKDLLGSFMEDKEGLTDEQIADNIIGVIFAARDTTASVLTWILKYLADNPT| Brasrapa22713166
241 QNS-G---SYKDLLGSFMEDKEGLSDEQIADNIIGVIFAARDTTASVLTWILKYLADNPT| Thelhalo20202810
244 QNQ-S---THKDLLGSFMEDKEGLTDEQISDNIIGVIFAARDTTASVLTWILKYLADNPT| Brasrapa22695554
242 QMK-M---NHTDLLGSFMEDSEGLTDEQIADNIIGVIFAARDTTASVLTWIVKYLAENPS| Mimugutt17677772
215 EMK-Q---SHNDLLGSFMQDSEGLTDEQIADNIIGVIFAARDTTASILTWILKFLAENPT| Mimugutt17693704
246 ELK-MEEEDHNDLLGSFMEDKEGLTDEQIADNVIGVIFAARDTTASALTWVLKFLGDNPT| Linuusit23142300
247 EMK-IQEEDHNDLLGSFMVDKAGLTDEQIADNVIGVIFAARDTTASALTWVLKFLGDNPT| Linuusit23172097
241 ETK-M---EYNDLLGSFMEDKEGLTDEQIADNVIGVIFAARDTTASALTWVLKYLGQNHS| Linuusit23147631
    _        DLL.SF@     L.D_QI.    .o@$..+_.... @.$@@+$@ __

297 VLQAVTEEQEAIIKSKE-KS-----GEEEVLSWADTKKMPITSRVIQETLRVASILSFTF| Camesine18135266
297 VLQAVTEEQEAIIKSKE-KS-----GEEEVLSWADTKKMPITSRVIQETLRVASILSFTF| Citrclem20798056
299 VLEAVTEEQEEIVKSKE-EG-----DENIFLTWADTKKMPITSRVIQETLRVASILSFTF| JatrcurcJcr4U31037.10
299 VLQAVTEEQEKIVASKE-KC-----GEEKLLTWADTKKMPITSRVIQETLRVASILSFTF| Maniescu17967988
299 VLQAVTEEQEEIVRSKE-KS-----GEQKVLSWADTKKMPVTSRVIQETLRVASILSFTF| Ricicomm16809073
390 VLQAVTEEQEAIIRSKE-KC-----GEEQTLTWADTRKMPITSRVIQETLRVASILSFTF| Theocaca27450440
300 VLQAVTEEQESIMRSKEDKC-----GEEKSLTWEDAKKMPITSRVIQETLRIASILSFTF| Vitivini17841677
326 VLQAVTDEQEAIMKGKE-KC-----GEEQTLSWADTKKMPITSRVIQETLRVASILSFTF| Gossraim26774033
299 VLQAVTEEQEAIMRGK----------EEQELSWEDTKKMPITSRVIQETLRVASILSFTF| Gossraim26819267
339 VLQAVTEEQEAIMRSEE-KG-----DEEKLLTWADTKKMPITSRVIQETLRVASILSFTF| Poputric26992999
298 VLEAVTEEQEAIRRTKE-ES-----SEEKVLTWADTKNMPMTSRVIQETLRVASILSFTF| Eucagran23577869
290 VLEAVTEEQEAIMKLKE-ES-----GEEKVLNWEDTKKMPITSRVLQETLRVASILSFTF| Fragvesc27269381
305 VLQAVTEEQEAIMRTKE-EEEGDDEGNQKALSWSDTKKMPMTSRVIQETLRVASILSFTF| Prunpers17642522
296 ILQAVTEEQQSIS------------GGDKLLNWADIKNMPITSRVIQETLRVASILSFTF| Aquicoer22024426
297 VLQAVTEEQEGIMR------------EGELLSWAHTKKMPMTTRVIQETLRAASILSFTF| Solalyco27305059
297 VLQAVTEEQEGIIR------------EGKVLSWADTKKMPMTTRVIQETLRAASILSFTF| Solatube24390442
297 VLQAVTEEQENIMRKKE-VN-----GEEKVLNWQDTRQMPMTTRVIQETLRVASILSFTF| Solalyco27305816
297 VLQAVTEEQENIMRTKE-VN-----DEEKVLNWQDTRQMPMTTRVIQETLRVASILSFTF| Solatube24392954
297 VLEAVTEEQMAIRTDKE---------EGEALTWGDTKKMPLTSRVIQETLRVASILSFTF| Arablyra16060246
297 VLEAVTEEQMAIRKDKE---------EGESLTWGDTKKMPLTSRVIQETLRVASILSFTF| Arabthal19643917
293 VLEAVTKEQMAIRKDKE---------EGESLTWGDTKKMPLTLRVIQETLRVASILSFTF| Capsrube20896010
297 VLEAVTEEQMVISKSKE---------EGESLTWGDTKKMPVTSRVIQETLRVASILSFTF| Brasrapa22704316
297 VLEAVTEEQMAIREDKG---------EGESLTWSDTKKMPLTSRVIQETLRVASILSFTF| Brasrapa22712651
297 VLEAVTEEQMAIRKGKE---------EGESLTWGDAKKMPITSRVLQETLRVASILSFTF| Thelhalo20195894
297 VLEEKKEEQMAIRKDKK---------EGESLTWEDTKKMPLTYRVIQETLRAATILSFTF| Arablyra16054334
297 VLEAVTEEQMAIRKDKK---------EGESLTWEDTKKMPLTYRVIQETLRAATILSFTF| Arabthal19667813
297 VLEAVTEEQMAIKKDKK---------EGESLTWEDTKKMPLTYRVIQETLRAATILSFTF| Capsrube20913401
275 ------EEQMAIRKGKK---------EGESLTWEDTKKMTLTSRVVQETMRVATILSFTF| Brasrapa22691221
297 VLEAVTEEQMAIKKAKQ----------GESLTWEDTKKMTLTSRVVQETMRVATILSFTF| Brasrapa22713166
297 VLEAVTEEQMAIRKTKK---------EGESLTWEDTKKMTLTSRVVQETMRVATILSFTF| Thelhalo20202810
300 VLEAVTEEQMSIRKGKK---------EGEGLTWEDTRKMTLTSRVVQETMRVATILSFTF| Brasrapa22695554
298 VLQAVTEEQEELKKNKE-EN-----G----LNWADTKKMPITTRVIQETLRAASILSFTF| Mimugutt17677772
271 VLQAVTEEQEEVMKGKE-EC-----GEEKSLTWGDTKKMPLTKRVIQETLRVASILSFTF| Mimugutt17693704
305 VLQAVTEEQEEIGREMR-K------REKEVMSWGDAKKMPTSSRVIQETLRVASILSFTF| Linuusit23142300
306 VLQAVTEEQEEISREMR-K------REKEVMSWGDTKKMPISSRVIQETLRVASILSFTF| Linuusit23172097
297 VLQAVTEEQEGIKGEMR-N------REDGVLSWEDMKKMPITSRVIQETLRVASILSFTF| Linuusit23147631
    @@_   jEQ  @                  @ W j +jM. . RV@QET@R A.ILSFTF

351 REAVEDVEYEGYLIPKGWKVLPLFRNIHHSPEIFPDPEKFDPSRFEVSPKPNTFMPFGNG| Camesine18135266
351 REAVEDVEYEGYLIPKGWKVLPLFRNIHHSPEIFPDPEKFDPSRFEVSPKPNTFMPFGNG| Citrclem20798056
353 REAVEDVEYEGYLIPKGWKVLPLFRNIHHSPEIFPDPEKFDPSRFEVAPKPNTFVPFGNG| JatrcurcJcr4U31037.10
353 REAVEDVEYEGYLIPKGWKVLPLFRNIHHSPESFPDPEKFDPSRFEVAPKPNTFMPFGNG| Maniescu17967988
353 REAVEDVEYEGYLIPKGWKVLPLFRNIHHSPEIFPDPEKFDPSRFEVAPKPNTFMPFGNG| Ricicomm16809073
444 REAVEDVEYEGYLIPKGWKVLPLFRNIHHNPEIFPDPEKFDPSRFEATPKPNTFLPFGNG| Theocaca27450440
355 REAVEDVEFEGYLIPKGWKVLPLFRNIHHSPDIYPEPEKFDPSRFEVAPKPNTFMPFGNG| Vitivini17841677
380 REAVADVEYEGYLIPKGWKVLPLFRNIHHSPEIFPDPEKFDPSRFEVVPKPNTFMPFGNG| Gossraim26774033
349 REAVEDVEYEGYLIPKGWKVLPLFRNIHHSPEIFPDPQKFDPSRFEVAPKPNTFMPFGSG| Gossraim26819267
393 REAVEDVEYEGYLIPKGWKVLPLFRNIHHSPELFPDPEKFDPSRFEVAPKPNTFMPFGNG| Poputric26992999
352 REAVEDVEYDGYLIPKGWKVLPLFRNIHHSPENFPEPEKFDPSRFEVAPKPNTFLPFGNG| Eucagran23577869
344 REAVEDVEYEGYLIPKGWKVLPLFRNIHHSPEIFPEPEKFDPTRFEVAPKPNTYMPFGSG| Fragvesc27269381
364 REAVEDVEYEGYLIPKGWKVLPLFRNIHHSPEIFPEPEKFDPSRFEVAPKPNTYMPFGSG| Prunpers17642522
344 REAVEDVEYEGYLIPKGWKVLPLFRNIHHSADIFPDPEKFDPSRFEVAPKPNTYMPFGNG| Aquicoer22024426
345 REAVEDVEFGGYLIPKGWKVLPLFRNIHHSPDNFSEPEKFDPSRFEVTPKPNTFMPFGNG| Solalyco27305059
345 REAVEDVEFEGYLIPKGWKVLPLFRNIHHSPDNFSEPEKFDPSRFEVTPKPNTFMPFGNG| Solatube24390442
351 REAVEDVEFEGYLIPKGWKVLPLFRNIHHSPDNFPEPEKFDPSRFEVSPKPNTFMPFGNG| Solalyco27305816
351 REAVEDVEFEGYLIPKGWKVLPLFRNIHHSPDNFPEPEKFDPSRFEVSPKPNTFMPFGNG| Solatube24392954
348 REAVEDVEYEGYLIPKGWKVLPLFRNIHHSADIFSNPGKFDPSRFEVAPKPNTFMPFGNG| Arablyra16060246
348 REAVEDVEYEGYLIPKGWKVLPLFRNIHHSADIFSNPGKFDPSRFEVAPKPNTFMPFGNG| Arabthal19643917
344 REAVEDVEYEGYLIPKGWKVLPLFRNIHHSADIFANPGKFDPSRFEVAPKPNTFMPFGNG| Capsrube20896010
348 REAVEDVEYEGYLIPKGWKVLPLFRNIHHSADIFSNPGKFDPSRFEVAPKPNTFMPFGNG| Brasrapa22704316
348 REAVEDVEYEGYLIPKGWKVLPLFRNIHHSADIFSNPGKFDPSRFEVAPKPNTFMPFGNG| Brasrapa22712651
348 REAVEDVEYEGYLIPKGWKVLPLFRNIHHSADIFSNPGKFDPSRFEVAPKPNTFMPFGNG| Thelhalo20195894
348 REAVEDVEYEGYLIPKGWKVLPLFRNIHHNADIFSDPGKFDPSRFEVAPKPNTFMPFGSG| Arablyra16054334
348 REAVEDVEYEGYLIPKGWKVLPLFRNIHHNADIFSDPGKFDPSRFEVAPKPNTFMPFGSG| Arabthal19667813
348 REAVEDVEYEGYLIPKGWKVLPLFRNIHHNADIFSDPGKFDPSRFEVAPKPNTFMPFGSG| Capsrube20913401
320 REAVEDVEYEGYLIPKGWKVLPLFRNIHHNADFFSDPGKFDPSRFEVAPKPNTFMPFGSG| Brasrapa22691221
347 REAVEDVEYEGYLIPKGWKVLPLFRNIHHNADFFSDPGKFDPSRFEVAPKPNTFMPFGNG| Brasrapa22713166
348 REAVEDVEYEGYLIPKGWKVLPLFRNIHHNADFFSDPGKFDPSRFEVAQKPNTFMPFGSG| Thelhalo20202810
351 REAVEDVEYEGYLIPKGWKVLPLFRNIHHNADFFSDPGKFDPSRFEVAPKPNTFIPFGNG| Brasrapa22695554
348 REAVEDVEFNGYLIPKGWKVLPLFRNIHHSPDNFTDPEKFDPSRFEVAPKPNTFMPFGSG| Mimugutt17677772
325 REAVQDVEFNGYLIPKGWKVMPLFRNIHHSPENFPEPEKFDPSRFEVSPKPNTFMPFGNG| Mimugutt17693704
358 REAVEDVEYEGYMIPKGWKVLPLFRNIHHSADNFSDPEKFDPSRFEVAPRANTFLPFGSG| Linuusit23142300
359 REAVEDVEYEGYMIPKGWKVLPLFRNIHHNPDNFSDPEKFDPSRFKVAPRANTFMAFGSG| Linuusit23172097
350 REAVEDVEYEGYLIPKGWKVLPLFRNIHHSPEIFPDPEKFDPSRFMVAPKPNTFMPFGSG| Linuusit23147631
    REAV DVE$ GY@IPKGWKV@PLFRNIHH ._ $._P KFDP.RF    +.NT$@.FG G

411 THSCPGNELAKLEILVLLHHLTTKYR----WT--VVGTNTGIQYGPFALPMNGLPIRLAQ| Camesine18135266
411 THSCPGNELAKLEILVLLHHLTTKYR----WT--VVGTNTGIQYGPFALPMNGLPIRLAQ| Citrclem20798056
413 THSCPGNELAKLEILVLLHHLTTMYR----WS--MVGSDNGIQYGPFALPQNGLPIKLSQ| JatrcurcJcr4U31037.10
413 THSCPGNELAKLEILVLLHHLTTKYR----WS--MVGTDNGIQYGPFALPQNGLPIKLSQ| Maniescu17967988
413 THSCPGNELAKLEILVLLHHLTTKYR----WT--MVSTDNGIQYGPFALPQNGLPIKLSQ| Ricicomm16809073
504 THSCPGNELAKLEIMVLLHHLTTKYR----WS--MAGANSGIQYGPFALPQNGLPIRLTR| Theocaca27450440
415 VHSCPGNELAKLEILVLLHHLTTKYR----WS--MVGTQNGIQYGPFALPQNGLPITISL| Vitivini17841677
440 THSCPGNELAKLEIMVLLHHLTTKYR----WS--MVGTNSGIQYGPFALPQNGLPIRLIR| Gossraim26774033
409 THSCPGNELAKLEIMVLLHHLTTKYR----WS--MVGSNSGIQYGPFALPQNGLPIRLVR| Gossraim26819267
453 THSCPGNELAKVEILVLLHHLTTKYR----WS--IVGANNGIQYGPFALPQNGLPIILSH| Poputric26992999
412 VHSCPGNELAKLEILVLLHHLTTKYR----WC--IMGSQNGIQYGPFALPQNGLPIRLYQ| Eucagran23577869
404 NHSCPGNELAKLEILVILHHLTTKYR----WS--IVGAENGIQYGPFALPQNGLPIILSS| Fragvesc27269381
424 THSCPGNELAKLEILVFLHHLTTKYR----WS--MVGAQNGIQYGPFALPQNGLPIRLSP| Prunpers17642522
404 THACPGNELAKLEILVLLHHLTTKYR----WS--MVGPQTSIQYGPFALPQNGLPIRLSR| Aquicoer22024426
405 THSCPGNELAKLEILILVHHLTTKYR----WS--MMGPQNGIQYGPFALPQNGLPIMLSH| Solalyco27305059
405 THSCPGNELAKLEILILVHHLTTKYR----WS--MMGPQNGIQYGPFALPQNGLPIILSH| Solatube24390442
411 VHSCPGNDLAKLEILILVHHLTTKYR----WS--MVGPQNGIQYGPFALPQNGLPIKLSL| Solalyco27305816
411 VHSCPGNELAKLEILILVHHLTTKYR----WS--MVGPQNGIQYGPFALPQNGLPIKLSL| Solatube24392954
408 THSCPGNELAKLEMSIMIHHLTTKYR----VG-QLLERATGFSMGHSRFPKTDCPLCWPG| Arablyra16060246
408 THSCPGNELAKLEMSIMIHHLTTKYR----VG-QLLERATGFSMGHSRFPKTDCPLCWPG| Arabthal19643917
404 THSCPGNELAKLEMSIMIHHLTTKYS----WS--IVGANEGIQYGPFALPQNGLPIMLAR| Capsrube20896010
408 THSCPGNELAKLEISIMIHHLTTKYR----WS--IVGASDGIQYGPFALPQNGLPIMLAR| Brasrapa22704316
408 THSCPGNELAKLEMSIMIHHLTTKYR----WS--IVGASDGIQYGPFALPQNGLPIMLTR| Brasrapa22712651
408 THSCPGNELAKLEMSIMIHHLTTKYS-EGFDFSVLVEQATGFSMGPSRFPKTDCPLCWPG| Thelhalo20195894
408 IHSCPGNELAKLEISVLIHHLTTKYR----WS--IVGPSDGIQYGPFALPQNGLPIALER| Arablyra16054334
408 IHSCPGNELAKLEISVLIHHLTTKYR----WS--IVGPSDGIQYGPFALPQNGLPIALER| Arabthal19667813
408 IHSCPGNELAKLEISVLIHHLTTKYR----WS--VVGPSDGIQYGPFALPQNGLPIALER| Capsrube20913401
380 IHSCPGNELAKLEISILIHHLTTKYR----WS--IVGPSDGIQYGPFALPQNGLPIALER| Brasrapa22691221
407 IHSCPGNELAKLEISILIHHLTTKYR----WS--IVGPSDGIQYGPFALPQNGLPIALER| Brasrapa22713166
408 IHSCPGNELAKLEISILIHHLTTKYR----WS--IVGPSDGIQYGPFALPQNGLPIALQR| Thelhalo20202810
411 IHSCPGNELAKLEIFILIHHLTTKYK----WS--IVGPSEGIQYGPFALPQNGLPIALER| Brasrapa22695554
408 THSCPGNELAKLEILVLVHHLTTKYR----WS--MMGPQNGIQYAPFALPQNGLPITLSL| Mimugutt17677772
385 VHSCPGNELAKLEIMVLLHHLTTKYR----WS--MMAPQNGIQYGPFPLPQNGLPIKLSL| Mimugutt17693704
418 THSCPGNELAKVEILVLLHHLTTKYR----WS--MVGDSSGIQYGPFALPQNGLPIKLSF| Linuusit23142300
419 THSCPGNELAKVEILVLLHHLTTKYR----WS--MVGDSSGIQYGPFALPQNGLPIKLSF| Linuusit23172097
410 THSCPGNELAKVEILVLLHHLTTKYR----WS--TVGENDGIQYGPFALPQNGLPIKLSR| Linuusit23147631
     H.CPGN_LAK@E@ @o@HHLTT Y     $        .o o.   oP   oP@ o

465 KSKDKSEITIHN---------M---                                   | Camesine18135266
465 KSKDK----------------S---                                   | Citrclem20798056
467 KL-------------------H---                                   | JatrcurcJcr4U31037.10
467 K--------------------S---                                   | Maniescu17967988
467 K--------------------S---                                   | Ricicomm16809073
558 K--------------------P---                                   | Theocaca27450440
469 K--------------------S---                                   | Vitivini17841677
494 K--------------------S---                                   | Gossraim26774033
463 K------------------------                                   | Gossraim26819267
507 K--------------------S---                                   | Poputric26992999
466 RT-SK----------------E---                                   | Eucagran23577869
458 K--------------------E---                                   | Fragvesc27269381
478 K--------------------T---                                   | Prunpers17642522
458 K--------------------T---                                   | Aquicoer22024426
459 K--------------------TS--                                   | Solalyco27305059
459 K--------------------TSS-                                   | Solatube24390442
465 K--------------------TSST                                   | Solalyco27305816
465 K--------------------TSST                                   | Solatube24392954
463 SRRLKCRMTELPFSFPYLERRD---                                   | Arablyra16060246
463 SRRSKCRMTELPLAFLYLERGD---                                   | Arabthal19643917
458 KSEIQ----------------V---                                   | Capsrube20896010
462 K------------------------                                   | Brasrapa22704316
462 KSEID----------------M---                                   | Brasrapa22712651
468 SRRSICRITGLPFSF------L---                                   | Thelhalo20195894
462 K--------------------P---                                   | Arablyra16054334
462 K--------------------P---                                   | Arabthal19667813
462 KPQV-----------------E---                                   | Capsrube20913401
434 KPEAD----------------V---                                   | Brasrapa22691221
461 KPEVD----------------I---                                   | Brasrapa22713166
462 KPEVD----------------V---                                   | Thelhalo20202810
465 KPEVD----------------M---                                   | Brasrapa22695554
462 K--------------------R---                                   | Mimugutt17677772
439 K--------------------K---                                   | Mimugutt17693704
472 K--------------------K---                                   | Linuusit23142300
473 K--------------------K---                                   | Linuusit23172097
464 R--------------------K---                                   | Linuusit23147631
```

(after)

```
              >P450_M50_Trd.4 [36:507]  ( 1 - 507 )

  1 MD------F-TFLFLLP-FA-SICFI---LCFYLFL---KFI--SSNGRNLPLPPGTLGW| Camesine18135266
  1 MD------F-TFLFLLP-FA-SICFI---LCFYLFL---KFI--SSNGRNLPLPPGTLGW| Citrclem20798056
  1 MD------F-NSIFFLL-FL-STFLI---FLFHSLL---KFFSPTRTQQKLPLPPGTLGW| JatrcurcJcr4U31037.10
  1 ME------F-ISFFFSLSFA-SVLFI---FLFHYLL---KFF-DSNNHRNLPLPPGSLGW| Maniescu17967988
  1 MD------F-FAFFFLL-FL-SISFV---FLLISLL---NFFFPSNSSAKLPLPPGSLGW| Ricicomm16809073
  1 MDSS----F-TTICFSI-AL-LLFLI---HFLLKLF---SFF-SASTARKLPLPPGSLGW| Vitivini17841677
  1 MA------F-TFIFCF--IP-PFLFI---FLFHSLL---LHF-FKPNRPKLPLPPGTMGW| Gossraim26819267
  1 ME------F-TTVLFTT-VL-AILSA--SLLLRYAL---HLL--ASARRRLPLPPGTLGW| Eucagran23577869
  1 MEISS--IL-YSMLCML-AF-VVFFL---FLIHSLIS--KLF-FTPSSPKLPLPPGSLGW| Prunpers17642522
  1 M---------VSLILCF-FF-SFLAL---FLLHRMF---KSS-SNSAMKKLPLPPGTIGW| Aquicoer22024426
  1 ME------F-VSMFCLF-SF-ISCSI---LLLHSVF---KLF--DCGVKKLPLPPGSLGW| Solalyco27305059
  1 ME------F-VSMFCLF-AF-ISCSI---LLLHSVF---KLF--DFGVKKLPLPPGALGW| Solatube24390442
  1 ME------F-VSMLCLF-TF-ISLTL---LLIHSIF---KFL--AFASKKLPLPPGTLGL| Solalyco27305816
  1 ME------F-VSMLCLF-TF-ISFTL---LLIHSIF---KFL--AFASKKLPLPPGTLGL| Solatube24392954
  1 MD------F-SAMFLTL-LA-GAFFL---YFL-------SQR--RRGSSKLPLPPGTMGW| Capsrube20896010
  1 MD------S-SALFFTF-SA-AIIIL---YFLRCLI---SQR--HRVSSKPPLPPGTMGW| Brasrapa22704316
  1 MD------F-SALLLTL-FT-GIIFL---YFLRCLI---SQR--RRGPSKLPLPPGTMGW| Brasrapa22712651
  1 MD------F-SGLFLTL-SA-AALFL---CLLRFIA---GVR--RSSSTKLPLPPGTMGY| Arabthal19667813
  1 MD------F-SGLFLTL-SA-AALFL---CLLRFIA---GIR--RSSSTSLPLPPGTMGY| Capsrube20913401
  1 MD------F-SGMFLIF-SA-AALFL---CLLRFVA---GFR--RSSSSKLPLPPGTMGY| Brasrapa22713166
  1 MD------F-SGVFLIL-FT-VALFL---CLLRFAA---GFR--RSSSSKLPLPPGTMGY| Thelhalo20202810
  1 MD------F-SSMFLTL-FV-AALFL---CLLRLIASVAGSR--RSSSSQLPLPPGTMGY| Brasrapa22695554
  1 ME------F-ISLCCFLISS-LIFSI---FVLNKIL---KLL--SFGNVKLPLPPGTMGW| Mimugutt17677772
  1 MDASNYQIT-LPLFLFS-AA-VSSFL---FLLNRFL---N----SRRRHQLPLPPGTMGW| Linuusit23142300
  1 MDASNYQIT-LPLFLFS-AAAVSSFL---FLLNHFI---N----SRRRHQLPLPPGTMGW| Linuusit23172097
  1 MDSPS--LI-LPFFYFF-II-AAVSS---ILFGKW----------RRRHQLPLPPGTLGY| Linuusit23147631
  1 MD------F-SDLFLTL-FA-VALFL---CLLRFIA---GIR--RSSSTNLPLPPGTMGY| Arablyra16054334
  1 ME------FSPSVFFLS-FA-SILLLVGGLLFKSLL---KFF-ASDRPQSLPLPPGTMGW| Poputric26992999
  1 ME------F-NFMFYS--FA-SIFLI---FLFCCLF---KSF--KSNSRQLPLPPGTLGW| Theocaca27450440
  1 MD------F-SGMFLTF-FA-AALFL---CVLRFIVSAVGFR--RSSSSKLPLPPGTMGY| Brasrapa22691221
  1 MA------F-YFMIPL--FA-SILFI---FLFNFLL---NLF-KSKKSRDLPLPPGTLGW| Gossraim26774033
  1 MELLS---L-NSMFCM--FA-ASALI---FFFSPII---KLF-LISARHKIPLPPGSLGW| Fragvesc27269381
  1 MD------F-SALFLTL-LA-GSLFL---YFLRCLI---SQR--RLGSSKLPLPPGTMGW| Arablyra16060246
  1 MD------I-SALFLTL-FA-GSLFL---YFLRCLI---SQR--RFGSSKLPLPPGTMGW| Arabthal19643917
  1 MD------F-SALFLTL-LA-GSLFL---YFLRCLI---SQR--RRGSSTLPLPPGTMGW| Thelhalo20195894
  1 MG------FNMPLVFLL-AS-LVISF---FALKWIL---KKI-MSLGHVKLPLPPGTMGW| Mimugutt17693704
    M           oo                o                    PLPPG.@Go

 44 PYIGETFELYSQNPNVFFASKVKRYGSIFKTHILGCPCVMISSPEAAKFVLVTRAHLFKP| Camesine18135266
 44 PYIGETFELYSQNPNVFFASKVKRYGSIFKTHILGCPCVMISSPEAAKFVLVTRAHLFKP| Citrclem20798056
 46 PYIGETFQLYSQNPNVFFASKQKRYGSVFKTHILGCPCVMISSPEAAKFVLVTRAHLFKP| JatrcurcJcr4U31037.10
 46 PYIGETFQLYSQNPNVFFASKQKRYGSVFKTHILGCPCVMISSPEAAKFVLVSRAHLFKP| Maniescu17967988
 46 PYIGETFQLYSQNPNVFFASKQKRYGSVFKTHILGCPCVMISSPEAARFVLVSKAHLFKP| Ricicomm16809073
 47 PYIGETFQLYSQNPNVFFASKQERYGTIFKTHILGCPCVMISSPEAAKLVLVTKAPLFKP| Vitivini17841677
 44 PYIGETFHLYSQNPNVFFASKQKRYGSIFKTHILGCPCVMISSPDAAKFVLVTKSHLFKP| Gossraim26819267
 45 PYLGETFQLYSQDPNVFFAKKQSRYGSIFKTHILGCPCVMISSPEAAKFVLVTKSHLFKP| Eucagran23577869
 50 PYVGETFQLYSQNPNVFFASKQKRYGSIFKTHILGCPCVMISSPEAAKFVLVTRSHLFKP| Prunpers17642522
 43 PYIGETFQLYSQNPNVFFTSKQKRYGSIFKTHILGCPCVMVSSPEAAKFVLVTKSHLFKP| Aquicoer22024426
 44 PYIGETFQLYSQNPSFFFASKVKKYGSIFKTHILGCPCVMISSPEAAKLVLVTKAHLFKP| Solalyco27305059
 44 PYIGETFQLYSQNPSFFFASKVKKYGSIFKTHILGCPCVMISSPEAAKLVLVTKAHLFKP| Solatube24390442
 44 PYIGETFQLYSQNPNVFFASKVKKYGSIFKTYILGCPCVMISSPEAAKQVLVTKANLFKP| Solalyco27305816
 44 PYIGETFQLYSQNPNVFFASKVKKYGSIFKTYILGCPCVMISSPEAAKQVLVTRANLFKP| Solatube24392954
 40 PYVGETFQLYSQDPNVFFQSKQKRYGSVFKTHVLGCPCVMISSPEAAKFVLVTKAHLFKP| Capsrube20896010
 44 PYVGETFQLYSRDPNVFFASKQKRYGSVFKTHVLGCPCVMISSPEAAKFVLVTKSHLFKP| Brasrapa22704316
 44 PYVGETFQLYSQDPNVFFASKQKRYGSVFKTHVLGCPCVMISSPEAAKFVLVTKSHLFKP| Brasrapa22712651
 44 PYVGETFQLYSQDPNVFFAAKQRRYGSVFKTHVLGCPCVMISSPEAAKFVLVTKSHLFKP| Arabthal19667813
 44 PYVGETFQLYSQDPNVFFAAKQKRYGSVFKTHVLGCPCVMISSPEAAKFVLVTKSHLFKP| Capsrube20913401
 44 PYVGETFQLYSQDPNVFFASKQRRYGSVFKTHVLGCPCVMISSPEAAKFVLVTKSHLFKP| Brasrapa22713166
 44 PYIGETFQLYSQDPNVFFASKQRRYGSVFKTHVLGCPCVMISSPEAAKFVLVTKSHLFKP| Thelhalo20202810
 47 PYVGETFQLYSQDPNVFFASKQRRYGSVFKTHVLGCPCVMISSPEAAKFVLVTKSHLFKP| Brasrapa22695554
 47 PYIGETFQLYSQNPNTFFASKIKRYGSIFKTHILGCNCVMISSPEAAKFVLVTKSDLFKP| Mimugutt17677772
 49 PYVGETFQLYSQNPNVFFACKVKKFGSILKTHILGCPCVMVSSPEAAKFVLVTKSNLFKP| Linuusit23142300
 49 PYVGETFQLYSQNPNVFFASKVKKFGSILKTHILGCPCVMISSPEAAKFVLVTKSNLFKP| Linuusit23172097
 43 PYVGETFQLYSQNPNVFFSSKIKKFGSILKTHILGCRCVMIASPEAAKFVLVTKSNLFKP| Linuusit23147631
 44 PYVGETFQLYSQDPNVFFAAKQRRYGSVFKTHVLGCPCVMISSPEAAKFVLVTKSHLFKP| Arablyra16054334
 49 PYMGETFQLYSQNPNVFFASKRKRYGSIFKTHILGCPCVMISSPEAAKFVLVTKSHLFKP| Poputric26992999
 44 PYIGETFQLYSQNPNVFFASKQKRYGSVFKTHILGCPCVMISSPEAAKFVLVTRAHLFKP| Theocaca27450440
 47 PYVGETFQLYSQDPNVFFASKQRRYGSVFKTHVLGCPCVMISSPEAAKFVLVTKSHLFKP| Brasrapa22691221
 44 PYIGETFQLYSQNPNVFFASKQKRYGSIFKTHILGCPCVMISSPEAAKFVLVTKSHLFKP| Gossraim26774033
 47 PYIGETFQLYSQNPNVFFASKIKRYGSIFKTHILGCPCVMISSPAAAKFVLLTKSHLFKP| Fragvesc27269381
 44 PYVGETFQLYSQDPNVFFQTKQRRYGSVFKTHVLGCPCVMISSPEAAKFVLVTKSHLFKP| Arablyra16060246
 44 PYVGETFQLYSQDPNVFFQSKQKRYGSVFKTHVLGCPCVMISSPEAAKFVLVTKSHLFKP| Arabthal19643917
 44 PYVGETFQLYSQDPNVFFASKQKRYGSVFKTHVLGCPCVMISSPEAAKFVLVTKSHLFKP| Thelhalo20195894
 46 PYIGETFQLYSQNPNTFFASKVKKYGSIFKTHILGCPCVMISSPDAAKTVLVTKSNLFKP| Mimugutt17693704
    PY@GETFjLYSj_P  FF  K  +$G.@oKT @LGC CVM@.SP AA+ VL@.+. LFKP

104 TFPASKERMIGKQAIFFHQGDYHIKLRKLVLRAFMPEAIKNIIPDIECIAKDSLQSWQG-| Camesine18135266
104 TFPASKERMLGKQAIFFHQGDYHTKVRKLVLRAFLPEAIKNIIPDIECIAKDSLQSWQG-| Citrclem20798056
106 TFPASKERMLGKQAIFFHQGEYHTKLRKLVLRAFVPESIKYIVSDIETIAKDALKSWEG-| JatrcurcJcr4U31037.10
106 TFPASKERMLGKQAIFFHQGDYHAKLRKLVLRAFMPEAIKSIVCDIESIAIDSLKSWEG-| Maniescu17967988
106 TFPASKERMLGKQAIFFHQGDYHNKLRKLVLRAFVPEAIKSIVSDIESIAKESVHSWEG-| Ricicomm16809073
107 TFPASKERMLGKQAIFFHQGDYHAKLRKLVLRAFMPGAIKNIVSNIDSIATQTLQSWEG-| Vitivini17841677
104 TFPASKERMLGKQAIFFNQGDYHAKLRKLVLRAFMPESIKNIVPDIESIAKHSLHSLQG-| Gossraim26819267
105 TFPASKERMLGKQAIFFHQGDYHAKLRKLVLRAFMPEAIKSRVAGIESVAVDSLQSWEG-| Eucagran23577869
110 TFPASKERMLGKQAIFFHQGDYHAKLRKLVLRAFMPEAIRSIVPDIESIAKDSLQSWEG-| Prunpers17642522
103 TFPASKERMLGRQALFFHQGDYHSKLRKLVLRAFMPEAIKNIVSQVDNLAVHSLQSWDG-| Aquicoer22024426
104 TFPASKERMLGKQAIFFHQGEYHAKLRKLVLRAFKPEAIKNIVPDIESIAITSLQSMQG-| Solalyco27305059
104 TFPASKERMLGKQAIFFHQGEYHAKLRKLVLRAFKPEAIKNIVPDIESIAINSLESMQG-| Solatube24390442
104 TFPASKERMLGKQAIFFHQGDYHAKLRKLVLQAFKPDSIRNIIPDIESIAITSLESFQG-| Solalyco27305816
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100 TLPASKERMLGKQAIFFHQGDYHAKLRKLVLRAFMPEAIRNMVPDIESIAQDSLRTWDG-| Capsrube20896010
104 TLPASKERMLGKQAIFFHQGDYHSKLRKLVLRAFMPEAIRDMVPDIESIAQDSLRSWVG-| Brasrapa22704316
104 TFPASKERMLGKQAIFFHQGDYHAKLRKLVLRAFMPEAIRDMVPDIETIAQDSLRNWDG-| Brasrapa22712651
104 TFPASKERMLGKQAIFFHQGDYHSKLRKLVLRAFMPDAIRNMVPHIESIAQESLNSWDG-| Arabthal19667813
104 TFPASKERMLGKQAIFFHQGDYHSKLRKLVLRAFMPDAIRNMVPHIESIAQESLNSWDG-| Capsrube20913401
104 TFPASKERMLGKQAIFFHQGDYHSKLRKLVLRAFMPDSVRNMVPHIESIAQESLSSWDG-| Brasrapa22713166
104 TFPASKERMLGKQAIFFHQGDYHSKLRKLVLRAFMPDSVRNMVPHIESIAQESLNSWDG-| Thelhalo20202810
107 TFPASKERMLGKHAIFFHEGDYHAQLRKLVLRAFMPDSVRNMVANIESIARESLSSWDG-| Brasrapa22695554
107 TFPASKERMLGKQAIFFHQGDYHSKLRKLVLRSFMPESIKNIVPQIESLAVKSLESWEG-| Mimugutt17677772
109 TFPASKERMLGRQAIFFHQGDYHSKLRKLVLRAFLPQSIQHAVPQVESLAVQALQYWESL| Linuusit23142300
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104 TFPASKERMLGKQAIFFHQGDYHSKLRKLVLRAFMPDAIRNMVPHIESIAQESLNSWDG-| Arablyra16054334
109 TFPASKERMLGKEAIFFHQGAYHMKLRKLVLRAFLPEAIKNIVPDIQNIAKDSLQYWEG-| Poputric26992999
107 TFPASKERMLGKQAIFFHQGEYHAKLRKLVLRAFMPEAIKSIVSDIESIAKDSLQSLEG-| Theocaca27450440
107 TFPASKERMLGKQAIFFHQGDYHSKLRKLVLRAFMPDSVRNMVPNIESIAQESLSAWDG-| Brasrapa22691221
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104 TFPASKERMLGKQAIFFHQGDYHAKLRKLVLRAFMPESIRNMVPDIESIAQDSLRIWEG-| Arablyra16060246
104 TFPASKERMLGKQAIFFHQGDYHAKLRKLVLRAFMPESIRNMVPDIESIAQDSLRIWEG-| Arabthal19643917
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106 TFPASKERMLGKQAIFFHQGDYHSKLRKLVLRAFTPDSIKNIVPDIESLAVTSLQSWKG-| Mimugutt17693704
    ToPASKERM@G+jA@FF _G YH j@RKLVLj.F P .@j  @  @_ @A  .@ o .

163 RLINTYQEMKTTFNVALLSIFG-KDEVLYREDLKRCYYILEKGYNSMPINLPGTLFHKS| Camesine18135266
163 RLINTYQEMKTTFNVALLSIFG-KDEVLYREDLKRCYYILEKGYNSMPISLPGTLFHKS| Citrclem20798056
165 RIVNTFQEMKTTFDVALLSIFG-KDEFQYREDLKRCYYILEEGYNSMPINLPGTLFHKA| JatrcurcJcr4U31037.10
165 RIINTFQEMKTSFNVALLSIFG-KDEFLYREDLKRCYYILEKGYNSMPINLPGTLFNKS| Maniescu17967988
165 RDINTFQEMKTAFNVALLSIFG-KDEFQYREELKKCYYILEKGYNSMPINLPGTLFHKA| Ricicomm16809073
166 RSINTFQEMKTTFNVALLSIFG-KDEILYREELKKCYYILEKGYNSMPINIPGTLFNKS| Vitivini17841677
163 RLITTFQEMKTTFNVALLSIFGKDDQVLYREDLKRCYYILEKGYNSMPINIPGTLFNKA| Gossraim26819267
164 RLVNTFQEMKTAFKIALLSIFG-KDEIKYREDLKKCYYILEKGYNSMPINLPGTLFNKS| Eucagran23577869
169 RLVNTFQEMKTTFNVALLSIFG-KDEILYREDLKRCYYILEKGYNSMPINLPGTLFHKS| Prunpers17642522
162 QLINTFQEMKTAFNVALMSIFG-KDEILYREELKKCYVVLERGYNSMPINLPGTLFHKS| Aquicoer22024426
163 RLINTYQEMKTTFNVALLSIFG-KDEMLYREDLKRCYYVLETGYNSMPINLPGTLFHKS| Solalyco27305059
163 RLINTYQEMKTTYNVALLSIFG-KDEMLYREDLKRCYYVLETGYNSMPINLPGTLFHKS| Solatube24390442
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163 TQLNTYQEMKTTFNVALISILG-KDEVYYREDLKRCYYILEKGYNSMPVNLPGTLFHKA| Arabthal19667813
163 TQLNTYQEMKTTFNVALISILG-KDEVFYREDLKRCYYILEKGYNSMPVNLPGTLFHKA| Capsrube20913401
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166 TQLNTYQEMKTTFNVALISILG-EDAVLYREDLKRCYYILEKGYNSMPVNLPGTLFHKA| Brasrapa22695554
166 QLITTFQEMKTAFNVALLSIFG-KDEVLYREDLKECYYILEKGYNSMPVNLPGTLFHKA| Mimugutt17677772
169 PQINTYLEMKSTFNVALLSIFG-KDATLYREDLKRCYYILEKGYNSMPVNLPGTLFHKA| Linuusit23142300
169 PQINTYLEMKSTFNVALLSIFG-KDATLYREDLKRCYYILEKGYNSMPVNLPGTLFHKA| Linuusit23172097
163 EEINTYLEMKTTFNVALLSIFG-NDGMMYGEELKRCYYILEKGYNSMPVNLPGTLFHKA| Linuusit23147631
163 TQLNTYQEMKTTFNVALISILG-KDEVLYREDLKRCYYILEKGYNSMPVNLPGTLFHKA| Arablyra16054334
168 RLITTFQEMKSTFNVALLSIFG-KDEVLYREDLKRCYYILEKGYNSMPINLPGTLFHKS| Poputric26992999
166 REITTFLEMKTTFNVALLSIFG-KDEVLYREDLKRCYYILEKGYNSMPINLPGTLFNKS| Theocaca27450440
166 TQLNTYQEMKTTFNVALLSIFG-KDEIFYREDLKRCYYILEKGYNSMPVNLPGTLFHKA| Brasrapa22691221
162 RLITTFQEMKTTFNVALLSIFG-EDEVKYREDLKRCYYILEKGYNSMPINLPGTLFHKA| Gossraim26774033
166 RSFNTYQEMKTTFNVALLSIFG-KDEVFYREDLKRCYYILEKGYNSMSINIPGTLFHKS| Fragvesc27269381
163 TMINTYQEMKTTFNVALLSIFG-KDEVLYREDLKRCYYILEKGYNSMPVNLPGTLFHKS| Arablyra16060246
163 TMINTYQEMKTTFNVALLSIFG-KDEVLYREDLKRCYYILEKGYNSMPVNLPGTLFHKS| Arabthal19643917
163 TMINTYQEMKTTFNVALLSIFG-KDEVLYREDLKRCYYILEKGYNSMPVNLPGTLFHKA| Thelhalo20195894
165 KLITTFQEMKTAFNVALLSIFG-KDEVLYREDLKRCYYDLEKGYNSMPVNLPGTLFHKA| Mimugutt17693704
      o T$ EMK $.$j@AL@SIoG jD   Y E_LKjCYY LE GYNSM.@ oP TLFjK.

222 MAKRKELAQIVAKIISTRRQMK-L---DHNDLLGSFMGAKEGLTDEQIADNIIGVIFAAR| Camesine18135266
222 MAKRKELAQIVAKIISTRRQMK-L---DHNDLLGSFLGAKEGLTDEQIADNIIGVIFAAR| Citrclem20798056
224 MKARKELAQILAKTLSTRRQMK-L---DRTDLLGSFMGDKEGLTDEQIADNIIGVIFAAR| JatrcurcJcr4U31037.10
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224 MKARKELAQILAKTLSSRRQMK-L---DRNDLLGSFMEDKEGLTDEQIADNIIGVIFAAR| Ricicomm16809073
225 MKARKELAQILAKILSTRRQAN-G---DHNDLLGSFMGDKEGLTDEQIADNIIGVIFAAR| Vitivini17841677
223 MKARKEIAQILAKIISTRRQTK-QV--DCNDLLGSFMSDKEGLTDEQIADNVISVIFAAR| Gossraim26819267
222 MKARKELARILAKILVTRRQMK-L---DHNDLLASFMGDKEGLTDEQIADNIIGVIFAAR| Eucagran23577869
228 MKARKELAQILAKIISTRRQRKQVE--DHNDLLGSFMGDKEGLTDEQIADNIIGVIFAAR| Prunpers17642522
221 MKARKELAQILARIISTRRQRK-E---ETTDLLGSFMGDGEGLTDEQIADNVIGVIFAAR| Aquicoer22024426
222 MKARKELAKMLAKIISVRRETN-Q---NHADLLGSFMGDQEDLTDEQIADNVIGVIFAAR| Solalyco27305059
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222 MKARKELAKIVAKIISTRREMK-I---DHGDLLGSFMGDKEGLTDEQIADNIIGVIFAAR| Solalyco27305816
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218 MKARKELSQILARILSERRQNG-S---SDNDLLGSFMEDKEELTDEQIADNIIGVIFAAR| Capsrube20896010
222 MKARKELSQILARILSERRDER-S---SHNDLLGSFMGDKEELSDEQIADNIIGVIFAAR| Brasrapa22704316
222 MKARKELSQILARILSERRENR-S---SHNDLLGSFMEDKEELSDEQIADNIIGVIFAAR| Brasrapa22712651
222 MKARKELAQILANILSKRRQNP-S---SHTDLLGSFMEDKAGLTDEQIADNIIGVIFAAR| Arabthal19667813
222 MKARKELAQILANILSKRRQNS-S---THTDLLGSFMEDKEGLTDEQIADNIIGVIFAAR| Capsrube20913401
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222 MKARKELAQILANILSKRRQNS-G---SYKDLLGSFMEDKEGLSDEQIADNIIGVIFAAR| Thelhalo20202810
225 MKARKELAQILANILSKRRQNQ-S---THKDLLGSFMEDKEGLTDEQISDNIIGVIFAAR| Brasrapa22695554
223 MKARKELSKILAKILSLRRQMK-M---NHTDLLGSFMEDSEGLTDEQIADNIIGVIFAAR| Mimugutt17677772
227 MKARKQLALILAKIMARRRELK-MEEEDHNDLLGSFMEDKEGLTDEQIADNVIGVIFAAR| Linuusit23142300
228 MKARKELALILAKIMARRREMK-IQEEDHNDLLGSFMVDKAGLTDEQIADNVIGVIFAAR| Linuusit23172097
222 MKARKEIATIVARIMATRRETK-M---EYNDLLGSFMEDKEGLTDEQIADNVIGVIFAAR| Linuusit23147631
222 MKARKELAQILANILSKRRQNS-S---SHTDLLGSFMEDKEGLSDEQIASSHTDLL--GS| Arablyra16054334
227 MKARKELARILAKIISTRRQMK-L---DHNDLLGSFMGDKEGLTDDQIADNIIGVIFAAR| Poputric26992999
221 MKARKELAQILAKILSTRRQMK-L---DCNDLLGSFMGDKEGLTDEQIADNIIGVIFAAR| Theocaca27450440
225 MKARKELAHILAKILTKRRQNP-S---THKDLLGSFMEEKEGLSDEQIADNIIGVIFAAR| Brasrapa22691221
222 MKARKELAQILAKIISTRRETK-Q---EYNDLLGSFMGDKEGLTDEQIADNIIGVIFAAR| Gossraim26774033
225 MKARKELAQILAKIISTRRESK-LD--DHNDLLGSFMGDKEGLTDEQIADNVIGVIFAAR| Fragvesc27269381
222 MKARKELSQILARILSERRQNG-S---SHNDLLGSFMEDKEELTDEQIADNIIGVIFAAR| Arablyra16060246
222 MKARKELSQILARILSERRQNG-S---SHNDLLGSFMGDKEELTDEQIADNIIGVIFAAR| Arabthal19643917
222 MKARKELSQILARILSERRENS-S---SHNDLLGSFMGDKEELSDEQIADNIIGVIFAAR| Thelhalo20195894
224 MARRKQLSKILAKILSLRREMK-Q---SHNDLLGSFMQDSEGLTDEQIADNIIGVIFAAR| Mimugutt17693704
    M+ARK_@. @@Aj @  RR_          DLL.SF@     L.D_QI.     @@$..

278 DTTASALTWIVKYLGENPGVLQAVTEEQEAIIKSKE-KS-----GEEEVLSWADTKKMPI| Camesine18135266
278 DTTASALTWIVKYLGENPGVLQAVTEEQEAIIKSKE-KS-----GEEEVLSWADTKKMPI| Citrclem20798056
280 DTTASVLTWILKYLEENPSVLEAVTEEQEEIVKSKE-EG-----DENIFLTWADTKKMPI| JatrcurcJcr4U31037.10
280 DTTASVLTWILKYLGENPSVLQAVTEEQEKIVASKE-KC-----GEEKLLTWADTKKMPI| Maniescu17967988
280 DTTASVLTWIIKYLGENPSVLQAVTEEQEEIVRSKE-KS-----GEQKVLSWADTKKMPV| Ricicomm16809073
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278 DTTASVLTWIVKYLGENPSVLEAVTEEQEAIRRTKE-ES-----SEEKVLTWADTKNMPM| Eucagran23577869
286 DTTASVLTWIVKYLGENPSVLQAVTEEQEAIMRTKE-EEEGDDEGNQKALSWSDTKKMPM| Prunpers17642522
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279 DTTASVLTWIVKYLAENPSVLQAVTEEQEELKKNKE-EN-----G----LNWADTKKMPI| Mimugutt17677772
286 DTTASALTWVLKFLGDNPTVLQAVTEEQEEIGREMR-K------REKEVMSWGDAKKMPT| Linuusit23142300
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281 DTTASALTWVLKYLGQNHSVLQAVTEEQEGIKGEMR-N------REDGVLSWEDMKKMPI| Linuusit23147631
276 DTTASVLTWILKYLADNP------TEEQMAIRKDKK---------EGESLTWEDTKKMPL| Arablyra16054334
283 DTTASVLTWILKYLGENPSVLQAVTEEQEAIMRSEE-KG-----DEEKLLTWADTKKMPI| Poputric26992999
277 DTTASVLTWIIKYLGENLSVLQAVTEEQEAIIRSKE-KC-----GEEQTLTWADTRKMPI| Theocaca27450440
281 DTT----------LADNPTVLEAVTEEQMAIRKGKK---------EGESLTWEDTKKMTL| Brasrapa22691221
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282 DTTASVLTWIMKYLGENPSVLEAVTEEQEAIMKLKE-ES-----GEEKVLNWEDTKKMPI| Fragvesc27269381
278 DTTASVMSWILKYLAENPNVLEAVTEEQMAIRTDKE---------EGEALTWGDTKKMPL| Arablyra16060246
278 DTTASVMSWILKYLAENPNVLEAVTEEQMAIRKDKE---------EGESLTWGDTKKMPL| Arabthal19643917
278 DTTASVMTWILKYLAENPNVLEAVTEEQMAIRKGKE---------EGESLTWGDAKKMPI| Thelhalo20195894
280 DTTASILTWILKFLAENPTVLQAVTEEQEEVMKGKE-EC-----GEEKSLTWGDTKKMPL| Mimugutt17693704
    DTT.. @.$@@+$L _N  @@_.@TjEQ  @                  @ W j +jM.

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332 TSRVIQETLRVASILSFTFREAVEDVEYEGYLIPKGWKVLPLFRNIHHSPEIFPDPEKFD| Citrclem20798056
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334 TSRVIQETLRVASILSFTFREAVEDVEYEGYLIPKGWKVLPLFRNIHHSPESFPDPEKFD| Maniescu17967988
334 TSRVIQETLRVASILSFTFREAVEDVEYEGYLIPKGWKVLPLFRNIHHSPEIFPDPEKFD| Ricicomm16809073
335 TSRVIQETLRIASILSFTFREAVEDVEFEGYLIPKGWKVLPLFRNIHHSPDIYPEPEKFD| Vitivini17841677
330 TSRVIQETLRVASILSFTFREAVEDVEYEGYLIPKGWKVLPLFRNIHHSPEIFPDPQKFD| Gossraim26819267
333 TSRVIQETLRVASILSFTFREAVEDVEYDGYLIPKGWKVLPLFRNIHHSPENFPEPEKFD| Eucagran23577869
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325 TSRVIQETLRVASILSFTFREAVEDVEYEGYLIPKGWKVLPLFRNIHHSADIFPDPEKFD| Aquicoer22024426
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329 TSRVIQETLRVASILSFTFREAVEDVEYEGYLIPKGWKVLPLFRNIHHSADIFSNPGKFD| Brasrapa22712651
329 TYRVIQETLRAATILSFTFREAVEDVEYEGYLIPKGWKVLPLFRNIHHNADIFSDPGKFD| Arabthal19667813
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329 TSRVVQETMRVATILSFTFREAVEDVEYEGYLIPKGWKVLPLFRNIHHNADFFSDPGKFD| Thelhalo20202810
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339 SSRVIQETLRVASILSFTFREAVEDVEYEGYMIPKGWKVLPLFRNIHHSADNFSDPEKFD| Linuusit23142300
340 SSRVIQETLRVASILSFTFREAVEDVEYEGYMIPKGWKVLPLFRNIHHNPDNFSDPEKFD| Linuusit23172097
331 TSRVIQETLRVASILSFTFREAVEDVEYEGYLIPKGWKVLPLFRNIHHSPEIFPDPEKFD| Linuusit23147631
321 TYRVIQETLRAATILSFTFREAVEDVEYEGYLIPKGWKVLPLFRNIHHNADIFSDPGKFD| Arablyra16054334
337 TSRVIQETLRVASILSFTFREAVEDVEYEGYLIPKGWKVLPLFRNIHHSPELFPDPEKFD| Poputric26992999
331 TSRVIQETLRVASILSFTFREAVEDVEYEGYLIPKGWKVLPLFRNIHHNPEIFPDPEKFD| Theocaca27450440
332 TSRVVQETMRVATILSFTFREAVEDVEYEGYLIPKGWKVLPLFRNIHHNADFFSDPGKFD| Brasrapa22691221
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336 TSRVLQETLRVASILSFTFREAVEDVEYEGYLIPKGWKVLPLFRNIHHSPEIFPEPEKFD| Fragvesc27269381
329 TSRVIQETLRVASILSFTFREAVEDVEYEGYLIPKGWKVLPLFRNIHHSADIFSNPGKFD| Arablyra16060246
329 TSRVIQETLRVASILSFTFREAVEDVEYEGYLIPKGWKVLPLFRNIHHSADIFSNPGKFD| Arabthal19643917
329 TSRVLQETLRVASILSFTFREAVEDVEYEGYLIPKGWKVLPLFRNIHHSADIFSNPGKFD| Thelhalo20195894
334 TKRVIQETLRVASILSFTFREAVQDVEFNGYLIPKGWKVMPLFRNIHHSPENFPEPEKFD| Mimugutt17693704
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394 PSRFEVAPKPNTFVPFGNGTHSCPGNELAKLEILVLLHHLTTMYRWSMVGSDNGIQYGPF| JatrcurcJcr4U31037.10
394 PSRFEVAPKPNTFMPFGNGTHSCPGNELAKLEILVLLHHLTTKYRWSMVGTDNGIQYGPF| Maniescu17967988
394 PSRFEVAPKPNTFMPFGNGTHSCPGNELAKLEILVLLHHLTTKYRWTMVSTDNGIQYGPF| Ricicomm16809073
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390 PSRFEVAPKPNTFMPFGSGTHSCPGNELAKLEIMVLLHHLTTKYRWSMVGSNSGIQYGPF| Gossraim26819267
393 PSRFEVAPKPNTFLPFGNGVHSCPGNELAKLEILVLLHHLTTKYRWCIMGSQNGIQYGPF| Eucagran23577869
405 PSRFEVAPKPNTYMPFGSGTHSCPGNELAKLEILVFLHHLTTKYRWSMVGAQNGIQYGPF| Prunpers17642522
385 PSRFEVAPKPNTYMPFGNGTHACPGNELAKLEILVLLHHLTTKYRWSMVGPQTSIQYGPF| Aquicoer22024426
386 PSRFEVTPKPNTFMPFGNGTHSCPGNELAKLEILILVHHLTTKYRWSMMGPQNGIQYGPF| Solalyco27305059
386 PSRFEVTPKPNTFMPFGNGTHSCPGNELAKLEILILVHHLTTKYRWSMMGPQNGIQYGPF| Solatube24390442
392 PSRFEVSPKPNTFMPFGNGVHSCPGNDLAKLEILILVHHLTTKYRWSMVGPQNGIQYGPF| Solalyco27305816
392 PSRFEVSPKPNTFMPFGNGVHSCPGNELAKLEILILVHHLTTKYRWSMVGPQNGIQYGPF| Solatube24392954
385 PSRFEVAPKPNTFMPFGNGTHSCPGNELAKLEMSIMIHHLTTKYSWSIVGANEGIQYGPF| Capsrube20896010
389 PSRFEVAPKPNTFMPFGNGTHSCPGNELAKLEISIMIHHLTTKYRWSIVGASDGIQYGPF| Brasrapa22704316
389 PSRFEVAPKPNTFMPFGNGTHSCPGNELAKLEMSIMIHHLTTKYRWSIVGASDGIQYGPF| Brasrapa22712651
389 PSRFEVAPKPNTFMPFGSGIHSCPGNELAKLEISVLIHHLTTKYRWSIVGPSDGIQYGPF| Arabthal19667813
389 PSRFEVAPKPNTFMPFGSGIHSCPGNELAKLEISVLIHHLTTKYRWSVVGPSDGIQYGPF| Capsrube20913401
388 PSRFEVAPKPNTFMPFGNGIHSCPGNELAKLEISILIHHLTTKYRWSIVGPSDGIQYGPF| Brasrapa22713166
389 PSRFEVAQKPNTFMPFGSGIHSCPGNELAKLEISILIHHLTTKYRWSIVGPSDGIQYGPF| Thelhalo20202810
392 PSRFEVAPKPNTFIPFGNGIHSCPGNELAKLEIFILIHHLTTKYKWSIVGPSEGIQYGPF| Brasrapa22695554
389 PSRFEVAPKPNTFMPFGSGIHSCPGNELAKLEILVLVHHLTTKYRWSMMGPQNGIQYAPF| Mimugutt17677772
399 PSRFEVAPRANTFLPFGSGTHSCPGNELAKVEILVLLHHLTTKYRWSMVGDSSGIQYGPF| Linuusit23142300
400 PSRFKVAPRANTFMAFGSGTHSCPGNELAKVEILVLLHHLTTKYRWSMVGDSSGIQYGPF| Linuusit23172097
391 PSRFMVAPKPNTFMPFGSGTHSCPGNELAKVEILVLLHHLTTKYRWSTVGENDGIQYGPF| Linuusit23147631
381 PSRFEVAPKPNTFMPFGSGIHSCPGNELAKLEISVLIHHLTTKYRWSIVGPSDGIQYGPF| Arablyra16054334
397 PSRFEVAPKPNTFMPFGNGTHSCPGNELAKVEILVLLHHLTTKYRWSIVGANNGIQYGPF| Poputric26992999
391 PSRFEATPKPNTFLPFGNGTHSCPGNELAKLEIMVLLHHLTTKYRWSMAGANSGIQYGPF| Theocaca27450440
382 PSRFEVAPKPNTFMPFGSGIHSCPGNELAKLEISILIHHLTTKYRWSIVGPSDGIQYGPF| Brasrapa22691221
392 PSRFEVVPKPNTFMPFGNGTHSCPGNELAKLEIMVLLHHLTTKYRWSMVGTNSGIQYGPF| Gossraim26774033
396 PTRFEVAPKPNTYMPFGSGNHSCPGNELAKLEILVILHHLTTKYRWSIVGAENGIQYGPF| Fragvesc27269381
389 PSRFEVAPKPNTFMPFGNGTHSCPGNELAKLEMSIMIHHLTTKYSWSIVGESDGIQYGPF| Arablyra16060246
389 PSRFEVAPKPNTFMPFGNGTHSCPGNELAKLEMSIMIHHLTTKYSWSIVGASDGIQYGPF| Arabthal19643917
389 PSRFEVAPKPNTFMPFGNGTHSCPGNELAKLEMSIMIHHLTTKYRWSIVGASDGIQYGPF| Thelhalo20195894
394 PSRFEVSPKPNTFMPFGNGVHSCPGNELAKLEIMVLLHHLTTKYRWSMMAPQNGIQYGPF| Mimugutt17693704
    P.RF    +.NT$@.FG G H.CPGN_LAK@E@ @o@HHLTT Y W   .   .IQY.PF

452 ALPMNGLPIRLAQK-SKDKSEITIHNM                                 | Camesine18135266
452 ALPMNGLPIRLAQK-SKDKS-------                                 | Citrclem20798056
454 ALPQNGLPIKLSQKLH-----------                                 | JatrcurcJcr4U31037.10
454 ALPQNGLPIKLSQK-S-----------                                 | Maniescu17967988
454 ALPQNGLPIKLSQK-S-----------                                 | Ricicomm16809073
456 ALPQNGLPITISLK-S-----------                                 | Vitivini17841677
450 ALPQNGLPIRLVRK-------------                                 | Gossraim26819267
453 ALPQNGLPIRLYQR-TSKE--------                                 | Eucagran23577869
465 ALPQNGLPIRLSPK-T-----------                                 | Prunpers17642522
445 ALPQNGLPIRLSRK-T-----------                                 | Aquicoer22024426
446 ALPQNGLPIMLSHK-TS----------                                 | Solalyco27305059
446 ALPQNGLPIILSHK-TSS---------                                 | Solatube24390442
452 ALPQNGLPIKLSLK-TSST--------                                 | Solalyco27305816
452 ALPQNGLPIKLSLK-TSST--------                                 | Solatube24392954
445 ALPQNGLPIMLARK-SEIQV-------                                 | Capsrube20896010
449 ALPQNGLPIMLARK-------------                                 | Brasrapa22704316
449 ALPQNGLPIMLTRK-SEIDM-------                                 | Brasrapa22712651
449 ALPQNGLPIALERK-P-----------                                 | Arabthal19667813
449 ALPQNGLPIALERK-PQVE--------                                 | Capsrube20913401
448 ALPQNGLPIALERK-PEVDI-------                                 | Brasrapa22713166
449 ALPQNGLPIALQRK-PEVDV-------                                 | Thelhalo20202810
452 ALPQNGLPIALERK-PEVDM-------                                 | Brasrapa22695554
449 ALPQNGLPITLSLK-R-----------                                 | Mimugutt17677772
459 ALPQNGLPIKLSFK-K-----------                                 | Linuusit23142300
460 ALPQNGLPIKLSFK-K-----------                                 | Linuusit23172097
451 ALPQNGLPIKLSLR-K-----------                                 | Linuusit23147631
441 ALPQNGLPIALERK-P-----------                                 | Arablyra16054334
457 ALPQNGLPIILSHK-S-----------                                 | Poputric26992999
451 ALPQNGLPIRLTRK-P-----------                                 | Theocaca27450440
442 ALPQNGLPIALERK-PEADV-------                                 | Brasrapa22691221
452 ALPQNGLPIRLIRK-S-----------                                 | Gossraim26774033
456 ALPQNGLPIILSSK-E-----------                                 | Fragvesc27269381
449 ALPQNGLPIVLARK-SEIEV-------                                 | Arablyra16060246
449 ALPQNGLPIVLARK-PEIEV-------                                 | Arabthal19643917
449 ALPQNGLPIVLARK-SEIDM-------                                 | Thelhalo20195894
454 PLPQNGLPIKLSLK-K-----------                                 | Mimugutt17693704
    .LP NGLPI @  +
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Fig. S1D: An example of GSA-MPSA

▼phase0 ▼phase1 ▼phase2

(before)

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>RBP_M50_Org.4 [37:338]  ( 1 - 338 )

  1 -----------------------------MA-RWWRSAGGG-LRSLLSSPN-P-------| Fragvesc27258433
  1 RNQAPKQPPKRKN----------------MA-NRWRSAGGN-LRAVLQNPS-SRQQ---A| Prunpers17667904
  1 -----------------------------ML-RLWRGLKTV-VQTSP------------| Gossraim26816562
  1 -----------------------------MS-KLWRGLKTV-VQTPT------------| Theocaca27431311
  1 -----------------------------MA-QWWRCLRTV-VGQSPSPPP-QRQ----Q| Maniescu17986519
  1 -----------------------------MA-KWLRGLKTV-VQSSSP-----------| Ricicomm16805378
  1 -----------------------------MA-NWWRSARTN-LRLAAFSGT-KSES---F| Cucusati16971696
  1 -----------------------------MA-KWWRSLRTA-IQSPQQPLS-PPQ-----| Poputric27016917
  1 -----------------------------MA-KWWRSLRTA-IQYPRPPLS-PPQ-----| Poputric27031061
  1 -----------------------------MA-KWWRGLTTK-VPHCATSLT-PSP-----| Caripapa16423588
  1 -----------------------------MS-KWWRAVATT-AGGLRS------------| Solalyco27286613
  1 -----------------------------MS-KWWRAVATT-AGGLRS------------| Solatube24427917
  1 -----------------------------MA-QYWRGLKTA-AKFTPSPPS-PL------| Linuusit23139253
  1 -----------------------------MA-KYWRGLKTA-AKFTPPPPS-PL------| Linuusit23148893
  1 -----------------------------MT-----------------------------| Glycmax_26312779
  1 -----------------------------MAAQWWRSAAGH-LRTVAAGRG-S-------| Glycmax_26320749
  1 -----------------------------MA-QWWRSAAGH-LQTVAASRC-S-------| Phasvulg27143407
  1 -----------------------------MA-QWWRSAASH-LRSTEVNLF-S-------| Meditrun23036473
  1 -----------------------------MA-KWWRGLRSV----ANLPAS-SFG-----| Arablyra16046352
  1 -----------------------------MA-KWWRGLRSVTAEVADLPAS-SFG-----| Arabthal19671699
  1 ------------LKGKQTLTSHRSLNHTEMA-KWLRGLRSVTAEVADLPAS-SFG-----| Capsrube20913439
  1 -----------------------------MA-IWWRGVRSA-AEAANLPAAYSFG-----| Brasrapa22700651
  1 -----------------------------MA-KWWRGLRSA-AEVADLPAS-SFG-----| Thelhalo20199993
  1 -----------------------------MA-KWWRGLRSV-AEEADLSAS-SFV-----| Brasrapa22715722
  1 -----------------------------MT-LWCRTVQKV-AHNSRT------------| Camesine18124744
  1 -----------------------------MT-LWCRTVQKV-AHNSRT------------| Citrclem20802148
  1 -----------------------------MT-----------------------------| Caripapa16423587
  1 -----------------------------MS-KRWRAAAAL-IRTAA-------------| Mimugutt17678079
  1 -----------------------------MS-RWWGAAAGR-LRTAVSNPR-SLY----L| Vitivini17818550
  1 -----------------------------MA-RWWRAAAAGGLKTAALSSP-PPP-----| Eucagran23595478
  1 -----------------------------MS-RWWNAVVVG-GGEIKQ------------| Aquicoer22046950
  1 -----------------------------MA-QCLRGKGGA-AAVEEALRK-A--VP--W| Bracdist21823203
  1 -----------------------------MA-QCLRGKAAA-AAAAGVS------AP--W| Setaital19684886
  1 -----------------------------MA-LCLRRAAAA-AVGEALRRG-ASTAP--W| Oryzsati24122503
  1 -----------------------------MA-QFLRGKATA-AAAATAARE-A--AP--W| Sorgbico1951096
  1 -----------------------------MA-QFLRGKAAA-AAGAAVLRA-SSPAP--W| Zea_mays20883014
  1 -----------------------------RS-SSRKPRTRR-WRSVSAVGP-PPPPPGCR| Panivirg23820228
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 22 SLQSQSSLYHTIQAIPREFTGNRISAKDRAQGRIPAVVFAQPPP---ENSPK-----PTG| Fragvesc27258433
 39 PFQSFSALYHTIQAIPRECTGNRVSVKDRAQGRIPAVVFSQELN---PSTT-------TV| Prunpers17667904
 17 ---ANTHHYHTIQAIPRECTGSRISSRDRAQGRIPAVVFSQGLL---EKNP-------SN| Gossraim26816562
 17 ---GNSHHYHTIQAIPRECTGNRVSTRDRAQGRIPAVVFSQGLL---EKSP-------AN| Theocaca27431311
 25 SLYSLSSLYHTIQAIPREYTGSRVAARDRAQGRIPAVVFSQPLF---DKNP-------SS| Maniescu17986519
 18 SLNSQSSFYHTIQAIPRECTGSRVAARDRAQGRIPAVVFSQSLL---DKNP-------NS| Ricicomm16805378
 26 PFSSFRAAYHTIQAIPRECSGRKISSKDRAQGRIPAVVFSQQIL---EKNS-------VH| Cucusati16971696
 24 PF--QSSRYHTIQAIPREVVGSRVSAREREQGRIPAVVFSQSLL---DINP-------SN| Poputric27016917
 24 PFHSQSSRYHTIQAIPREVAGRRVSAREREQGRIPAVVFPQSLL---DKNP-------SN| Poputric27031061
 24 PLFSRACAYHTIQAIPRELRGSGVSAKDRVQGRIPAVVFSQSLL---DKDP-------AN| Caripapa16423588
 18 TEVTSRRTYFTIQAIPREVSGRRVSSRDRAQGRIPAVVFSQNYV---QSKPDDPTSIVAA| Solalyco27286613
 18 MEVTSRRSYFTIQAIPREVSGRRVSSRDRAQGRIPAVVFSQNYV---QSKPEDPTSIVAS| Solatube24427917
 23 YSQSQYYLYHTIQAIPREATGSRVADRDRAQGRIPAVVFSQSIL---DKSP-------NS| Linuusit23139253
 23 YSQSQTSLYHTIQAIPREATGSRVSDRDRAQGRIPAVVFSQSIL---DKSP-------NS| Linuusit23148893
  3 ---------------------------------------FFRKYFV---DTSG-------SH| Glycmax_26312779
 23 LSGFQRSTYHTIQAIPRECSGSKVSARDRTQGRIPCVVFLQNLL---EKNP-------DA| Glycmax_26320749
 22 SSVFRRNHYHTIQAIPRECTGSKVSARDRMQGRIPAVLFFQSLL---EKNP-------DG| Phasvulg27143407
 22 SSALRRNHYHTIQAIPREITGSRVAARDRKQGRIPAVVFFQDLL---EKSP-------EA| Meditrun23036473
 21 GSIRRIHQYQTIQAIPREATGRGVSARDRTIGRIPAVVFPQSLL---ETDA-------SK| Arablyra16046352
 25 RSIRCIHQYQTIQAIPREATGRGVSARDRTIGRIPAVVFPQSLL---DTDA-------SK| Arabthal19671699
 42 RSIRCIHQYQTIQAVPREAAGRGVSARDRTIGRIPAVVFPQSLI---ETDA-------SK| Capsrube20913439
 25 RSIRCLHQYETIQAIPREATGRRVSARDRTIGRIPAVVFTQSLL---ETDA-------SK| Brasrapa22700651
 24 RSIRCLHQYETIQAIPREATGRRVSARDRTIGRIPAVVFPQSLL---GTDA-------SK| Thelhalo20199993
 24 RSVRCLHQDETIQAIPREATGRRVSARDQTTGRIPAV▼---------------------| Brasrapa22715722
 18 PFSRTTSYYHTIQAIPRECTGSRVSARDRSQGRIPAVVFAQDLL---DKNT-------DR| Camesine18124744
 18 PFSRTTSYYHTIQAIPRECTGSRVSARDRSQGRIPAVVFAQDLL---DQNT-------DR| Citrclem20802148
  3 ------------------------------------------------------------| Caripapa16423587
 17 -ETPFRRSYHTIQAVPREISGHRISVRDRAQGRIPTVVFSQSYV---QSDSKDPNSVAAS| Mimugutt17678079
 25 SSSPPAAAYHTIQAISREFTGSKVSARDRAQGRIPAVVFAQQLLT--GGNI-------NG| Vitivini17818550
 25 VRPPPSSSYHTIQAIPRECSGSRVASRDRAQGRIPTVVFAQGLL---EKDP-------GA| Eucagran23595478
 18 AISFRLSSYHTLQAIPREYTGSRLAAKDRAQGRIPAVVFTQNQT---EHGK-------ET| Aquicoer22046950
 25 RRAASASYHHTIQAVPRETTGPRAAARERRNGHVPAVLLTLA-----GAGP-------GE| Bracdist21823203
 22 RRAASASYHHTIQAVPRETSGPRAAARERRHGRVPAVLLTLA-----GASP-------GN| Setaital19684886
 27 RRAASASYHHTIQALPRETAGPRAAARERRSGRVPAVLLALA-----GAGP-------GE| Oryzsati24122503
 25 RRTASASYHHTIQAVPRETAGPRAAARERRHGRVPAVLLTLA-----GAAP-------GN| Sorgbico1951096
 27 RRTASASYHHTIQAVPRETAGPRAAARERRHGRVPAVLLTLA-----GAAP-------GN| Zea_mays20883014
 29 RRRGGGRPRRRTTTRSRPCRGRR-QGRAPRRGSAATAASPRSCSRSRAPRP-------GT| Panivirg23820228
               . .+    .       +     .   .
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 74 RSIARKHLLTTERKQIQAILNS-VELPYFCSTTFPLQIRAGSGSSVLLESG-----K▼--| Fragvesc27258433
 89 RSVSKKHLLTAERKQIQAILKS-VELPFFCSTRFPLQIRAGSGSSDLLESGNVLPIK▼--| Prunpers17667904
 64 RSPSRKQILTTERKQIRSIIKS-VQLPFFCSTRFQLQIRAGSGSSVLLESGTVLPIK▼--| Gossraim26816562
 64 RSPSRKQLLTTERKQIQTILKS-VQLPFFCSTTFPLQIRAGSGSSVLLDSGRVLPIK▼--| Theocaca27431311
 75 PSISRKQLLTTERKQIHSILKS-VELPFFCSTTFQLQIRAGAGSSVLLDSRRVLPIK▼--| Maniescu17986519
 68 RSISRKQLLTTERKQIQSILTS-VELPFFCSTTFNLQIRAGSGSSVLIESGTILPIK▼--| Ricicomm16805378
 76 GSPSRKHLLTTERKQIHSILKS-VELPFFCSTRFKLQIRAGSGSSVLLESGSILPIK▼--| Cucusati16971696
 72 RYTSRKRLLTTEKKQIQAILKS-VEIPFFCSTTFPLQIRAGTGSSVLLESGTVLPIK▼--| Poputric27016917
 74 GLTSRKRLLTTEKKQIQAILKS-VQLPFFCSTTFPLQVRAGSGSSMLLESGTVMPIK▼--| Poputric27031061
 74 RFASRKQLLTTEKDQIQSIIKS-VQLPFFCSTTFPLQIRAGSGSS▼-------------| Caripapa16423588
 75 SSVSRKFLLTTERKQIKTIIDS-VDLPFFCSTTFPLQIRAGSGSSTLLESGKVLPIK▼--| Solalyco27286613
 75 SSVSRKFLLTTERKQIKTIIDS-VDLPFFCSTTFPLQIRAGSGSSTLLESGKVLPIKASD| Solatube24427917
 73 RSSSRKRLLTTEKKQILSILKS-LDSPYFCSTTFPLQIRAGSGSSVLLESGNVLPVK▼--| Linuusit23139253
 73 RSASRKRLLTTEKKQIQSILKS-LDSPYFCSTTFPLQIRAGSGSSVLLESGNVLPVK▼--| Linuusit23148893
 16 KFFFRK▼PRPEPK---TPNLNS-ADAPFFCSTRFPLQIRAGSGSSHLPESGTVLPIK▼--| Glycmax_26312779
 73 RSESKKHLLTVEKKQIKAILDS-ADAPFFCSTRFPLQIRAGSGSSHLLESGTVLPIK▼--| Glycmax_26320749
 72 RSESKKHLLTVEKKQIKAILDS-VDAPSFCSTRFPLQIRAGSGSSHLVESGTVLPIK▼--| Phasvulg27143407
 72 RSTSRKQLLTVEKRQIKAVLNS-IEAPFFCSTRFPLQIRAGSGSTHLLESGTVLPIK▼--| Meditrun23036473
 71 RGVSRKQLLTADNKQIKSIIDS-VGLPFFCSTTFQLQIRAGQGSSTLVESGRVLPLK▼--| Arablyra16046352
 75 RGVSRKQLLTADKKQIKSIIDS-VGLPFFCSTTFQLQIRAGQGSSTLVESGRVLPLK▼--| Arabthal19671699
 92 RGASRKQLLTADKKQIKSIIDS-VGLPFFCSTTFQLQIRAGQGSSTLVESGRVLPLK▼--| Capsrube20913439
 75 RGVSRKQLLTADKKQIKSIVDS-VGLPFFCSTTFKLQVRAGQGSSSLVESGRVLPLK▼--| Brasrapa22700651
 74 RGVSRKQLLTADRKQIKSILDS-VGLPFFCSTTFKLQIRAGQGSSTLIESGRVLPLK▼--| Thelhalo20199993
 61 ----------------------------------LQIRAGQGSSSLVESGQILPLK▼--| Brasrapa22715722
 68 RSPSRKQILSTERKQIHSILKS-VELPFFCSTTFPLQIRAGSGSSVLLDSGKVLPIK▼--| Camesine18124744
 68 RSPSRKQILSTERKQIHSILKS-VELPFFCSTTFPLQIRAGSGSSVLLDSGKVLPIK▼--| Citrclem20802148
  3 ------------------------------------------------------------| Caripapa16423587
 73 ALVSRKVLLTTERKQIKAILKH-IELPFFCSTTFPLQIRAGSGSSTILENGKVLPIK▼--| Mimugutt17678079
 76 RSVSRKRLLTTERKQIQAILKS-VEPEFICSTTFPLQIRAGSGSSVLLESGTVLPLK▼--| Vitivini17818550
 75 RSPSRKYLLTTERKQIKSILSS-VRLPFFCSTTFGLQIRAGSGSSTLLESGKVLPVK▼--| Eucagran23595478
 68 R------LLTIEKKQINSILKSSVQLPYFCSTTFKLQIRAGSGSSNLLHSGTVLPIK▼--| Aquicoer22046950
 73 G-VAHRKLLTTDRKQLSEMLK---QSPYFLSTPVRLQVRAGERSTAVVHSGTVLPIK▼--| Bracdist21823203
 70 G-VAHRKLLTAERKQLVEMVK---QSPYFLSTPVRLQVRAGERSNAVVHSGTVLPIK▼--| Setaital19684886
 75 G-VAHRKLLTADRKQLGEILK---QSPYFLSTPVRLQVRAGERSTAVVHSGTVLPIK▼--| Oryzsati24122503
 73 G-IAHRQLLTADRRQLAEMLK---QSPYFLSTPVRLQVRAGERSNAIVHAGTVLPIK▼--| Sorgbico1951096
 75 G-IAHRHLLTADRRQLAEMLK---QSPYFLSTPVRLQVRAGERSNAILHAGTVLPIK▼--| Zea_mays20883014
 81 G-IAHRRLLTADRRQVAEMLK---QSPYFLSTPVRLQVRAGERSNAVVHSGTVLPIK▼--| Panivirg23820228
       ++    .  jj_@    @         oo.. o @_@+..   .  @ j   @@.@+
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125 ----IHRDEESGKILNLVFVWADEGSELKVDVPVTFKGEDVCPGLKK▼G--HLNKIRTSL| Fragvesc27258433
145 ----IHRDEESGKILNLVFVWADEGSQLKVDVPVVFKGEDVCPGLKK▼G--HLNKIRTSL| Prunpers17667904
120 ----IHRDEESGKILNLVFVWADEGTELKVDVPVVFKGLEDCPGLKK▼G--YFKMIRSSL| Gossraim26816562
120 ----IHRDEESGKILNLVFVWADEGTKLKVDVPVVFKGEEDCPGLKK▼G--SLNRIRTSL| Theocaca27431311
131 ----IHRDEETGKILNLVFVWADEGTELKVDVPIVFKGEEDCPGLKK▼G--HFKRVRNSL| Maniescu17986519
124 ----VHRDEETGKILNLVFVWADDGTELKVDVPLIFKGEEDCPGLKK▼G--KLNRIRKSL| Ricicomm16805378
132 ----IHRNEETGKIFNIVFVWADEGSELKVDVPIVFKGEEACPGLQK▼G--QLNKIRTSL| Cucusati16971696
128 ----IHRDEKTGKILNLVFAWADEGTEMKVDVPVVFKGEENCPGLKK▼G--HLKMMRSTL| Poputric27016917
130 ----IHRSEKTGKILNLVFVWADEGTELKVDVPVVFKGEENCPGLKK▼G--HLKMIRSTL| Poputric27031061
118 ----IHRNEETGKILNLVFVWADEGTELKVDVPVIFKGIDKSPGLSK▼MILSLSTVRLSW| Caripapa16423588
131 ----IHKDEETGKILNLVFVWAEDGTKLRVDVPVVFKGEHECPGLKK▼G--YLNKIRPSL| Solalyco27286613
134 PSSC▼HKDEETGKILNLVFVWAEDGTKLRVDVPVVFKGEHECPGLKK▼G--YLNKIRPSL| Solatube24427917
129 ----VHRDKETGKIMNLVFVWADPGTELKVDVPVVFKGEENCPGLLK▼G--RLNRLRDTL| Linuusit23139253
129 ----VHRDKETGKIMNLVFVWADPGTEVKVDVPVVFKGEENCPGLLK▼G--RLNRLRDTL| Linuusit23148893
 69 ----IHRDEESGKILNLVFVWAEDGMKLKVDVPVVFKGEDACPGVQK▼G--ILNKIRPSL| Glycmax_26312779
129 ----IHRDEESGKILNLVFVWAEDGMKLKVDVPVVFEGEDACPGVQK▼G--ILNKIRPSL| Glycmax_26320749
128 ----IHRDKESGQILNLVFVWAEDGMKLKVDVPVIFKGEDVCPGIQK▼G--ILNKIRPSL| Phasvulg27143407
128 ----IHRDEESGNILNLVFVWAEDGMNLKVDVPVVIKGEDVCPGLKK▼G--FLNKIRTSL| Meditrun23036473
127 ----IHRDEENGKILNLVFVWADDGEKLKVDVPVVFNGLDNCPGLKK▼G--NLRSIRSTL| Arablyra16046352
131 ----VHRDEETGKILNLVFVWADDGEKLKVDVPVVFKGLDHCPGLQK▼G--NLRTIRSTL| Arabthal19671699
148 ----IHRDEETGKILNLVFVWADDGEKLKVDVPVVFKGLDHCPGLKK▼G--NLRSIRSTL| Capsrube20913439
131 ----IHRDEESGKILNLVFVWANDGEQLKVDVPIVFKGLDDCPGLKK▼G--NLRSMRSTL| Brasrapa22700651
130 ----IHRDEETGKILNLVFVWADDGEQLKVDVPVVFKGLENCPGLKK▼G--NLLSIRSSV| Thelhalo20199993
 83 ----IHRDEESGKILK--FSIRNDGEQLKVDVPLVFKWLDNCPGIKK▼G--SLRSMRSSL| Brasrapa22715722
124 ----VHRDEETGRILNLVFVWADDGTELKVDVPVVFKGVESCPGLKK▼G--YLKSIRTSL| Camesine18124744
124 ----VHRDEETGRILNLVFVWADDGTELKVDVPVVFKGVESCPGLKK▼G--YLKSIRTSL| Citrclem20802148
  3 -------------VGHGFVWKKTIT-------------------NS▼G--YLNKIRTTL| Caripapa16423587
129 ----IHRDED-GKVLNLVLVWAEDGTQIKVDVPVIVYKGEDVCPGLKK▼G--TLSKIRASL| Mimugutt17678079
132 ----IHRDEATGKVLNLVLFAWADEGSELKVDVPLVFKGEDVCPGLKK▼G--YLNRIRPSL| Vitivini17818550
131 ----VHRDEETGKILNLVLVWADEGSKLKVDVPVAFKGEEVCPGLKK▼G--YLNAIRTSL| Eucagran23595478
119 ----VHRDSE-GNILNLVLVWANEGTEVRVDIPVEFKGEEVAPGVKK▼G--YLHKVRPSL| Aquicoer22046950
126 ----VHTDESTGNILNLVMVQADEGTMIKVNLPVVFKGEDVCPGLKK▼G--FLQKIRTSL| Bracdist21823203
123 ----VHRDESTGHILNLVMVQADEGTMLKVNLPVEFKGESACPGLKK▼G--FLQKIRTSL| Setaital19684886
128 ----VHRDETTGNILNLVLVEADEGTMLKVNLPVEFKGEDTCPGLKK▼G--FLQKIRTSL| Oryzsati24122503
126 ----VHRDETSGNILNLVMVKADEGTMLKVDLPVEFKGEDTCPGLKK▼G--FLQKIRTSL| Sorgbico1951096
128 ----VHRDENSGNILNLVMVKADEGTMLKVDLPVEFKGKDACPGLKK▼G--FLQKIRTSL| Zea_mays20883014
134 ----VHRDETTGNILNLVMVQADEGTMLKVNLPVEFKGETACPGLKK▼G--FLQKIRTSL| Panivirg23820228
       @+      .j@o    o    j     @+@_@.@ oj       ..@         o  @R .o
```

```
179 KYLCPAEHIPPKIEVDISNLDIGDRVCLPDVKVHPSLKLLSKNDVIPICKIVATK-----| Fragvesc27258433
199 KYLCPAEHIPPKIEVDVSKLDIGDRVFIPDVEVHPSMKLL▼-------------------| Prunpers17667904
174 KFQCPAEHIPQKIEVDVSKSDIDDRVLMHDIEVHPSMKLLSKNESMPICKIAPTY-----| Gossraim26816562
174 KYLCPAEHIPPKIEVDVSKLDIGDRVLMHDVEVHPSLKLLSKNESMPMCKIVATN-----| Theocaca27431311
185 KFLCPADQIPANIEVDVSNIDIGGRVLMRDIEFHPSLKLLSKNEELPICKIVAIK-----| Maniescu17986519
178 KVLCPAEHIPPKLEVDVSSLDIGDKVSMGDVEVHPSLKLLSKNENIPICKIVSTD-----| Ricicomm16805378
186 KYLCPAEHIPSKIEVDVSNLDIGDRIFIRDVDVHSSMKLLSKNEVMPICKIVTIK-----| Cucusati16971696
182 KYLCPAEHIPQKIEVDISNLDIEDGLFMRDIEVHSSLKLLSKNENMPVCKIVATNLDTPE| Poputric27016917
184 KYICPAEQIPQKIEVDVSNLDIEDRVYMRDIEVHPSLKLLSKNENLPICKCVATNLDSPE| Poputric27031061
174 QL--------------------------DVTVQLRMSFLEQE----IC-----------| Caripapa16423588
185 KLLCPAENIPQKIEVDISQLDVEDKVSLHDIDVHPTWKLLSKNETIPVCKVKAT------| Solalyco27286613
192 KFLCPAENIPQKIEVDISQLDVEDKVSLHDIDVHPTWKLLSKNEAIPVCKVKAT------| Solatube24427917
183 KLLCRAENIPQKIEVDLSNLDTGERVSVRDVNIDPTLKLLTKDESLPVCKVVSTN-----| Linuusit23139253
183 KLLCPVENIPQKIEVDLSKLDIGERVTVHDFNIDPSLKLLTKDESLPVCKVVSTN-----| Linuusit23148893
123 RFLCPSEHIPSNIAVDVSNLDIEDRIFMRDIEVHPSLKLLSKNENMPVCKIVPTS-----| Glycmax_26312779
183 KFLCPSEHIPSKIVVDVSNLDIEDRIFMRDIEVHPSLKLLSKNESMPICKIVPTS-----| Glycmax_26320749
182 KYLGPSEHIPSNVVVDVSNLDIEDRIFMRDIEVHPSLKLISKNENMPICKVVPTC-----| Phasvulg27143407
182 RYLGPSEHIPSKIEVDISNLDIEDRIFMRDIEVHPSLKLLNKNENMPICKIVPTSLGKQE| Meditrun23036473
181 KLLGPAEHIPSKIEVDVSELDIEDKVLLQDVVFHPSLKLLSKNETMPVCKIVATSP----| Arablyra16046352
185 KLLGPAEHIPSKIEVDVSNLDIEDKVLLQDVVFHPSLKLLSKNETMPVCKIVATSP----| Arabthal19671699
202 KLLGPAEHIPSKIEIDVSKLDIEDKVLLEDVVFHPSLKLLSKNETMPVCKIVATSP----| Capsrube20913439
185 KLLGPAEHIPSKIEVDVSKLDIADKVLMQEVEFHPSLKLLSRNETLPVCKIVATSP----| Brasrapa22700651
184 KLVGPAENIPSKIEVDVSKLDIEDKVLMQEVEFHPSLKRLSMNET--VCKIVATSP----| Thelhalo20199993
135 KLIGPVEHMPSKIEVEVSKLDIGDRVLMQEVVFHPSLKLLSKNETLPVCKIAATSP----| Brasrapa22715722
178 KYLCPAEHISPKIEVDVSNLDIGDRVFMSDIEVHPSWKLLSKNEKMPLCKISATK-----| Camesine18124744
178 KYLCPAEHISPKIEVDVSNLDIGDRVFMSDIEVHPSWKLLSKNEKMPLCKISATK-----| Citrclem20802148
 28 KYLCPAEHIPPKIEVDVSNLDIGDRVFMSDIEVHPSLRLLSKNNSIPICKVAATN-----| Caripapa16423587
182 KYLCPAEHIPPKIEVDVSNLDIGDKVSMDDVAVHPSLKLLSKNETMPVCKIMSNIDYS--| Mimugutt17678079
186 KFLCPAEHIPSKIEVDVSNLDIGDRILMHDVEVHPSLKLLSKNETMPVCKIVAAK-----| Vitivini17818550
185 KFTCPAEHIPSKIEVDVSNLDIGDRIFMRDVEFHPSMELLSKNDAIPICKVMSTK-----| Eucagran23595478
172 RYECPAELIPPKIEVDVSKLDIGDRVYEKDLEVHPSMKLVSVNERKPVCKVRGTKPEVWE| Aquicoer22046950
180 VYLCPAEHIPPKIEVDLTNLDIGDRVLMNDIPVHPSLKLLSRNETMPVCKLLASK-----| Bracdist21823203
177 VYLCPAEHIPPKIEVDLANLDVGDRVLMHNIPVHPSLKLLSKNETMPVCKILASK-----| Setaital19684886
182 VYLCPAEHIPPKIEVDLANLDIGDRVSMNDIPVHPSLRLLSKNETMPVCKILASK-----| Oryzsati24122503
180 VYLCPAEHIPPKIEVDLTNLDVGDRVLMHDIPVHPSLKLLSKNETMPICKILASK-----| Sorgbico1951096
182 VYLCPAEHIPPKIEVDLTNLDVGDRVLMHDIPVHPSLKLLSKNETMPVCKILASK-----| Zea_mays20883014
188 VYLCPAEHIPPKIEVDLTNLDVGDRVLMHDIPVHPSLKLLSKNETMPVCKILASK-----| Panivirg23820228
      o     _ @. j@ @_@.  _     @    _o oj  o  @  __   .@.+o .
```

```
234 -------LETPEP------------A-G------V---                      | Fragvesc27258433
240 ----------------------------------V---                      | Prunpers17667904
229 -------IENPEP------------I-K------V---                      | Gossraim26816562
229 -------FENPEP------------M-K------V---                      | Theocaca27431311
240 -------SENPEP------------V-Q------V---                      | Maniescu17986519
233 -------LESPEPETEPETEPEPEPA-Q------A---                      | Ricicomm16805378
241 -------SETANTETSATSETS---E-T------S---                      | Cucusati16971696
242 PAALN--LESPEP------------A-EKQPVECL---                      | Poputric27016917
244 PVATN--LERPEP------------A-E------V---                      | Poputric27031061
192 --------------------------------------                      | Caripapa16423588
239 ------------P------------V-D------S---                      | Solalyco27286613
246 ------------P------------V-D------S---                      | Solatube24427917
238 -------SKASDP------------V-S------V---                      | Linuusit23139253
238 -------SKASEP------------V-S------A---                      | Linuusit23148893
178 -------LGNKEP------------I-E------A---                      | Glycmax_26312779
238 -------LGNKEP------------I-E------A---                      | Glycmax_26320749
237 -------LGNREP------------I-V------E---                      | Phasvulg27143407
242 VVPTS--LENQEP------------V-G------A---                      | Meditrun23036473
237 -------VKEPEA------------V-Q------A---                      | Arablyra16046352
241 -------VKEPEA------------V-Q------A---                      | Arabthal19671699
258 -------VKEPEA------------V-Q------A---                      | Capsrube20913439
241 -------VKEPEA------------V-Q------A---                      | Brasrapa22700651
238 -------VKEPED------------V-Q------A---                      | Thelhalo20199993
191 -------VKEPEA------------VLS------I---                      | Brasrapa22715722
233 -------LENPEP------------A-V------M---                      | Camesine18124744
233 -------LENPEP------------A-V------M---                      | Citrclem20802148
 83 -------LEASKPEKHDGAEDG---I-S------E---                      | Caripapa16423587
240 -------EKYTSR------------E-T------E---                      | Mimugutt17678079
241 -------LERAES------------G-E------V---                      | Vitivini17818550
240 -------SESAEP------------A-V------V---                      | Eucagran23595478
232 PKSKTKKLNESET------------V-A------A---                      | Aquicoer22046950
235 -------PVE---------------------------                       | Bracdist21823203
232 -------PVESET------------M-Q------DLKS                      | Setaital19684886
237 -------PVE---------------------------                       | Oryzsati24122503
235 -------PIEP--------------V-E----------                      | Sorgbico1951096
237 -------PDE---------------------------                       | Zea_mays20883014
243 -------PVESET------------M-Q------DLKS                      | Panivirg23820228
```

(after)

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> RBP_M50_Trd.4 [37:279]  ( 1 - 279 )

  1 ML-RLWRGLKTV-VQTSPA---------------NTHHYHTIQAIPRECTGSRISSRDRA| Gossraim26816562
  1 MS-KLWRGLKTV-VQTPTG---------------NSHHYHTIQAIPRECTGNRVSTRDRA| Theocaca27431311
  1 MA-QWWRCLRTV-VGQSPSPPP---QRQ-QSLYSLSSLYHTIQAIPREYTGSRVAARDRA| Maniescu17986519
  1 MA-KWLRGLKTV-VQSSSP-----------SLNSQSSFYHTIQAIPRECTGSRVAARDRA| Ricicomm16805378
  1 MA-NWWRSARTN-LRLAAFSGT---KSESFPFSSFRAAYHTIQAIPRECSGRKISSKDRA| Cucusati16971696
  1 MA-KWWRSLRTA-IQSPQQPLS---PPQ--PF--QSSRYHTIQAIPREVVGSRVSARERE| Poputric27016917
  1 MA-KWWRSLRTA-IQYPRPPLS---PPQ--PFHSQSSRYHTIQAIPREVAGRRVSARERE| Poputric27031061
  1 MS-KWWRAVATT-AGGLRS-----------TEVTSRRTYFTIQAIPREVSGRRVSSRDRA| Solalyco27286613
  1 MA-QYWRGLKTA-AKFTPSPPS---PL---YSQSQYYLYHTIQAIPREATGSRVADRDRA| Linuusit23139253
  1 MA-KYWRGLKTA-AKFTPPPPS---PL---YSQSQTSLYHTIQAIPREATGSRVSDRDRA| Linuusit23148893
  1 MAAQWWRSAAGH-LRTVAAGRG---S----LSGFQRSTYHTIQAIPRECSGSKVSARDRT| Glycmax_26320749
  1 MA-QWWRSAAGH-LQTVAASRC---S----SSVFRRNHYHTIQAIPRECTGSKVSARDRM| Phasvulg27143407
  1 MA-QWWRSAASH-LRSTEVNLF---S----SSALRRNHYHTIQAIPREITGSRVAARDRK| Meditrun23036473
  1 MA-KWWRGLRSV----ANLPAS---SFG--GSIRRIHQYQTIQAIPREATGRGVSARDRT| Arablyra16046352
  1 MA-KWWRGLRSVTAEVADLPAS---SFG--RSIRCIHQYQTIQAIPREATGRGVSARDRT| Arabthal19671699
  1 MA-IWWRGVRSA-AEAANLPAAY--SFG--RSIRCLHQYETIQAIPREATGRRVSARDRT| Brasrapa22700651
  1 MA-KWWRGLRSA-AEVADLPAS---SFG--RSIRCLHQYETIQAIPREATGRRVSARDRT| Thelhalo20199993
  1 MT-LWCRTVQKV-AHNSRT-----------PFSRTTSYYHTIQAIPRECTGSRVSARDRS| Camesine18124744
  1 MT-LWCRTVQKV-AHNSRT-----------PFSRTTSYYHTIQAIPRECTGSRVSARDRS| Citrclem20802148
  1 MS-KRWRAAAAL-IRTAAE-------------TPFRRSYHTIQAVPREISGHRISVRDRA| Mimugutt17678079
  1 MS-RWWGAAAGR-LRTAVSNPR---SLY-LSSSPPAAAYHTIQAISREFTGSKVSARDRA| Vitivini17818550
  1 MA-RWWRAAAAGGLKTAALSSP---PPP--VRPPPSSSYHTIQAIPRECSGSRVASRDRA| Eucagran23595478
  1 MS-RWWNAVVVG-GGEIKQ-----------AISFRLSSYHTLQAIPREYTGSRLAAKDRA| Aquicoer22046950
  1 MA-QCLRGKGGA-AAVEEALRKA--VPW--RRAASASYHHTIQAVPRETTGPRAAARERR| Bracdist21823203
  1 MA-QCLRGKAAA-AAAAGVS-----APW--RRAASASYHHTIQAVPRETSGPRAAARERR| Setaital19684886
  1 MA-LCLRRAAAA-AVGEALRRGASTAPW--RRAASASYHHTIQALPRETAGPRAAARERR| Oryzsati24122503
  1 MA-QFLRGKATA-AAAATAAREA--APW--RRTASASYHHTIQAVPRETAGPRAAARERR| Sorgbico1951096
  1 MA-QFLRGKAAA-AAGAAVLRASSPAPW--RRTASASYHHTIQAVPRETAGPRAAARERR| Zea_mays20883014
  1 MA-NRWRSAGGN-LRAVLQNPS---SRQQAPFQSFSALYHTIQAIPRECTGNRVSVKDRA| Prunpers17667904
  1 MA-KWWRGLRSV-AEEADLSAS---SFV--RSVRCLHQDETIQAIPREATGRRVSARDQT| Brasrapa22715722
  1 MA-KWWRGLTTK-VPHCATSLT---PSP--PLFSRACAYHTIQAIPRELRGSGVSAKDRV| Caripapa16423587
  1 MA-RWWRSAGGG-LRSLLSSPN---P----SLQSQSSLYHTIQAIPREFTGNRISAKDRA| Fragvesc27258433
  1 MS-KWWRAVATT-AGGLRS-----------MEVTSRRSYFTIQAIPREVSGRRVSSRDRA| Solatube24427917
  1 MA-KWLRGLRSVTAEVADLPAS---SFG--RSIRCIHQYQTIQAVPREAAGRGVSARDRT| Capsrube20913439
  1 MA-QCLRGRAAA-AAAGMPA-----APW--RRAASASYHHTIQAVPRETSGPRAAARERR| Panivirg23820228
  1 MA-KWWRGLTTK-VPHCATSLT---PSP--PLFSRACAYHTIQAIPRELRGSGVSAKDRV| Caripapa16423588
  1 MS-SLLVSLQQS-QVVGVC-----------T▼QLHHPTFFPSMHWFPTKPEGTTTFPTP▼S| Glycmax_26312779
    M    o                                .@j o. j   G
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 44 QGRIPAVVFSQGLLEKNP-------SNRSPSRKQILTTERKQIRSIIKS-VQLPFFCSTR| Gossraim26816562
 44 QGRIPAVVFSQGLLEKSP-------ANRSPSRKQLLTTERKQIQTILKS-VQLPFFCSTT| Theocaca27431311
 55 QGRIPAVVFSQPLFDKNP-------SSPSISRKQLLTTERKQIHSILKS-VELPFFCSTT| Maniescu17986519
 48 QGRIPAVVFSQSLLDKNP-------NSRSISRKQLLTTERKQIQSILTS-VELPFFCSTT| Ricicomm16805378
 56 QGRIPAVVFSQQILEKNS-------VHGSPSRKHLLTTERKQIHSILKS-VELPFFCSTR| Cucusati16971696
 52 QGRIPAVVFSQSLLDINP-------SNRYTSRKRLLTTEKKQIQAILKS-VEIPFFCSTT| Poputric27016917
 54 QGRIPAVVFPQSLLDKNP-------SNGLTSRKRLLTTEKKQIQAILKS-VQLPFFCSTT| Poputric27031061
 48 QGRIPAVVFSQNYVQSKPDDPTSIVAASSVSRKFLLTTERKQIKTIIDS-VDLPFFCSTT| Solalyco27286613
 53 QGRIPAVVFSQSILDKSP-------NSRSSSRKRLLTTEKKQILSILKS-LDSPYFCSTT| Linuusit23139253
 53 QGRIPAVVFSQSILDKSP-------NSRSASRKRLLTTEKKQIQSILKS-LDSPYFCSTT| Linuusit23148893
 53 QGRIPCVVFLQNLLEKNP-------DARSESKKHLLTVEKKQIKAILDS-ADAPFFCSTR| Glycmax_26320749
 52 QGRIPAVLFFQSLLEKNP-------DGRSESKKHLLTVEKKQIKAILDS-VDAPSFCSTR| Phasvulg27143407
 52 QGRIPAVVFFQDLLEKSP-------EARSTSRKQLLTVEKRQIKAVLNS-IEAPFFCSTR| Meditrun23036473
 51 IGRIPAVVFPQSLLETDA-------SKRGVSRKQLLTADNKQIKSIIDS-VGLPFFCSTT| Arablyra16046352
 55 IGRIPAVVFPQSLLDTDA-------SKRGVSRKQLLTADKKQIKSIIDS-VGLPFFCSTT| Arabthal19671699
 55 IGRIPAVVFTQSLLETDA-------SKRGVSRKQLLTADKKQIKSIVDS-VGLPFFCSTT| Brasrapa22700651
 54 IGRIPAVVFPQSLLGTDA-------SKRGVSRKQLLTADRKQIKSILDS-VGLPFFCSTT| Thelhalo20199993
 48 QGRIPAVVFAQDLLDKNT-------DRRSPSRKQILSTERKQIHSILKS-VELPFFCSTT| Camesine18124744
 48 QGRIPAVVFAQDLLDQNT-------DRRSPSRKQILSTERKQIHSILKS-VELPFFCSTT| Citrclem20802148
 46 QGRIPTVVFSQSYVQSDSKDPNSVAASALVSRKVLLTTERKQIKAILKH-IELPFFCSTT| Mimugutt17678079
 55 QGRIPAVVFAQQLLTGGN------INGRSVSRKRLLTTERKQIQAILKS-VEPEFICSTT| Vitivini17818550
 55 QGRIPTVVFAQGLLEKDP-------GARSPSRKYLLTTERKQIKSILSS-VRLPFFCSTT| Eucagran23595478
 48 QGRIPAVVFTQNQTEHGK-------------ETRLLTIEKKQINSILKSSVQLPYFCSTT| Aquicoer22046950
 55 NGHVPAVLLT---LAGAG-------PGEGVAHRKLLTTDRKQLSEMLK---QSPYFLSTP| Bracdist21823203
 52 HGRVPAVLLT---LAGAS-------PGNGVAHRKLLTAERKQLVEMVK---QSPYFLSTP| Setaital19684886
 57 SGRVPAVLLA---LAGAG-------PGEGVAHRKLLTADRKQLGEILK---QSPYFLSTP| Oryzsati24122503
 55 HGRVPAVLLT---LAGAA-------PGNGIAHRQLLTADRRQLAEMLK---QSPYFLSTP| Sorgbico1951096
 57 HGRVPAVLLT---LAGAA-------PGNGIAHRHLLTADRRQLAEMLK---QSPYFLSTP| Zea_mays20883014
 56 QGRIPAVVFSQELNPSTT-------TVRSVSKKHLLTAERKQIQAILKS-VELPFFCSTR| Prunpers17667904
 54 TGRIPAVVFPQSLLETR▼--------SRLSRLSTRWVS--RSSVRALSK-----------| Brasrapa22715722
 54 QGRIPAVVFSQSLLDKDP-------ANRFASRKQLLTTEKDQIQSIIKS-VQLPFFCSTT| Caripapa16423587
 52 QGRIPAVVFAQPPPENSPK-----PTGRSIARKHLLTTERKQIQAILNS-VELPYFCSTT| Fragvesc27258433
 48 QGRIPAVVFSQNYVQSKPEDPTSIVASSSVSRKFLLTTERKQIKTIIDS-VDLPFFCSTT| Solatube24427917
 55 IGRIPAVVFPQSLIETDA-------SKRGASRKQLLTADKKQIKSIIDS-VGLPFFCSTT| Capsrube20913439
 52 HGRVPAVLLA---LAGAA-------PGNGDCAPELLTADRRQVAEMLK---QSPYFLSTP| Panivirg23820228
 54 QGRIPAVVFSQSLLDKDP-------ANRFASRKQLLTTEKDQIQSIIKS-VQLPFFCSTT| Caripapa16423588
 48 SGNFRMTFFRKYFVDTSG-------SHKFFFRKK▼-PRPEPKTPN--LNS-ADAPFFCSTR| Glycmax_26312779
     Gjo    oo j                          o    _         @          oo..
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 96 FQLQIRAGSGSSVLLESGTVLPIK▼HRDEESGKILNLVFVWADEGTELKVDVPVVFKGLE| Gossraim26816562
 96 FPLQIRAGSGSSVLLDSGRVLPIK▼HRDEESGKILNLVFVWADEGTKLKVDVPVVFKGEE| Theocaca27431311
107 FQLQIRAGAGSSVLLDSRRVLPIK▼HRDEETGKILNLVFVWADEGTELKVDVPIVFKGEE| Maniescu17986519
100 FNLQIRAGSGSSVLIESGTILPIK▼HRDEETGKILNLVFVWADDGTELKVDVPLIFKGEE| Ricicomm16805378
108 FKLQIRAGSGSSVLLESGSILPIK▼HRNEETGKIFNIVFVWADEGSELKVDVPIVFKGEE| Cucusati16971696
104 FPLQIRAGTGSSVLLESGTVLPIK▼HRDEKTGKILNLVFAWADEGTEMKVDVPVVFKGEE| Poputric27016917
106 FPLQVRAGSGSSMLLESGTVMPIK▼HRSEKTGKILNLVFVWADEGTELKVDVPVVFKGEE| Poputric27031061
107 FPLQIRAGSGSSTLLESGKVLPIK▼HKDEETGKILNLVFVWAEDGTKLRVDVPVVFKGEH| Solalyco27286613
105 FPLQIRAGSGSSVLLESGNVLPVK▼HRDKETGKIMNLVFVWADPGTELKVDVPVVFKGEE| Linuusit23139253
105 FPLQIRAGSGSSVLLESGNVLPVK▼HRDKETGKIMNLVFVWADPGTEVKVDVPVVFKGEE| Linuusit23148893
105 FPLQIRAGSGSSHLLESGTVLPIK▼HRDEESGKILNLVFVWAEDGMKLKVDVPVVFEGED| Glycmax_26320749
104 FPLQIRAGSGSSHLVESGTVLPIK▼HRDKESGQILNLVFVWAEDGMKLKVDVPVIFKGED| Phasvulg27143407
104 FPLQIRAGSGSTHLLESGTVLPIK▼HRDEESGNILNLVFVWAEDGMNLKVDVPVVIKGED| Meditrun23036473
103 FQLQIRAGQGSSTLVESGRVLPLK▼HRDEENGKILNLVFVWADDGEKLKVDVPVVFNGLD| Arablyra16046352
107 FQLQIRAGQGSSTLVESGRVLPLK▼HRDEETGKILNLVFVWADDGEKLKVDVPVVFKGLD| Arabthal19671699
107 FKLQVRAGQGSSSLVESGRVLPLK▼HRDEESGKILNLVFVWANDGEQLKVDVPIVFKGLD| Brasrapa22700651
106 FKLQIRAGQGSSTLIESGRVLPLK▼HRDEETGKILNLVFVWADDGEQLKVDVPVVFKGLE| Thelhalo20199993
100 FPLQIRAGSGSSVLLDSGKVLPIK▼HRDEETGRILNLVFVWADDGTELKVDVPVVFKGVE| Camesine18124744
100 FPLQIRAGSGSSVLLDSGKVLPIK▼HRDEETGRILNLVFVWADDGTELKVDVPVVFKGVE| Citrclem20802148
105 FPLQIRAGSGSSTILENGKVLPIK▼HRDED-GKVLNLVLVWAEDGTQIKVDVPIVYKGED| Mimugutt17678079
108 FPLQIRAGSGSSVLLESGTVLPLK▼HRDEATGKVLNLVLFAWADEGSELKVDVPLVFKGED| Vitivini17818550
107 FGLQIRAGSGSSTLLESGKVLPVK▼HRDEETGKILNLVLVWADEGSKLKVDVPVAFKGEE| Eucagran23595478
 95 FKLQIRAGSGSSNLLHSGTVLPIK▼HRDSE-GNILNLVLVWANEGTEVRVDIPVEFKGEE| Aquicoer22046950
102 VRLQVRAGERSTAVVHSGTVLPIK▼HTDESTGNILNLVMVQADEGTMIKVNLPVVFKGED| Bracdist21823203
 99 VRLQVRAGERSNAVVHSGTVLPIK▼HRDESTGHILNLVMVQADEGTMLKVNLPVEFKGES| Setaital19684886
104 VRLQVRAGERSTAVVHSGTVLPIK▼HRDETTGNILNLVLVEADEGTMLKVNLPVEFKGED| Oryzsati24122503
102 VRLQVRAGERSNAIVHAGTVLPIK▼HRDETSGNILNLVMVKADEGTMLKVDLPVEFKGED| Sorgbico1951096
104 VRLQVRAGERSNAILHAGTVLPIK▼HRDENSGNILNLVMVKADEGTMLKVDLPVEFKGKD| Zea_mays20883014
108 FPLQIRAGSGSSDLLESGNVLPIK▼HRDEESGKILNLVFVWADEGSQLKVDVPVVFKGED| Prunpers17667904
 93 --LQIRAGQGSSSLVESGQILPLK▼HRDEESGKILK--FSIRNDGEQLKVDVPLVFKWLD| Brasrapa22715722
106 FPLQIRAGSGSSVLLESGRVLPIK▼HRNEETGKILNLVFVWADEGTELKVDVPVIFKGID| Caripapa16423587
106 FPLQIRAGSGSSVLLESGKVLPVK▼HRDEESGKILNLVFVWADEGSELKVDVPVTFKGED| Fragvesc27258433
107 FPLQIRAGSGSSTLLESGKVLPIK▼HKDEETGKILNLVFVWAEDGTKLRVDVPVVFKGEH| Solatube24427917
107 FQLQIRAGQGSSTLVESGRVLPLK▼HRDEETGKILNLVFVWADDGEKLKVDVPVVFKGLD| Capsrube20913439
 99 VRLQVRAGERSNAVVHSGTVLPIK▼HRDETTGNILNLVMVQADEGTMLKVNLPVEFKGET| Panivirg23820228
106 FPLQIRAGSGSSVLLESGRVLPIK▼HRNEETGKILNLVFVWADEGTELKVDVPVIFKGID| Caripapa16423588
 97 FPLQIRAGSGSSHLPESGTVLPIK▼HRDEESGKILNLVFVWAEDGMKLKVDVPVVFKGED| Glycmax_26312779
    o LQ@RAG  S  @ j    @@P@K@H      Gj@oj@@o    _ G  @+V_@P@ oj
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```
156 DCPGLKK▼GYFKMIRSSLKFQCPAEHIPQKIEVDVSKSDIDDRVLMHDIEVHPSMKLLSK| Gossraim26816562
156 DCPGLKK▼GSLNRIRTSLKYLCPAEHIPPKIEVDVSKLDIGDRVLMHDVEVHPSLKLLSK| Theocaca27431311
167 DCPGLKK▼GHFKRVRNSLKFLCPADQIPANIEVDVSNIDIGGRVLMRDIEFHPSLKLLSK| Maniescu17986519
160 DCPGLKK▼GKLNRIRKSLKVLCPAEHIPPKLEVDVSSLDIGDKVSMGDVEVHPSLKLLSK| Ricicomm16805378
168 ACPGLQK▼GQLNKIRTSLKYLCPAEHIPSKIEVDVSNLDIGDRIFIRDVDVHSSMKLLSK| Cucusati16971696
164 NCPGLKK▼GHLKMMRSTLKYLCPAEHIPQKIEVDISNLDIEDGLFMRDIEVHSSLKLLSK| Poputric27016917
166 NCPGLKK▼GHLKMIRSTLKYICPAEQIPQKIEVDVSNLDIEDRVYMRDIEVHPSLKLLSK| Poputric27031061
167 ECPGLKK▼GYLNKIRPSLKLLCPAENIPQKIEVDISQLDVEDKVSLHDIDVHPTWKLLSK| Solalyco27286613
165 NCPGLLK▼GRLNRLRDTLKLLCRAENIPQKIEVDLSNLDTGERVSVRDVNIDPTLKLLTK| Linuusit23139253
165 NCPGLLK▼GRLNRLRDTLKLLCPVENIPQKIEVDLSKLDIGERVTVHDFNIDPSLKLLTK| Linuusit23148893
165 ACPGVQK▼GILNKIRPSLKFLCPSEHIPSKIVVDVSNLDIEDRIFMRDIEVHPSLKLLSK| Glycmax_26320749
164 VCPGIQK▼GILNKIRPSLKYLGPSEHIPSNVVVDVSNLDIEDRIFMRDIEVHPSLKLISK| Phasvulg27143407
164 VCPGLKK▼GFLNKIRTSLRYLGPSEHIPSKIEVDISNLDIEDRIFMRDIEVHPSLKLLNK| Meditrun23036473
163 NCPGLKK▼GNLRSIRSTLKLLGPAEHIPSKIEVDVSELDIEDKVLLQDVVFHPSLKLLSK| Arablyra16046352
167 HCPGLQK▼GNLRTIRSTLKLLGPAEHIPSKIEVDVSNLDIEDKVLLQDVVFHPSLKLLSK| Arabthal19671699
167 DCPGLKK▼GNLRSMRSTLKLLGPAEHIPSKIEVDVSKLDIADKVLMQEVEFHPSLKLLSR| Brasrapa22700651
166 NCPGLKK▼GNLLSIRSSVKLVGPAENIPSKIEVDVSKLDIEDKVLMQEVEFHPSLKRLSM| Thelhalo20199993
160 SCPGLKK▼GYLKSIRTSLKYLCPAEHISPKIEVDVSNLDIGDRVFMSDIEVHPSWKLLSK| Camesine18124744
160 SCPGLKK▼GYLKSIRTSLKYLCPAEHISPKIEVDVSNLDIGDRVFMSDIEVHPSWKLLSK| Citrclem20802148
164 VCPGLKK▼GTLSKIRASLKYLCPAEHIPPKIEVDVSNLDIGDKVSMDDVAVHPSLKLLSK| Mimugutt17678079
168 VCPGLKK▼GYLNRIRPSLKFLCPAEHIPSKIEVDVSNLDIGDRILMHDVEVHPSLKLLSK| Vitivini17818550
167 VCPGLKK▼GYLNAIRTSLKFTCPAEHIPSKIEVDVSNLDIGDRIFMRDVEFHPSMELLSK| Eucagran23595478
154 VAPGVKK▼GYLHKVRPSLRYECPAELIPPKIEVDVSKLDIGDRVYEKDLEVHPSMKLVSV| Aquicoer22046950
162 VCPGLKK▼GFLQKIRTSLVYLCPAEHIPPKIEVDLTNLDIGDRVLMNDIPVHPSLKLLSR| Bracdist21823203
159 ACPGLKK▼GFLQKIRTSLVYLCPAEHIPPKIEVDLANLDVGDRVLMHNIPVHPSLKLLSK| Setaital19684886
164 VCPGLKK▼GFLQKIRTSLVYLCPAEQIPPKIEVDLANLDIGDRVSMNDIPVHPSLRLLSK| Oryzsati24122503
162 TCPGLKK▼GFLQKIRTSLVYLCPAEHIPPKIEVDLTNLDVGDRVLMHDIPVHPSLKLLSK| Sorgbico1951096
164 ACPGLKK▼GFLQKIRTSLVYLCPAEHIPPKIEVDLTNLDVGDRVLMHDIPVHPSLKLLSK| Zea_mays20883014
168 VCPGLKK▼GHLNKIRTSLKYLCPAEHIPPKIEVDVSKLDIGDRVFIPDVEVHPSMKLLSK| Prunpers17667904
149 NCPGIKK▼GSLRSMRSSLKLIGPVEHMPSKIEVEVSKLDIGDRVLMQEVVFHPSLKLLSK| Brasrapa22715722
166 KSPGLSK▼GYLNKIRTTLKYLCPAEHIPPKIEVDVSNLDIGDRVFMSDIEVHPSLRLLSK| Caripapa16423587
166 VCPGLKK▼GHLNKIRTSLKYLCPAEHIPPKIEVDISNLDIGDRVCLPDVKVHPSLKLLSK| Fragvesc27258433
167 ECPGLKK▼GYLNKIRPSLKFLCPAENIPQKIEVDISQLDVEDKVSLHDIDVHPTWKLLSK| Solatube24427917
167 HCPGLKK▼GNLRSIRSTLKLLGPAEHIPSKIEIDVSKLDIEDKVLLEDVVFHPSLKLLSK| Capsrube20913439
159 ACPGLKK▼GFLQKIRTSLVYLCPAEHIPPKIEVDLTNLDVGDRVLMHDIPVHPSLKLLSK| Panivirg23820228
166 KSPGLSK▼-----------Y----------------------------------------| Caripapa16423588
157 ACPGVQK▼GILNKIRPSLRFLCPSEHIPSNIAVDVSNLDIEDRIFMRDIEVHPSLKLLSK| Glycmax_26312779
      PG@ KG. o  @+ .@ o     _ @. j@ @_@.  _     @    _o oj..oj @
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216 NESMPICKIAPTYI-ENPEP----------------IKV                     | Gossraim26816562
216 NESMPMCKIVATNF-ENPEP----------------MKV                     | Theocaca27431311
227 NEELPICKIVAIKS-ENPEP----------------VQV                     | Maniescu17986519
220 NENIPICKIVSTDL-ESPEPETEPETEPEPE----PAQA                     | Ricicomm16805378
228 NEVMPICKIVTIKS-ETANTETSATSETS-------ETS                     | Cucusati16971696
224 NENMPVCKIVATNL-DTPEPAALNLESPEPAEKQPVECL                     | Poputric27016917
226 NENLPICKCVATNL-DSPEPVATNLERPEP------AEV                     | Poputric27031061
227 NETIPVCKVKATPV-DS----------------------                     | Solalyco27286613
225 DESLPVCKVVSTNS-KASDP----------------VSV                     | Linuusit23139253
225 DESLPVCKVVSTNS-KASEP----------------VSA                     | Linuusit23148893
225 NESMPICKIVPTSL-GNKEP----------------IEA                     | Glycmax_26320749
224 NENMPICKVVPTCL-GNREP----------------IVE                     | Phasvulg27143407
224 NENMPICKIVPTSL-GKQEVVPTSLENQEP------VGA                     | Meditrun23036473
223 NETMPVCKIVATSPVKEPEA----------------VQA                     | Arablyra16046352
227 NETMPVCKIVATSPVKEPEA----------------VQA                     | Arabthal19671699
227 NETLPVCKIVATSPVKEPEA----------------VQA                     | Brasrapa22700651
226 NET--VCKIVATSPVKEPED----------------VQA                     | Thelhalo20199993
220 NEKMPLCKISATKL-ENPEP----------------AVM                     | Camesine18124744
220 NEKMPLCKISATKL-ENPEP----------------AVM                     | Citrclem20802148
224 NETMPVCKIMS-NI-DYSEKYTSR------------ETE                     | Mimugutt17678079
228 NETMPVCKIVAAKL-ERAES----------------GEV                     | Vitivini17818550
227 NDAIPICKVMSTKS-ESAEP----------------AVV                     | Eucagran23595478
214 NERKPVCKVRGTKP-EVWEPKSKTKKLNESE----TVAA                     | Aquicoer22046950
222 NETMPVCKLLASKP-VE----------------------                     | Bracdist21823203
219 NETMPVCKILASKP-VESETMQD-------------LKS                     | Setaital19684886
224 NETMPVCKILASKP-VE----------------------                     | Oryzsati24122503
222 NETMPICKILASKP-IEP-------------------VE                     | Sorgbico1951096
224 NETMPVCKILASKP-DE----------------------                     | Zea_mays20883014
228 NETMPICKIVATKL-ENPES----------------AGV                     | Prunpers17667904
209 NETLPVCKIAATSPVKEPEAV---------------LSI                     | Brasrapa22715722
226 NNSIPICKVAATNL-EASKPEKHDGAEDG-------ISE                     | Caripapa16423587
226 NDVIPICKIVATKL-ETPEP----------------AGV                     | Fragvesc27258433
227 NEAIPVCKVKATPV-DS----------------------                     | Solatube24427917
227 NETMPVCKIVATSPVKEPEA----------------VQA                     | Capsrube20913439
219 NETMPVCKILASKP-VESETMQD-------------LKS                     | Panivirg23820228
175 ---------------------------------------                     | Caripapa16423588
217 NENMPVCKIVPTSL-GNKEP----------------IEA                     | Glycmax_26312779
     __  .@.+o .       j
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Fig. S1E: An example of GSA-MPSA

▼phase0 ▼phase1 ▼phase2

(before)

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                >P450_M50_Org.8 [33:722]  ( 1 - 722 )

  1 MET--------I-VFIILYVILFLS------------TLLSYPF--LRK--QKRG--FP| Gossraim26789996
  1 ME---------T-VSILLYVILFLS------------TLLSYPF--LRK--QKRGL-IP| Theocaca27461426
  1 ME---------I-LSIFCYILLFLS------------TLLSYPFLFLKK--QKKK--VS| Vitivini17837849
  1 ME---------I-VSILLYIILFLS------------TLLS--L--LKK--QKKG--IH| Gossraim26801904
  1 -----------------------------------------------------------| Camesine18100232
  1 MES--------I-VSNLACLLFLLS------------SLISYIL--LTK--LKRE---A| Citrclem20812543
  1 M---------------VRGCICME-------------NNISIG▼--K--RREE---H| Caripapa16424056
  1 ME---------V-ASIL--ICLFLS------------SLLSYPL--LKK--MRRPWRIP| Poputric26988127
  1 ME---------I-ASILAYVCFFLS------------SLLSYPL--LKK--KNRI---P| Poputric26989962
  1 MS---------I-ASIMIYICLSLS------------SLLSYLF--IKK--KTRA---S| Maniescu17967099
  1 ME---------I-AFVLVYICLSLS------------SLLSYPF--IKK--KTGV---S| Maniescu17990273
  1 ME---------I-AFILIYMCLFVS------------CLLSYPLLIKK--KKWE---S| Ricicomm16809033
  1 -----------------------------------------------------------| Fragvesc27273641
  1 ME---------I-VSSLIHILLCLS------------SLLLYHF--IKK--QKRN---S| Prunpers17650776
  1 ME---------R-GGLLLYILLVLS------------TFFSYIF--LNK--NKIK---P| Aquicoer22041719
  1 MA-----------GILVYATILLMTL------------TLVWCRL--LRR--QKKG--S| Gossraim26769098
  1 MF-----------FQFLYISQSLLPPPMTPITKPTSWILQRVR▼--LRR--EKKE--S| Theocaca27459467
  1 -----------------------------------------------------------| Vitivini17821893
  1 -----------------------------------------------------------| JatrcurcJcr4S00146.120
  1 MG-----------GILVYILFFLF------------SLLWYIT--KRR--NKKE---L| Ricicomm16821717
  1 MA-----------GVFVSVLIFLL------------SLLSYIA--KRR--CKKE---L| Maniescu17977346
  1 MY-----------AILVYVFIFFL------------GGISYVA--MRR--GKKE---V| Maniescu17981266
  1 MG-----------GILAYVLIFLI------------SVVSYII--KIR--KKKK---P| Poputric27021904
  1 MG-----------GILAYVLIFLV------------SVVAYII--KKR--NNKE---P| Poputric27032146
  1 ME-----------GILLCVFIFLLA-----------ALPLCML--FTR--DKTE---P| Camesine18092678
  1 ME-----------GILLCFFIFLLA-----------ALPLCML--FAR--DKTE---P| Citrclem20787859
  1 M-------------------------------------------IN--KIRK---P| Linuusit23154342
  1 MGDGFFLNILLL-VVVFIIIIIIII------------LTSCYLL--LIT--KIRK---P| Linuusit23182042
  1 -----------------------------------------------MKK--SKGG---G| Fragvesc27262340
  1 MD-----------AIFTCVFIFLL------------TLLSFLI--FTK--RDKREE--P| Prunpers17651481
  1 MV---------NYFEIFLYISMFVL------------GYLSYYF--CFGK--NNNS---S| Solalyco27279257
  1 MV---------NYFEIFFYSSILFL------------GILSYYF--CFSK--NNNS---S| Solatube24385837
  1 MC-----------GGSICVLAAVF------------ALSLVFI--FLR--DGKK---S| Eucagran23580902
    @                    o                  o

 33 IERY-----------KLPPGSMGWPYIGETLQLYSQDPNIFFLTKQKR▼GEIFKTQILG| Gossraim26789996
 33 MNRF-----------KLPPGSMGWPYVGETLQLYSQDPNVFFSTKQKR▼GEIFKTHILG| Theocaca27461426
 34 KQRV-Y---------KLPPGSMGWPYIGETLQLYSQDPTVFFDSKQER▼GEIFKTHILG| Vitivini17837849
 30 FKKF-----------KLPPGSMGWPYVGETLQLYSQDPNVFFATKQKR▼GEIFKTHILG| Gossraim26801904
  1 ----------------LPPGSMGWPFIGETLQIYSQDPNVFFATKQKR▼GEIFKTHILG| Camesine18100232
 32 EKCA-----------KLPPGSMGWPYVGETLQIYSQDPNVFFATKQKR▼GEIFKTHILG| Citrclem20812543
 32 RGGA-----------KLPPGSMGWPYVGETLQLYSQDPNVFFVTKQNR▼GEIFKTHILG| Caripapa16424056
 32 KQRA-----------KLPPGSMGWPFVGETLQLYTQDPNVFFATKQKR▼GEVFKSHILG| Poputric26988127
 31 KQRA-----------KLPPGSMGWPYVGETLQLYTQDPNVFFATKQKRHGEVFKSHILG| Poputric26989962
 31 KPRA-----------KLPPGPMGWPYVGETLKLYSQDPNVFFATKQLR▼GEIFKTHILG| Maniescu17967099
 31 KPRA-----------KLPPGSMGWPYVGETLQLYSHDPNVFFAAKQIR▼GEIFKTHILG| Maniescu17990273
 33 KPRA-----------RLPPGSMGWPYVGESLKLYSQDPNVFFATRQLR▼GEIFKSHILG| Ricicomm16809033
  1 ---------------------MGWPCIGETLQMYSMDPNIFFSTKQKR▼GDIFKTHILG| Fragvesc27273641
 31 KHKA-----------KLPPGSMGWPYIGETLQMYSMDPNIFFASKQKR▼GEIFKTHILG| Prunpers17650776
 31 RKRA-----------KLPPGSMGWPYIGETLQLYSQDPNIFFTTKQQR▼GEIFKSHILG| Aquicoer22041719
 33 QGKSET---------QLPPGSMGWPYIGETLQLYSRDPNVFFASKQKR▼GEIFKTHILG| Gossraim26769098
 42 QGRAEA---------ELPPGSMGWPYIGETLQLYSQDPNVFFAAKQKR▼GEIFKTHILG| Theocaca27459467
  1 ---------------------MGWPYIGETLQLYSQDPSVFFAAKQKR▼GEIFKTHILG| Vitivini17821893
  1 ---------------------MGWPYIGETLQLYSQDPNVFFADKQKR▼GEIFKTHILG| JatrcurcJcr4S00146.120
 29 SKGV-----------KLPPGSMGWPYIGETLQLYSQDPNVFFADKQKR▼GEIFKTHILG| Ricicomm16821717
 29 CKGV-----------KLPPGSMGWGYIGETLQLYSQDPNVFFANKQKR▼GEIFKTHILG| Maniescu17977346
 29 YNGV-----------KLPPGSMGWPYIGETLQLYSQDPNVFFTEKQKR▼GEIFKTHILG| Maniescu17981266
 29 NKGI-----------KLPPGSMGWPCIGETLQLYSQDPNVFFASKQKR▼GEIFKTHILG| Poputric27021904
 29 YTGI-----------KLPPGSLGWPYIGETLQLYSQDPNVFFASKQKR▼GEIFKTHILG| Poputric27032146
 30 RKKV-----------KLPPGSMGWPLIGETLQLYSQDPNVFFAAKQKR▼GEIFKTHILG| Camesine18092678
 30 RKKA-----------KLPPGSMGWPLIGETLQLYSQDPNVFFTAKQKR▼GEIFKTHILG| Citrclem20787859
  3 QL-------------LPPGSMGWPVVGETLQLYSQDPSIFFSSKQKRYGEIFKTHILG| Linuusit23154342
 40 HL-------------LPPGSMGWPVVGETLQLYSQDPSIFFSSKQKRYGEIFKTHILG| Linuusit23182042
  9 EEDP-HDDHGHKNRAAQLPPGSFGWPYIGETLQLYSQDPNTFFSSRQKRYGKIFKTHILG| Fragvesc27262340
 31 QKRA-----------NLPPGSLGWPYIGETLQLYSQDPNTFFSTKQKR▼GEIFKTHILG| Prunpers17651481
 33 SKKNAY---------KLPPGSMGWPYIGETLQLYSQDPNAFFINRQRR▼GEIFKTKILG| Solalyco27279257
 33 SKKNAY---------KLPPGSMGWPYIGETLQLYSQDPNAFFINRQRR▼GEIFKTKILG| Solatube24385837
 29 QRKS-----------KLPPGSMGWPYIGETLQLYSLDPNVFFATKQKR▼GEIFKTHILG| Eucagran23580902
                 j@....oGW.o@GE.Lj@Y. DP  FF  +Q R Gj@FK.jILG

 81 CPCVMLASPEAARFVLVTHAHLFKPTYPKSKEMMIGPWALFFHQGEYHTRLRKLVQYSLA| Gossraim26789996
 81 CPCVMLASPEAARFVLVTHARLFKPTYPKSKEKMIGPYALFFHQGEYHTRLRKLVQSSLA| Theocaca27461426
 83 CPCVMLSSPEAARFVLVTRAHLFKPTYPKSKEKMIGPSALFFHQGDYHAQLRKLVQSSLS| Vitivini17837849
 78 CPCVMLASPEAARFVLVTHAHLFKPTYPKSKERLIGPHALFFHRGGYHARLRRLVQNSLA| Gossraim26801904
 44 CPCVMLASPEAAKFVLATHAHFFKPTYPKSKEKIIGPSALFFHQADYHARLRKLVQSSLS| Camesine18100232
 80 CPCVMLASPEAAKFVLATHAHFFKPTYPKSKEKIIGPSALFFHQAGYHARLRKLVQSSLS| Citrclem20812543
 79 CPCIMLASPEAAKFVLVTHAHLFKPTYPKSKEKMIGPSALFFHQGDYHTRLRKLVQSSLS| Caripapa16424056
 80 CPCVMLANPEGARFVLVTHAQLFKPTYPKSKEKMIGPSALFFHQGNYHNLIRKLVQSSLS| Poputric26988127
 79 CPCVMLASPEGARFVLVTHAHLFKPTYPKSKEKMIGPSALFFHQGDYHSLLRKLVQSSLS| Poputric26989962
 79 CPCVMLASPEAARFMLVTHAHLFKPTYPKSKERLIGPSALFFHQGEYHTQLRKLVKGSLS| Maniescu17967099
 79 CPCVMLASPEAARFVLVTHDHLFKPTYPKSKERLIGPSALFFHQGEYHYHLRKLVQSSLS| Maniescu17990273
 81 CPCVMLASPEAARFVLVTHAHLFKPTYPKSKEKLIGPSALFFHQGEYHNHLRKLVQSSLS| Ricicomm16809033
 39 CPCVMLASPEATKFVLVTHAHLFKPTYPKSKEKMIGPSALFFHQGDYHSSLRKLIQSSLS| Fragvesc27273641
 79 CPCVMLASPAATKFVLVTHAYLFKPTYPKSKEQMIGPSALFFHQGDYHNSLRKLIQSSLS| Prunpers17650776
 79 CPCVMLASPEAAKFVLVTQAHLFKPTYPKSKEQIIGPSALFFHEGDYHTKLRKLVQGSLS| Aquicoer22041719
 79 CPSVMLASPEAARFVLVTQAHLFKPTYPHSKERLVGPAALFFHQGDYHTRLRKLVQASLS| Gossraim26769098
 92 CPSVMLASPEAARFVLVTQAHLFKPTYPKSKERLIGPAALFFHQGDYHTRLRKLVQASLS| Theocaca27459467
 39 CPCVMLASPEAARFVLVTQAHLFKPTYPKSKERLIGPSALFFHQGDYHNRLRKLVQGSLS| Vitivini17821893
 39 CPCVMLASSEAARFVLVTEANLFKPTYPKSKEHLIGPSALFFHQGDYHMRLRKLVQGSLS| JatrcurcJcr4S00146.120
 77 CPCVMLASPEAARFVLVTQAHLFRPTYPKSKEKLIGPSALFFHQGDYHLRLRKLVQGSLS| Ricicomm16821717
 77 CPCVMLASPEAARFVLVNQAHLFKPTYPESKEHLIGPSALFFHQGDYHMRIRKLVKDSLS| Maniescu17977346
 77 CPCVMLASPEASRFVLVTQAHLFKPTYPKSKEHLIGPSAIFFHQGEYHMRLRKLVQGSLS| Maniescu17981266
 77 CPCIILASPEAARFVLVTQAHLFKPTYPKSKEHLIGPSAIFFHQGDYHIRLRKLVQGSLS| Poputric27021904
 77 CPSVMLASPEAARFVLVTQAHLFKPTYPKSKEHLIGPSAIFFHQGDYHVRLRKLVQGSLS| Poputric27032146
 78 CPCVMLASSEAAKFVLVTQAHLFKPTYPKSKEHLIGPSAIFFHQGDYHLRLRKIVQGSLS| Camesine18092678
 78 CPCVMLASSEAAKFVLVTQAHLFKPTYPKSKEHLIGPSAIFFHQGDYHLRLRKIVQGSLS| Citrclem20787859
 54 CPCIMLASPEAAKFVLVTQAHLFKPTYPKSKEQLIGPKALFFHMGGYHLRLRKLVQSALS| Linuusit23154342
 85 CPCIMLASPEAAKFVLVTQAHLFKPTYPKSKERLIGPKALFFHMGDYHLRLRKLVQSALS| Linuusit23182042
 68 SPCVMLASPEAAKFVLVTQAHLFKPTYPKSKEALIGPSALFFHGDYHFRLRKLVQRSLS| Fragvesc27262340
 79 CPCVMLASPEAAKFVLVTEAHLFKPTYPKSKENLIGPSALFFHQGDYHIRLRKLVQGSLS| Prunpers17651481
 83 CPCVMLASPEAAKFVLVNQANLFKPTYPKSKENLIGQSAIFFHQGDYHNHLRKLVQAPLN| Solalyco27279257
 83 CPCVMLASPEAAKFVLVNQANLFKPTYPKSKENLIGQSAIFFHQGDYHNHLRKLVQASLN| Solatube24385837
 77 CPCVMLAGPEAAKFVLVSQAHLFKPTYPKSKEKLIGPSAIFFHQGKYHTQLRKLVQASLS| Eucagran23580902
   P @@L. . ..+F@L  j  oF+PTYPjSKE @@G  A@FFH . YH  @R+@@j .L

141 PD--TIRKLIPDIEHIALS-ALDSWAASGQVINTFYEMKK▼SFDVGILSIFGHLDGGYKE| Gossraim26789996
141 PD--TIRKLIPGIEDIAVS-ALESWAGSGQVINTFYEMKK▼SFNVGILSIFGHLDRGYRE| Theocaca27461426
143 PD--SIRKLVPSIEALAIS-ALESWAG-GQVINTFHAMKK▼SFDVGILSVFGHLEGNYRD| Vitivini17837849
138 PQ--TIKKLIPDIQGIAVS-TLESWAASGQGVNTFYEMKK▼SFDVGILSIFGHMERGFRE| Gossraim26801904
104 PE--RIKKLIPDIEAIAIS-ALESCAV-GQVINTFKEMKK▼SFDVGILSIFGNLDDSYRE| Camesine18100232
140 PE--RIKKLIPDIEAIAIS-ALESCAV-GQVINTFKEMKK▼SFDVGILSIFGNLDDSYRE| Citrclem20812543
131 PE--RIKKLIPDIEAIAIS-ALDSLAG-GLVISTFHEMKK▼SFDVGILSIFGHLDDSYRE| Caripapa16424056
140 PD--TIRKLIPSIESVAIS-ALESWSS-GHIINTFHEMKK▼SFDVGILSIFGHLNSNFRQ| Poputric26988127
139 PD--KIRKLIPSMESVAIS-ALESWSS-GHIINTYHEMKK▼SFDVGILSIFGHLDSNHRE| Poputric26989962
139 PE--TVRKLIPDIESIAMS-ALESWAH-GHTINTFHEMKK▼SFQVGILSIFGVLDSNYRE| Maniescu17967099
139 PD--TIRKLIPDIESMTIS-ALESLAD-SRIINTFQEMKK▼SFQVGILSVFGLLDSNYRE| Maniescu17990273
141 PD--TVKKLIPDIQSTAIS-ALESWAD-GHIINTFNEMKK▼SFDVGILSIFGHLDSNYRE| Ricicomm16809033
 99 PNPNTMQKLVPDIEALAIS-ALESWAAAGTVINTYHEMKK▼VFDVGFLAIFGHLDDTYRE| Fragvesc27273641
139 PNPTTMQKLVPDIEALAIS-ALESWAAGGKVINTYNEMKR▼SFDVGFLAIFGQLDDTYRE| Prunpers17650776
139 LE--VLRNLVPDIETIAIS-ALESWAG-GHIINTFHEMKE▼SFDVGILAIFGHLDHTYKE| Aquicoer22041719
139 IE--AIRNLVPDIDALAAS-TVDSWHG-GHVVNTFHEIKK▼SFEVGILMIFGHLEARYRE| Gossraim26769098
152 IE--TIRNLVANIDALAAS-ALDTWDG-GHVINTFHEMKK▼SFEVGILFIFGRLEARHRE| Theocaca27459467
 99 PE--AIRNLVADIEALAVS-ALDSWAG-GHVFNTFHEIKK▼SFEVGILAIFGHLEAHYRE| Vitivini17821893
 99 LD--ALRNLVADISAIANY-TLNSWDA-GHVIDTFQELKK▼SFEVGILVIFGQLESHYRE| JatrcurcJcr4S00146.120
137 LF--ALRNLVADISSIAAS-TLDSWDG-GHVVNTFQELKK▼SFEVGILAIFGNLESHYRE| Ricicomm16821717
137 LD--ALRNLVVDISDIAAS-TLDSWSE-GHVINTFQEMKK▼SFEVGILAIFGNLESHYRE| Maniescu17977346
137 LD--SLRNLVADISAIAAS-TLDSWNG-GHVINTFHEMKK▼SFEVGILAFFGHLDSHYRE| Maniescu17981266
137 LD--SIRNLVADISSTAAS-TLDSWDG-GHVINTFQEMKK▼SFEVGILAIFGNLEAQYRE| Poputric27021904
137 LD--AIRNLVADISATAAS-TLDSWDG-GHVLNTFQEMKK▼SFEVGILAIFGNLEAHYRE| Poputric27032146
138 LE--AIRELVTDIEAAAVA-ALDSWHG-GHIINTFQEMKK▼SFEVGTLTIFGHLKDNYKG| Camesine18092678
138 LE--AIRELVTDIEAAAVA-ALDSWHG-GHIINTFQEMKK▼SFEVGTLTIFGHLDKNYKG| Citrclem20787859
114 LH--RLRNLVADVSSLTLS-ALDSWHG-GQVVTTYEQLKM▼SFEVGILAIFGHLEEHYRT| Linuusit23154342
145 LH--RLRSLVGDVSSLTLS-ALDSWHG-GQIVTTYEQLKM▼SFEVGILAIFGHLEEHGYRT| Linuusit23182042
128 PD--AIRNLVPHIDATAASVTSEWWGT-GKVINTFHEMKK▼SFEVGVLVIFGQLETRYKE| Fragvesc27262340
137 LD--IIRNLVPHIEAIAVS-GSDSWGA-GQVINTFHEMKK▼SFQVGILATFGHLAEHYKQ| Prunpers17651481
143 PE--SIRNQIPYIEELSIS-ALNSWVG-GHVVNTYHEMKK▼SFEVGILAIFGHLDGHVKE| Solalyco27279257
143 PE--SIRNQIPYIEELSIS-ALNSWVG-GHVVNTYHEMKK▼SFEVGILAIFGHLDGHVKE| Solatube24385837
137 PE--VIRNMVADVEAVMIS-TLDSWVG-GHVVNTFHEMKK▼SFEVGILAIFGHLENHYRE| Eucagran23580902
       @j  @  @       . _ o   .  o T$  @K o F_VG L  FG @j   +

198 KLEENYRIVDKGYNSFPTKIPGSAHHKA-----------------------LQ▼RKRL| Gossraim26789996
198 KLKENYRIVDKGYNSFPTNIPGTAYHKA-----------------------LL▼RKRL| Theocaca27461426
199 ELTKNYCIVDKGYNSFPTNIPGTAYSKA-----------------------IL▼RKRL| Vitivini17837849
195 MLEENYRKVDKGYNSFPTNIPGTAYQQA-----------------------LL▼RKRL| Gossraim26801904
160 KLKQNYLIVDKGYNSFPSNIPGTAYHKA-----------------------LL▼RKRL| Camesine18100232
196 KLKQNYLIVDKGYNSFPSNIPGTAYHKA-----------------------LL▼RKRL| Citrclem20812543
187 KLKENYQIVDKGYNSFPTSIPGTSYHKA-----------------------LL▼RRRL| Caripapa16424056
196 MLNDNYHIVDKGYNSFPTKIPGTAYHKA-----------------------LS▼RKRL| Poputric26988127
195 MLSDNYHIVDKGYNSFPTKIPGTAYHKA-----------------------LL▼RKRL| Poputric26989962
195 KLKENYHIMNKGYNCFPTKIPGTAYQKA-----------------------LL▼RKRL| Maniescu17967099
195 KLKENYHIMDKGYNSFPTKIPGTAYHKA-----------------------LL▼RKRL| Maniescu17990273
197 KLDENYHIMNKGYNSFPTKIPGTAYQKA-----------------------LL▼RKKL| Ricicomm16809033
158 KLKQNYHMVDKGYNCFPTNMPGTAYHKA-----------------------LL▼RKRL| Fragvesc27273641
195 RLKENYCIVDKGYNSFPTNIPGTAYHKA-----------------------LL▼RKRL| Prunpers17650776
195 ALKKNYCMVDKGYNSFPNTIPGTLYNKA-----------------------VL▼RKRL| Aquicoer22041719
195 ELKKNYFIVDKGYNSFPTNIPGTPYRKA-----------------------LQ▼RKRL| Gossraim26769098
208 ELKKNYFIVDRGYNSFPTNIPGTPYKKALL▼LLESSTCQIINCLRSYSLKTNSLQARKRL| Theocaca27459467
155 ELKKNYCIVDRGYNSFPTNIPGTPYKKA-----------------------LW▼RKRL| Vitivini17821893
155 ELKKNYRIVDKGYNSFPTVLPGTAYKKA-----------------------LT▼RKRL| JatrcurcJcr4S00146.120
193 DLKKNYRIVDKGYNSFPTSLPGTPYRKA-----------------------LM▼RKRL| Ricicomm16821717
193 ELKKNYRIVDKGYNSFPTSLPGTSYKKA-----------------------LS▼RKEL| Maniescu17977346
193 ELKKNYRIVDKGYNSFPTSLPGTPYRKA-----------------------LT▼RKRL| Maniescu17981266
193 EMKRNYRIVDKGYNSFATSLPGTPYRKA-----------------------VL▼RKRL| Poputric27021904
193 ELKRNYRIVDKGYNSFPTSLPGTPFKKA-----------------------VL▼RKRL| Poputric27032146
194 ELKKNYLIVDKGYNSFSTNIPGTPYKKA-----------------------LQ▼RKRL| Camesine18092678
194 ELKKNYLIVDKGYNSFSTNIPGTPYKKA-----------------------LQ▼RKRL| Citrclem20787859
170 ELKMNYGIVEKGYNSFPTSIPASPYKRA-----------------------IT▼RKRL| Linuusit23154342
201 ELKMNYGIVEKGYNSFPTSVPGSPYKRA-----------------------LT▼RKRL| Linuusit23182042
185 ELRKNYMAVNKGYNSFPINIPGTPYKKA-----------------------LA▼RERL| Fragvesc27262340
195 ELNNNYTIVDKGYNSFPTNIPGTLYKKA-----------------------LL▼RKRL| Prunpers17651481
199 ELKKNYSIVDKGYNSFPINLPGTLYRKA-----------------------LQ▼RKKL| Solalyco27279257
199 ELKKNYSIVDKGYNSFPINLPGSLYRKA-----------------------LQ▼RKKL| Solatube24385837
193 KLKKNYHMVDRGYNSFPSIIPGTPYRRA-----------------------LA▼RRDL| Eucagran23580902
      @  NY  @_+GYN F.  @P..   jA                       @ ARjjL

233 NQILSEIIRERKEKRLVEKDLLGHLLNFKDEKG-ETLTEDQIADNVIGILFAAQDTTASF| Gossraim26789996
233 NQILGEIICERKEKGLVEKDLLGHLLNFKDEKG-QTLTEDKIADNIIGVLFAAQDTTASV| Theocaca27461426
234 NQIVREIICERKEKRLVEKDLLGHLLNFKDEKG-QILTEDQIADNIIGVLFAAQDTTASV| Vitivini17837849
230 NRILGEIISSRKEKRLLEKDMLGHFLSFKDEND-EKLSDEQIADNIIGVLFAAQDTTASV| Gossraim26801904
195 SQIVSEIICERKEKRLLEKDLLGCLLNSRDEKG-RTLTEDQIADNIIGVLFAAQDTTASV| Camesine18100232
231 SQIVSEIICERKEKRLLEKDLLGCLLNSRDEKG-RTLTEDQIADNIIGVLFAAQDTTASV| Citrclem20812543
222 NQILTEIIRGRKEKRLVESDLLGHLLSFQDEGG-KILSDDQIADNIIGVLFAAQDTTASV| Caripapa16424056
231 NQILSEIICERKEKKLLEKDFLGNLLNFKNEKG-EILTEDQIADNIIGVLFAAQDTTASV| Poputric26988127
230 NQILSEIICERKEKRLLEKDFLGHLLNFKNEKG-EILTEDQIADNIIGVLFAAQDTTASV| Poputric26989962
230 NQVGEIICERKEKKMAEKDLLGHLLKFKDENG-QILTEDQIADNIIGVLFAAHDTTAAA| Maniescu17967099
230 DQILGEIICERKEKRLLEKDLLGRFLNFKDENG-QTLSEDQISDNIIGVLFAAQDTATA| Maniescu17990273
232 NQILGEIISERKEKRLLEKDLLGRFLNFKDENG-QTLTEDQIADNIIGVLFAAQDTTASV| Ricicomm16809033
193 SQILRQIISERKEKKVLQKDLLGDLLNFQNEKG-QNLSEDQISDNIIGVLFAAQDTTASV| Fragvesc27273641
233 GQILSQIICERKEKKTLQKDLLGDLLNFQDEKG-QILTEDQIADNIIGILFAAQDTTASA| Prunpers17650776
230 SQLVSEIICDRREKRLDKKDLLGCLMQYKDEKG-QILTDNQIADNIIGVLFAAQDTTASA| Aquicoer22041719
231 SKILSDIISERKEKKLLEKNLLGRLLNSKAEKG-QILTDDKIADNIIGTLFAAQDTTASV| Gossraim26769098
268 SKILSDIICKRKEKKLLEKDLLGCLLNYKDEKG-EVLTCDQIADNIIGVLFAAQDTTASV| Theocaca27459467
190 SKILSELIGQRKEKRLADKDLLGSLLNSKDEKG-ETLTNDQIADNIIGVLFAAQDTTASV| Vitivini17821893
190 SKILSDIISERKEKKLLEKDLLGCLLNSKDDKG-QVLTDDQIADNIIGVLFAAQDTTASS| JatrcurcJcr4S00146.120
228 SKILSDIISQRKEKKLLDNDLLGCLLNSKDEQG-NVLTDDQIADNIIGVLFAAQDTTASA| Ricicomm16821717
228 SKILSDIISERKEKKLLEKNLLGRLLNSKDDVG-QVLTDDQIADNIIGVLFAAQDTTASA| Maniescu17977346
228 SKILGDIISERKEKKLLEKDLLGCLLNSKGDKG-QVLTDDQIADNVIGALFAAQDTTASA| Maniescu17981266
228 SKILGDIIRERKEKRLLVKDLFGCLLNSKNEKG-ELLTDDQIADNIIGVFFAAQDTTASA| Poputric27021904
228 SKILGDIICERKEKRLLEKDLLGCLLNSKDEKG-EVLTDDQIADNIIGVLFAAQDTTATA| Poputric27032146
229 NEILSDIIRERKEKRLHEKDLLGCLLNSKDENG-EVLSDDKIADNIIGVLFAAQDTTASV| Camesine18092678
229 NEILSDIIRERKEKRLHEKDLLGCLLNSKDENG-EVLSDDKIADNIIGVLFAAQDTTASV| Citrclem20787859
205 NEILGDIISERKEKKLLEKDLLGCLLSSKDQKG-EVLTDDQVADNIIGVLFAAQDTTASA| Linuusit23154342
236 NEILGAIISERKEKKLLEKDLLGCLLNSKDQRG-EELTDDQVADNIIGVLFAAQDTTASA| Linuusit23182042
220 RHIIGDIIHERKEKRLPEKDLLGCLLRSINEGG-EVLSDDQIADNIIGVLFAAQDTTASA| Fragvesc27262340
230 REILGDIISERKEKRLHEKDLLGCLLNSKDNKG-EVLTDDQIADNIIGVLFAAQDTTASV| Prunpers17651481
234 GKILSEIIREMKEKKTLEKGLLSCFLNAKEEKGFLVLNEDQIADNIIGVLFAAQDTTASV| Solalyco27279257
234 GKILSEIIREMKEKKVLEKGLLSCFLNAKEEKGLLVLNEDQIADNIIGVLFAAQDTTASS| Solatube24385837
228 SKIISGIIADRKEKRIFGKNLLGHLLDSKDENG-ETLTEDQIADNIIGVLFAAQDTTASV| Eucagran23580902
    j@@  @I    +EK      oo  o@    _     L  _j@.DN@@G oFAAjDTTA.

292 ITWILKFLHDDPKLLEAVK--▼EQKAIFESNSG-G--------KERLTWAQTR-KMTLTY| Gossraim26789996
292 LTWILKFLRDDPRLLEAVK--▼EQKAIYDSNDG-G--------KRSLTWAQTR-SMPLTY| Theocaca27461426
293 LTWVLKYLHDNPKLLESVK--▼EQKAIYESNNG-G--------NRPLTWDQTR-NMPLTY| Vitivini17837849
289 LTWVLKFLHDDPQLLEAVK--▼EQMAIYDTNNG-G--------NQPLTWEQTR-SMPLTH| Gossraim26801904
254 LTWILKYLHDNPKLLEAVK--▼EQKVVHESNNG-G--------QRALTWAQTR-NMRCTY| Camesine18100232
290 LTWILKYLHDNPKLLEAVK--▼EQKVVHESNNG-G--------QRALTWAQTR-NMRCTY| Citrclem20812543
281 LTWIIKYLHDDQKLLEAVK--▼EQKAIYESNDR-G--------RKPLSWAQTR-NMPLTH| Caripapa16424056
290 LTWILKYLHDNQKLLEDVK--▼EQMAIYEANGR-G--------EKPLTWAQTR-NMPLTY| Poputric26988127
289 LTWILKYLHDDQRLLEAVK--▼EQMEIYEANGR-G--------EKPLTWAQTR-NMPLTY| Poputric26989962
289 LTWILKYLHENRTLLEAVK--▼EQMAIREANIR-G--------NKSLTWTQTR-NMPLTF| Maniescu17967099
289 LTWILKYLHDHHKLLEAVK--▼EQMAIYEANGG-G--------NKPLTWAQTR-NMPLTY| Maniescu17990273
291 LTWILKFLYDDQKLLEAVK--▼EQMAIYKVNNG-K--------K-FLTWAQTR-NMPLTH| Ricicomm16809033
252 LTWILKYLHDNQNILEAVK--▼EQKAICDANDG-G--------KRSLTWAQIR-NMPLTH| Fragvesc27273641
292 LTWILKYLHDNPKILEAVK--▼EQKAIFEANDG-C--------KRSLTWAQTR-NMPLTY| Prunpers17650776
289 LTWILKYLHDNSKLLEAVK--▼EQKVIYESNED-G--------SKSLTWSQTR-SMILTH| Aquicoer22041719
289 MTWIVKYLHDNPKLLEAVK--▼EQKAIKILTEE-S--------NQPLSWSHTR-NMPLTY| Gossraim26769098
327 MTWIVKYLHDNPKLLETVK--▼EQKAIRRLNEE-G--------NQPLRWSQTR-DMPVTY| Theocaca27459467
249 MTWIVKYLHDDPKLLEAVK--▼EQKAINKSNEE-G--------NRPLSWSQTR-NMPVTH| Vitivini17821893
249 LTWVVKYLHDNPKLLEVVK--▼EQKAIYEMNGE-G--------SQPLSWSQTR-SPFTQ| JatrcurcJcr4S00146.120
287 MTWI-----------------▼EQKTIYELNDE-G--------SQPLSWGQTR-NMPLSH| Ricicomm16821717
287 LTWIVKYLHDNPKLLEAVK--▼EQKAIYKMNDE-G--------NKPLTWSQTR-NMPFTN| Maniescu17977346
287 LTWIVKYLHDNPKLLEAVK--▼EQKEIYKMNNE-G--------NQPLSWNQTR-NMPFTH| Maniescu17981266
287 MTWIAKYLHDNQKVLEAVK--▼EQDAIRKLNDE-S--------NQPLSWSQTR-NMPFTH| Poputric27021904
287 MTWIVKYLHDNQKILEAVK--▼EQNAIRKLNDE-E--------NQPLSWSQTR-SMPLTH| Poputric27032146
288 MTWIVKYLHDQSETSRGSKGI▼EQKAIRKLNEE-G--------NQPLSWTQTR-NMPVTY| Camesine18092678
288 MTWIVKYLHDNPKLLEGVK--▼EQKAIRKLNEE-G--------NQPLSWTQTR-NMPVTY| Citrclem20787859
264 MTWIIKYLHDNPKLLEGVK--▼EQKAIQELNER-D--------TTVTWSQTRTNMHFTH| Linuusit23154342
295 MTWIIKYLHDNPKLLEGVK--▼EQKAIQELNET-DKRSSSSSNETTVTWSQTRKNMPFTH| Linuusit23182042
279 MTWIFKYLHDEPKILEAVK--▼EQNAIRLSNEQAG--------NQPLSWADTR-NMPISY| Fragvesc27262340
289 MTWIIKYLHDNPKILEAVK--▼EHDAIRESNEE-G--------NQPLSWAQSR-NMPISS| Prunpers17651481
294 MTWILKYLHDNPKLLECVK--▼EQKVIWQSNEQ-E--------NHGLTWTQTR-KMPITS| Solalyco27279257
294 MTWILKYLHDNPKLLECVK--▼EQKVIWQSNEQ-E--------NHGLTWTQTR-KMPITS| Solatube24385837
287 MTWILKYLHDNPKLLEGVK--▼EQNTIHRSNDE-G--------FQPLSWSQTR-RMPISH| Eucagran23580902
    @TW@ +$@ _j    j  +  AEj  @                @ W j +  M o.

340 R▼LLEGLRMASIISFTFREAVVDVEYK▼YLIPKGWKVMPLFRNIHHNPEFFSDPHDFDPS| Gossraim26789996
340 R▼ILESLRMASIISFTFREAVVDVEYK▼YLIPKGWKVMPLFRNIHHNPEFFSDPHDFDPS| Theocaca27461426
341 R▼ILESLRMASIISFTFREAVVDVEYK▼YLIPKGWKVMPLFRNIHHNPEFFSDPQNFDPS| Vitivini17837849
337 R▼MESLRMASIISFTFREAVVDVEYN▼YLIPKGWKVMPLFRNIHHNPEFFPNPQEFDPS| Gossraim26801904
302 R▼ILESSMRMASIISFTFREAVCDVEYK▼FLIPKGWKVMPLFRNIHHNSEFFSEPQKVDPS| Camesine18100232
338 R▼ILESSMRMASIISFTFREAVCDVEYK▼FLIPKGWKVMPLFRNIHHNSEFFSEPQKVDPS| Citrclem20812543
329 K▼IMESLRMASIISFTFREAVVDVEYK▼YLIPKGWKVMPLFRNIHHSPEFFSDPQKFDPS| Caripapa16424056
338 R▼VLESLRMASIISFTFREAIVDVEYH▼YLIPKGWKVLPLFRNIHHNPEFFPDPRIFDPS| Poputric26988127
337 R▼ILESLRMASIISFTFREAVVDVEYN▼YLIPKGWKVLPMFRNIHHNPEFFPDPHIFDPS| Poputric26989962
337 R▼VLESLRMASIIAFVYREAIIDVQYK▼YLIPKGWKVMPLFRNIHHNSEFFPHPHIFDPS| Maniescu17967099
337 R▼VLESLRMASIISFAYREAIIDVEYK▼YLIPKGWKVMPLFRNIHHNPEIFTDPHIFDPS| Maniescu17990273
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340 R▼VLESLRMASIISFTFREAVVDVEYK▼YLIPKGWKVMPLFRNIHHNPEFFSDPQNFDPS| Prunpers17650776
337 K▼ILESLRMSSIISFTFREAVVDVEYK▼YLIPKGWKVMPLFRNIHHNAEFFSDPDKFDPL| Aquicoer22041719
337 K▼ILETLRMASIISFTFREAVADVEYK▼YLIPKGWKVMPLFRNIHHNPDFFTDPQKFDPS| Gossraim26769098
375 K▼VLETLRMASIISFTFREAVADVEYK▼YLIPKGWKVMPLFRNIHHNPEFFTDPQKFDPS| Theocaca27459467
297 K▼ILESLRMASIISFTFREAVADVEFK▼YLIPKGWKVMPLFRNIHHDPKFFPDPQKFDPS| Vitivini17821893
297 K▼VLESLRMASIISFTFREAVADVEYK▼CLIPKGWKVMPLFRNIHHNPEYFSDPHKFDPS| JatrcurcJcr4S00146.120
320 K▼VLESLRIASIISFTFREAVADVEYK▼YLIPKGWKVMPLFRNIHHNPEYFSDSQKFDPS| Ricicomm16821717
335 K▼VLESLRMASIISFTFREAVADVEYK▼YLIPKGWKVMPLFRNIHHNPEYFSDPQKFDPS| Maniescu17977346
335 K▼VLESLRMASVISFTFREAVSDVEYK▼YLIPKGWKVMPLFRNIHHNPEYFRDPHKFDPS| Maniescu17981266
335 K▼VLESLRMASIISFTFREAVADVEYK▼YLIPKGWKVMPLFRNIHHNPEYFRDPQKFDPT| Poputric27021904
335 K▼VLESLRMASIISFTFREAVADVEYK▼YLIPKGWKVMPLFRNIHHNPEYFSDPQKFDPT| Poputric27032146
336 K▼VLESLRMASIISFTFREAVADVEYK▼YLIPKGWKVLPLFRNIHHNPEYFTDPQKFDPS| Camesine18092678
336 K▼VLESLRMASIISFTFREAVADVEYK▼YLIPKGWKVLPLFRNIHHNPEYFTDPQKFDPS| Citrclem20787859
312 K▼ILESLRMASIIAFTFREAVTDVKYK▼YLIPKGWKVMPLFRNIHHNPEYFSDPHKFEPS| Linuusit23154342
352 K▼ILESLRMASIIAFTFREAVTDVKYK▼YLIPKGWKVMPLFRNIHHNPEYFSDPHKFEPS| Linuusit23182042
328 K▼VLESLRLSSIISFLFREAVVDVEYK▼YLIPKGWKVMPLFRNIHHNPEFFTDPQKFDLS| Fragvesc27262340
337 K▼VLESLRMASIISFAFREAVVDVEYK▼YLIPKGWKVMPLFRNIHHNPEFFADPHKFDPS| Prunpers17651481
342 K▼VLESLRMASIISFAFREAVADVEYK▼YLIPKGWKVMPLFRNIHHNPEFFPDPQKFDPS| Solalyco27279257
342 K▼VLETLRMASIISFAFREAVADVEYK▼YLIPKGWKVMPLFRNIHHNPEFFPDPQKIDPS| Solatube24385837
335 K▼VLEALRMASIISFTFREAVADVEYK▼YLIPKGWKVMPLFRNMHHNPEFFSDPEKFDPS| Eucagran23580902
    + @@E.@R@.S@I.F $REA@ DVj$joLIPKGWKV@P@oRN HH .joF  .j o_

400 RFE▼VAPKPNTFMPFGNGVHACPGNELAKLEALILIHHLVTKF▼WEVVGSESGIQYGPFP| Gossraim26789996
400 RFE▼-APKPNTFMPFGNGVHACPGNELAKLEALILIHHLVTKF▼WEVVGSQSGIQYGPFP| Theocaca27461426
401 RFE▼-APKPNSFLPFGSGVHACPGNELAKLEILILTHHLVTKF▼WEVVGSQGGIEYGPFP| Vitivini17837849
397 RFE▼-APRANTFMPFGNGVHACPGNELAKLEALILIHHLVTNF▼WEVVSSESGIQYGPFP| Gossraim26801904
362 RFK▼-APRPNTFVPFGLGVHACPGNELAKLEMLILIHHLVTEF▼WEVVGSQNGIQYGPFP| Camesine18100232
398 RFK▼-APRPNTFVPFGLGVHACPGNELAKLEMLILIHHLVTEF▼WEVVGSQNGIQYGPFP| Citrclem20812543
389 RFK▼-PPKPNTFMPFGNGVHACPGNELAKLEMLILIHHLFTKF▼WEMVGSQYGIQYGPFP| Caripapa16424056
398 RFE▼-APKPNTFMPFGNGVHACAGNEIAKLEMFVLIHHLVTRF▼WEVVGSQNGIQYGPFP| Poputric26988127
397 RFE▼-APKPNTFMPFGNGVHACPGNEIAKLEILILIHHIVTKF▼WEVVGSQNGIQYGPFP| Poputric26989962
397 RFE▼-SPKPNTFMPFGNGSHACPGNELAKLEMLSLIHHLITKF▼WEVVGSVDGIQYGPFP| Maniescu17967099
397 RFE▼-SPKPNTFIPFGNGVHACPGNELAKLEMLILIHHLVTKF▼WEVVGTVEGVQYGPFP| Maniescu17990273
398 RFE▼-PPKPNTFIPFGNGAHACPGNGLAKMEMLIFIHHLVTKF▼WEVEGSVDGIQYGPFP| Ricicomm16809033
360 RFE▼-APKAYTFIPFGKGVHACPGNELAKLEMFILIHHLVTSF▼WEVVGSQSGIQYGPFP| Fragvesc27273641
400 RFE▼-GPKPNTFMPFGKGVHACPGNELAKLEMLILVHHLVTKF▼WEVEGSQSGIQYGPFP| Prunpers17650776
397 RFE▼-QNRILL------------------------------------------------| Aquicoer22041719
397 RFE▼-APKPNTFMPFGSGVHACPGNELAKLEMLIVTHHLVSKF▼WEVVGSESGIQYGPFP| Gossraim26769098
435 RFE▼-APKPNTFMPFGNGVHACPGNELAKLEMLIMTHHLVSKF▼WEVVGSQSGSQYGPFP| Theocaca27459467
357 RFE▼-APKPNTFVPFGNGVHACPGNELAKLEMLIMTHHLVTKF▼WEVAGFQSGIQYGPFP| Vitivini17821893
357 RFE▼-APKPNTFMPFGSGVHACPGNELAKLEMLIITHHLVTKF▼WELVGSENGIQYGPFP| JatrcurcJcr4S00146.120
380 RFE▼-APKPNTFMPFGNGVHACPGNELAKLEMLIITHHLVTKF▼WEVVGSQNGIQYGPFP| Ricicomm16821717
395 RFE▼-APKPNTFMPFGSGVHACPGNELARLEMLIITHHLVTKF▼WEVVGSEDGIQYGPFP| Maniescu17977346
395 RFE▼-PPKPNTFMPFGSGVHVCPGNELAKLEMLIITHHLSTKF▼WEVVGSQNEIQYGPFP| Maniescu17981266
395 RFE▼-APRPNTFMPFGSGQHACPGNELAKLEMFIMIHHLLTKF▼WEVVGSQSGIQYGPFP| Poputric27021904
395 RFE▼-APKPNTYMPFGSGQHACPGNELAKLEILVMIHHLLTKF▼WKVVGSQNGIQYGPFP| Poputric27032146
398 RFE▼-APKPNTFMPFGSGVHSCPGNELAKLEMLVMIHHLVTKF▼WEVIGSQSGIQYGPFP| Camesine18092678
396 RFE▼-APKPNTFMPFGSGVHSCPGNELAKLEMLVMIHHLVTKF▼WEVIGSQSGIQYGPFP| Citrclem20787859
372 RFE▼-AAKANTFMPFGNGVHACPGNELAKLEMLIFIHHLVTKY▼WEVVGDESGTQNCPFP| Linuusit23154342
412 RFE▼-AAKANTFMPFGNGVHACPGNELAKLEMLIFIHHLVTKY▼WEVVGDESGTQNCPFP| Linuusit23182042
388 RFE▼-APKPNTFMPFGSGVHACPGNELAKLELLIMIHHLVTNF▼WEIEGSQSGTEYSPFP| Fragvesc27262340
397 RLE▼-APKPNTFMPFGSGVHACPGNELAKLELLIMMHHLVTKF▼WEVVGSQNEIQYSPFP| Prunpers17651481
402 RFE▼-APKPNTFMPFGSGVHACPGNELAKLEILIMTHHLVTKF▼WEVVGSGSGIQYGPFP| Solalyco27279257
402 RFE▼-APKPNTFMPFGSGVHACPGNELAKLEILIMTHHLVTKF▼WEVVGSGSGIQYGPFP| Solatube24385837
395 RFE▼-TPKPYTFMPFGSGAHACPGNELAKLELLTLIHHVVTKF▼WEVIGSQNGVQYSPFP| Eucagran23580902
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460 VPQQGLPARFWKQSS---------------------------------------------| Gossraim26789996
459 VPQQGLPTRFWKDSSRDVCPLVTDLGKNSSSIAATKL-----------------------| Theocaca27461426
460 VPQRGLPARFWKLESKK-------------------------------------------| Vitivini17837849
456 VPQQGLPARFWKEPKQ--------------------------------------------| Gossraim26801904
421 VPEKGLPARFWRVP----------------------------------------------| Camesine18100232
457 VPEKGLPARFWRVP----------------------------------------------| Citrclem20812543
448 VPQQGLLAQFWKESSCLIQDFV--------------------------------------| Caripapa16424056
457 VPHQGLPARFWKEPV---------------------------------------------| Poputric26988127
456 VPRQGLPARFWR------------------------------------------------| Poputric26989962
456 VPQQGLPARFWPEAT---------------------------------------------| Maniescu17967099
456 VPQQGLPARFWQEST---------------------------------------------| Maniescu17990273
457 VPQQGLPARFWQESN---------------------------------------------| Ricicomm16809033
419 VPQHGLPARFLKEQ▼QGQVALAEHDQLRP------------------------------| Fragvesc27273641
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456 VPQQGLPTRFWKEST---------------------------------------------| Gossraim26769098
494 VPLQGLPTRFWKEST▼-------------------------------------------| Theocaca27459467
416 VPVNGLPARLWKQST---------------------------------------------| Vitivini17821893
416 VPIHGLPARFWKESTT--------------------------------------------| JatrcurcJcr4S00146.120
439 VPVHGLPARFWRESTS--------------------------------------------| Ricicomm16821717
454 VPLHGLPARFWKESS---------------------------------------------| Maniescu17977346
454 VPYHGLPARFWKEST---------------------------------------------| Maniescu17981266
454 VPLHGLPARFWKEHT---------------------------------------------| Poputric27021904
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457 IPYQGFPARFSKETK---------------------------------------------| Camesine18092678
455 IPYQGFPARFSKETK---------------------------------------------| Citrclem20787859
431 VPMNGLPARFWKQQH---------------------------------------------| Linuusit23154342
471 VPMNGLPARFWNTTTPSSQHL---------------------------------------| Linuusit23182042
447 VPLNGLPVKLWKLE----------------------------------------------| Fragvesc27262340
456 VPIHGLPAKFWKKST---------------------------------------------| Prunpers17651481
461 VPLGGLAARFWKTTS---------------------------------------------| Solalyco27279257
461 VPLGGLAARFWKESN---------------------------------------------| Solatube24385837
454 VPLHGLPARFWKLPS---------------------------------------------| Eucagran23580902
    @.  .o  jo

475 -----------------------------------------------C------------| Gossraim26789996
496 -----------------------------------------------F------------| Theocaca27461426
477 -----------------------------------------------S------------| Vitivini17837849
472 -----------------------------------------------S------------| Gossraim26801904
435 ------------------------------------------------------------| Camesine18100232
471 ------------------------------------------------------------| Citrclem20812543
470 -----------------------------------------------S------------| Caripapa16424056
472 -----------------------------------------------N------------| Poputric26988127
468 ------------------------------------------------------------| Poputric26989962
471 ------------------------------------------------------------| Maniescu17967099
471 -----------------------------------------------TLKQDYLPL----| Maniescu17990273
472 ------------------------------------------------------------| Ricicomm16809033
448 -----------------------------------------------S------------| Fragvesc27273641
472 ------------------------------------------------------------| Prunpers17650776
438 ▼GKWWDRKMGFSIAHSQSHRMDCQPDFGIKQSATKDNKSVHDSCTSD------------| Aquicoer22041719
471 ------------------------------------------------------------| Gossraim26769098
510 -----------------------------------------------SLPEAAREPCVKLQ| Theocaca27459467
431 ------------------------------------------------------------| Vitivini17821893
432 ------------------------------------------------------------| JatrcurcJcr4S00146.120
455 ------------------------------------------------------------| Ricicomm16821717
469 ------------------------------------------------------------| Maniescu17977346
469 ------------------------------------------------------------| Maniescu17981266
469 ------------------------------------------------------------| Poputric27021904
469 ------------------------------------------------------------| Poputric27032146
472 ------------------------------------------------------------| Camesine18092678
470 ------------------------------------------------------------| Citrclem20787859
446 ------------------------------------------------------------| Linuusit23154342
492 ------------------------------------------------------------| Linuusit23182042
461 ------------------------------------------------------------| Fragvesc27262340
471 ------------------------------------------------------------| Prunpers17651481
476 ------------------------------------------------------------| Solalyco27279257
476 ------------------------------------------------------------| Solatube24385837
469 ------------------------------------------------------------| Eucagran23580902


476 ------------------------------------------------------------| Gossraim26789996
497 ------------------------------------------------------------| Theocaca27461426
478 ------------------------------------------------------------| Vitivini17837849
473 ------------------------------------------------------------| Gossraim26801904
435 ------------------------------------------------------------| Camesine18100232
471 ------------------------------------------------------------| Citrclem20812543
471 ------------------------------------------------------------| Caripapa16424056
473 ------------------------------------------------------------| Poputric26988127
468 ------------------------------------------------------------| Poputric26989962
471 ------------------------------------------------------------| Maniescu17967099
480 ------------------------------------------------------------| Maniescu17990273
472 ------------------------------------------------------------| Ricicomm16809033
449 ------------------------------------------------------------| Fragvesc27273641
472 ------------------------------------------------------------| Prunpers17650776
485 ------------------------------------------------------------| Aquicoer22041719
471 ------------------------------------------------------------| Gossraim26769098
524 WAELEWVMPPAGELRLKDTKLVDYSLCCLPLWTPLIRCGYQSLIALSPLSCQSLPAALAM| Theocaca27459467
431 ------------------------------------------------------------| Vitivini17821893
432 ------------------------------------------------------------| JatrcurcJcr4S00146.120
455 ------------------------------------------------------------| Ricicomm16821717
469 ------------------------------------------------------------| Maniescu17977346
469 ------------------------------------------------------------| Maniescu17981266
469 ------------------------------------------------------------| Poputric27021904
469 ------------------------------------------------------------| Poputric27032146
472 ------------------------------------------------------------| Camesine18092678
470 ------------------------------------------------------------| Citrclem20787859
446 ------------------------------------------------------------| Linuusit23154342
492 ------------------------------------------------------------| Linuusit23182042
461 ------------------------------------------------------------| Fragvesc27262340
471 ------------------------------------------------------------| Prunpers17651481
476 ------------------------------------------------------------| Solalyco27279257
476 ------------------------------------------------------------| Solatube24385837
469 ------------------------------------------------------------| Eucagran23580902


476 PS                                                          | Gossraim26789996
497 CS                                                          | Theocaca27461426
478 AP                                                          | Vitivini17837849
473 RQ                                                          | Gossraim26801904
435 -C                                                          | Camesine18100232
471 -C                                                          | Citrclem20812543
471 SN                                                          | Caripapa16424056
473 LE                                                          | Poputric26988127
468 --                                                          | Poputric26989962
471 SL                                                          | Maniescu17967099
480 LH                                                          | Maniescu17990273
472 --                                                          | Ricicomm16809033
449 NC                                                          | Fragvesc27273641
472 --                                                          | Prunpers17650776
485 SS                                                          | Aquicoer22041719
471 -T                                                          | Gossraim26769098
584 IF                                                          | Theocaca27459467
431 -T                                                          | Vitivini17821893
432 KL                                                          | JatrcurcJcr4S00146.120
455 -C                                                          | Ricicomm16821717
469 -I                                                          | Maniescu17977346
469 -T                                                          | Maniescu17981266
469 -S                                                          | Poputric27021904
469 -S                                                          | Poputric27032146
472 -S                                                          | Camesine18092678
470 -S                                                          | Citrclem20787859
446 --                                                          | Linuusit23154342
492 -N                                                          | Linuusit23182042
461 --                                                          | Fragvesc27262340
471 -C                                                          | Prunpers17651481
476 -T                                                          | Solalyco27279257
476 --                                                          | Solatube24385837
469 --                                                          | Eucagran23580902
```

(after)

```
                >P450_M50_Trd.8 [33:521]  ( 1 - 521 )

  1 ME---ILSIFCYILLFLSTL-----L-SY-PFLFLKKQKKKV---------SKQRVYKLP| Vitivini17837849
  1 ME---IVSILLYIILFLSTL-----L-S---L--LKKQKNGI----------HFKKFKLP| Gossraim26801904
  1 MES--IVSNLACLLFLLSSL-----I-SY-IL--LTKLKRE----------AEKCAKLP| Citrclem20812543
  1 ME---VASIL--ICLFLSSL-----L-SY-PL--LKKMRRPW---------RIPKQRAKLP| Poputric26988127
  1 ME---IASILAYVCFFLSSL-----L-SY-PL--LKKKNRI----------PKQRAKLP| Poputric26989962
  1 MS---IASIMIYICLSLSSL-----L-SY-LF--IKKKTRA----------SKPRAKLP| Maniescu17967099
  1 ME---IAFVLVYICLSLSSL-----L-SY-PF--IKKKTGV----------SKPRAKLP| Maniescu17990273
  1 ME---IAFILIYMCLFVSCL-----L-SY-PLLIKKKKWE----------SKPRARLP| Ricicomm16809033
  1 ME---IVSSLIHILLCLSSL-----L-LY-HF--IKKQKRN----------SKHKAKLP| Prunpers17650776
  1 MA-----GILVYATILLMTL-----V-WC-RL--LRRQKKGS---------QGKSETQLP| Gossraim26769098
  1 MA-----GVFVSVLIFLLSL-----L-SY-IA--KRRCKKE----------LCKGVKLP| Maniescu17977346
  1 MY-----AILVYVFIFFLGG-----I-SY-VA--MRRGKKE----------VYNGVKLP| Maniescu17981266
  1 MG-----GILAYVLIFLISV-----V-SY-II--KIRKKKK----------PNKGIKLP| Poputric27021904
  1 MG-----GILAYVLIFLVSV-----V-AY-II--KKRNNKE----------PYTGIKLP| Poputric27032146
  1 ME-----GILLCVFIFLLAA-----LPLC-ML--FTRDKTE----------PRKKVKLP| Camesine18092678
  1 ME-----GILLCFFIFLLAA-----LPLC-ML--FARDKTE----------PRKKAKLP| Citrclem20787859
  1 MGDGFFLNILLLVVVFIIIIIIIIL-SC-YL--LL--ITK----------IRKPHLLP| Linuusit23182042
  1 MD-----AIFTCVFIFLLTL-----L-SFLIF--TKRDKREE---------PQKRANLP| Prunpers17651481
  1 MVN--YFEIFLYISMFVLGY-----L-SY-YF-CFGKNNNSS---------SKKNAYKLP| Solalyco27279257
  1 MVN--YFEIFFYSSILFLGI-----L-SY-YF-CFSKNNNSS---------SKKNAYKLP| Solatube24385837
  1 MC-----GGSICVLAAVFAL-----SL-VF-IF--LRDGKK----------SQRKSKLP| Eucagran23580902
  1 MEK--IASTLIYIFISLSAL-----F-LY-HC--IKKQKRT----------FLHKAKLP| Fragvesc27273641
  1 MET--IVFIILYVILFLSTL-----L-SY-PF--LRKQKRGF---------PIERYKLP| Gossraim26789996
  1 MES--IVSTLACLLFLLSSL-----I-SY-IL--LTKLKRE----------AEKCAKLP| Camesine18100232
  1 MEN--NISIGLYAILLLCIF-----L-SY-FF--IRKKRREE---------HRGGAKLP| Caripapa16424056
  1 ME---KPGFLAYVVIFLLAL-----L-FY-IL--RREKRE-----------PKHRAKLP| Vitivini17821893
  1 MV----CGILVYFIIFLLSL-----F-SY-IT--KRRCKQE----------RHKGIKLP| JatrcurcJcr4S00146.120
  1 MGDGFLFYILLLVAITIIIT-----L-SC-YL--LLKMINK----------IRKPQLLP| Linuusit23154342
  1 MV-----AIFTYVFVSLLTL----IF-LY-IF--MKKSKGGGEEDPHDDHGHKNRAAQLP| Fragvesc27262340
  1 ME---RGGLLLYILLVLSTF-----F-SY-IF--LNKNKIK----------PRKRAKLP| Aquicoer22041719
  1 MA-----GIFAYAVIFLITV-----V-LY-RL--LRREKKES---------QGRAEAELP| Theocaca27459467
  1 MG-----GILYILFFLFSL-----L-WY-IT--KRRNKKE-----------LSKGVKLP| Ricicomm16821717
  1 ME---TVSILLYVILFLSTL-----L-SY-PF--LKKQKRGL---------IPMNRFKLP| Theocaca27461426
    M              o        o  o       j                    LP

 42 PGSMGWPYIGETLQLYSQDPTVFFDSKQER▼GEIFKTHILGCPCVMLSSPEAARFVLVTR| Vitivini17837849
 37 PGSMGWPYVGETLQLYSQDPNVFFATKQKR▼GEIFKTHILGCPCVMLASPEAARFVLVTH| Gossraim26801904
 37 PGSMGWPFIGETLQIYSQDPNVFFATKQKR▼GEIFKTHILGCPCVMLASPEAAKFVLATH| Citrclem20812543
 39 PGSMGWPFVGETLQLYTQDPNVFFATKQKR▼GEVFKSHILGCPCVMLANPEGARFVLVTH| Poputric26988127
 38 PGSMGWPYVGETLQLYTQDPNVFFATKQKR▼GEVFKSHILGCPCVMLASPEGARFVLVTH| Poputric26989962
 38 PGPMGWPYVGETLKLYSQDPNVFFATKQLR▼GEIFKTHILGCPCVMLASPEAARFMLVTH| Maniescu17967099
 38 PGSMGWPYVGETLQLYSHDPNVFFAAKQIR▼GEIFKTHILGCPCVMLASPEAARFVLVTH| Maniescu17990273
 40 PGSMGWPYVGESLKLYSQDPNVFFATRQLR▼GEIFKSHILGCPCVMLASPEAARFVLVTH| Ricicomm16809033
 38 PGSMGWPYIGETLQMYSMDPNIFFASKQKR▼GEIFKTHILGCPCVMLASPAATKFVLVTH| Prunpers17650776
 38 PGSMGWPYIGETLQLYSRDPNVFFASKQKR▼GEIFKTHILGCPSVMLASPEAARFVLVTQ| Gossraim26769098
 38 PGSMGWGYIGETLQLYSQDPNVFFANKQKR▼GEIFKTHILGCPCVMLASPEAARFVLVNQ| Maniescu17977346
 36 PGSMGWPYIGETLQLYSQDPNVFFTEKQKR▼GEIFKTHILGCPCVMLASPEASRFVLVTQ| Maniescu17981266
 36 PGSMGWPCIGETLQLYSQDPNVFFASKQKR▼GEIFKTHILGCPCIILASPEAARFVLVTQ| Poputric27021904
 36 PGSLGWPYIGETLQLYSQDPNVFFASKQKR▼GEIFKTHILGCPSVMLASPEAARFVLVTQ| Poputric27032146
 37 PGSMGWPLIGETLQLYSQDPNVFFAAKQKR▼GEIFKTHILGCPCVMLASSEAAKFVLVTQ| Camesine18092678
 37 PGSMGWPLIGETLQLYSQDPNVFFTAKQKR▼GEIFKTHILGCPCVMLASSEAAKFVLVTQ| Citrclem20787859
 44 PGSMGWPVVGETLQLYSQDPSIFFSSKQKRYGEIFKTHILGCPCIMLASPEAAKFVLVTQ| Linuusit23182042
 38 PGSLGWPYIGETLQLYSQDPNTFFSTKQKR▼GEIFKTHILGCPCVMLASPEAAKFVLVTE| Prunpers17651481
 42 PGSMGWPYIGETLQLYSQDPNAFFINRQRR▼GEIFKTKILGCPCVMLASPEAAKFVLVNQ| Solalyco27279257
 42 PGSMGWPYIGETLQLYSQDPNAFFINRQRR▼GEIFKTKILGCPCVMLASPEAAKFVLVNQ| Solatube24385837
 36 PGSMGWPYIGETLQLYSLDPNVFFATKQKR▼GEIFKTHILGCPCVMLAGPEAAKFVLVSQ| Eucagran23580902
 39 PGSMGWPCIGETLQMYSMDPNIFFSTKQKR▼GDIFKTHILGCPCVMLASPEATKFVLVTH| Fragvesc27273641
 40 PGSMGWPYIGETLQLYSQDPNIFFLTKQKR▼GEIFKTQILGCPCVMLASPEAARFVLVTH| Gossraim26789996
 39 PGSMGWPFIGETLQIYSQDPNVFFATKQKR▼GEIFKTHILGCPCVMLASPEAAKFVLATH| Camesine18100232
 39 PGSMGWPYVGETLQLYSQDPNVFFVTKQNR▼GEIFKTHILGCPCIMLASPEAAKFVLVTH| Caripapa16424056
 37 PGSMGWPYIGETLQLYSQDPSVFFAAKQKR▼GEIFKTHILGCPCVMLASPEAARFVLVTQ| Vitivini17821893
 37 PGSMGWPYIGETLQLYSQDPNVFFADKQKR▼GEIFKTHILGCPCVMLASSEAARFVLVTE| JatrcurcJcr4S00146.120
 41 PGSMGWPVVGETLQLYSQDPSIFFSSKQKRYGEIFKTHILGCPCIMLASPEAAKFVLVTQ| Linuusit23154342
 48 PGSFGWPYIGETLQLYSQDPNTFFSSRQKRYGKIFKTHILGSPCVMLASPEAAKFVLVTQ| Fragvesc27262340
 38 PGSMGWPYIGETLQLYSQDPNIFFTTKQQR▼GEIFKSHILGCPCVMLASPEAAKFVLVTQ| Aquicoer22041719
 38 PGSMGWPYIGETLQLYSQDPNVFFAAKQKR▼GEIFKTHILGCPSVMLASPEAARFVLVTQ| Theocaca27459467
 36 PGSMGWPYIGETLQLYSQDPNVFFADKQKR▼GEIFKTHILGCPCVMLASPEAARFVLVTQ| Ricicomm16821717
 40 PGSMGWPYVGETLQLYSQDPNVFFSTKQKR▼GEIFKTHILGCPCVMLASPEAARFVLVTH| Theocaca27461426
    PG.oGW.o@GE.Lj@Y. DP  FF  +Q R Gj@FK.jILG P @@L. . ..+F@L  j

102 AHLFKPTYPKSKEKMIGPSALFFHQGDYHAQLRKLVQSSLSPD--SIRKLVPSIEALAIS| Vitivini17837849
 97 AHLFKPTYPKSKERLIGPHALFFHRGGYHARLRRLVQNSLAPQ--TIKKLIPDIQGIAVS| Gossraim26801904
 97 AHFFKPTYPKSKEKIIGPSALFFHQAGYHARLRKLVQSSLSPE--RIKKLIPDIEAIAIS| Citrclem20812543
 99 AQLFKPTYPKSKEKMIGPSALFFHQGNYHNLIRKLVQSSLSPD--TIRKLIPSIESVAIS| Poputric26988127
 98 AHLFKPTYPKSKEKMIGPSALFFHQGDYHSLLRKLVQSSLSPD--KIRKLIPSMESVAIS| Poputric26989962
 98 AHLFKPTYPKSKERLIGPSALFFHQGEYHTQLRKLVKGSLSPE--TVRKLIPDIESIAMS| Maniescu17967099
 98 DHLFKPTYPKSKERLIGPSALFFHQGEYHYHLRKLVQSSLSPD--TIRKLIPDIESMTIS| Maniescu17990273
100 AHLFKPTYPKSKEKLIGPSALFFHQGEYHNHLRKLVQSSLSPD--TVKKLIPDIQSTAIS| Ricicomm16809033
 98 AYLFKPTYPKSKEQMIGPSALFFHQGDYHNSLRKLIQSSLSPNPTTMQKLVPDIEALAIS| Prunpers17650776
 98 AHLFKPTYPHSKERLVGPAALFFHQGDYHTRLRKLVQASLSIE--AIRNLVPDIDALAAS| Gossraim26769098
 96 AHLFKPTYPESKEHLIGPSALFFHQGDYHMRIRKLVKDSLSLD--ALRNLVVDISDIAAS| Maniescu17977346
 96 AHLFKPTYPKSKEHLIGPSAIFFHQGEYHMRLRKLVQGSLSLD--SLRNLVADISAIAAS| Maniescu17981266
 96 AHLFKPTYPKSKEHLIGPSAIFFHQGDYHIRLRKLVQGSLSLD--SIRNLVADISSTAAS| Poputric27021904
 96 AHLFKPTYPKSKEHLIGPSAIFFHQGDYHVRLRKLVQGSLSLD--AIRNLVADISATAAS| Poputric27032146
 97 AHLFKPTYPKSKEHLIGPSAIFFHQGDYHLRLRKIVQGSLSLE--AIRELVTDIEAAAVA| Camesine18092678
 97 AHLFKPTYPKSKEHLIGPSAIFFHQGDYHLRLRKIVQGSLSLE--AIRELVTDIEAAAVA| Citrclem20787859
104 AHLFKPTYPKSKERLIGPKALFFHMGDYHLRLRKLVQSALSLH--RLRSLVGDVSSLTLS| Linuusit23182042
 98 AHLFKPTYPKSKENLIGPSALFFHQGDYHIRLRKLVQGSLSLD--IIRNLVPHIEAIAVS| Prunpers17651481
102 ANLFKPTYPKSKENLIGQSAIFFHQGDYHNHLRKLVQAPLNPE--SIRNQIPYIEELSIS| Solalyco27279257
102 ANLFKPTYPKSKENLIGQSAIFFHQGDYHNHLRKLVQASLNPE--SIRNQIPYIEELSIS| Solatube24385837
 96 AHLFKPTYPKSKEKLIGPSAIFFHQGKYHTQLRKLVQASLSPE--VIRNMVADVEAVMIS| Eucagran23580902
 99 AHLFKPTYPKSKEKMIGPSALFFHQGDYHSSLRKLIQSSLSPNPNTMQKLVPDIEALAIS| Fragvesc27273641
100 AHLFKPTYPKSKEMMIGPWALFFHQGEYHTRLRKLVQYSLAPD--TIRKLIPDIEHIALS| Gossraim26789996
 99 AHFFKPTYPKSKEKIIGPSALFFHQADYHARLRKLVQSSLSPE--RIKKLIPDIEAIAIS| Camesine18100232
 99 AHLFKPTYPKSKEKMIGPSALFFHQGDYHTRLRKLVQSSLSPE--RIKKLIPDIEAIAIS| Caripapa16424056
 97 AHLFKPTYPKSKERLIGPSALFFHQGDYHNRLRKLVQGSLSPE--AIRNLVADIEALAVS| Vitivini17821893
 97 ANLFKPTYPKSKEHLIGPSALFFHQGDYHMRLRKLVQGSLSLD--ALRNLVADISAIANY| JatrcurcJcr4S00146.120
101 AHLFKPTYPKSKEQLIGPKALFFHMGGYHLRLRKLVQSALSLH--RLRNLVADVSSLTLS| Linuusit23154342
 99 AHLFKPTYPKSKEALIGPSALFFHGDYHFRLRKLVQRSLSPD--AIRNLVPHIDATAAS| Fragvesc27262340
 98 AHLFKPTYPKSKEQIIGPSALFFHEGDYHTKLRKLVQGSLSLE--VLRNLVPDIETIAIS| Aquicoer22041719
 98 AHLFKPTYPKSKERLIGPAALFFHQGDYHTRLRKLVQASLSIE--TIRNLVANIDALAAS| Theocaca27459467
 96 AHLFKPTYPKSKEKLIGPSALFFHQGDYHLRLRKLVQGSLSLF--ALRNLVADISSIAAS| Ricicomm16821717
100 ARLFKPTYPKSKEKMIGPYALFFHQGEYHTRLRKLVQSSLSPD--TIRKLIPGIEDIAVS| Theocaca27461426
      oF+PTYPjSKE @@G  A@FFH . YH  @R+@@j .L      @j  @  @

160 -ALESWAG-GQVINTFHAMKK▼SFDVGILSVFGHLEGNYRDLTKNYCIVDKGYNSFPTN| Vitivini17837849
155 -TLESWAASGQGVNTFYEMKK▼SFDVGILSIFGHMERGFREMLEENYRKVDKGYNSFPTN| Gossraim26801904
157 -ALESCAV-GQVINTFKEMKK▼SFDVGILSIFGNLDDSYREKLKQNYLIVDKGYNSFPSN| Citrclem20812543
157 -ALESWSS-GHIINTFHEMKK▼SFDVGILSIFGHLNSNFRQMLNDNYHIVDKGYNSFPTK| Poputric26988127
156 -ALESWSS-GHIINTYHEMKK▼SFDVGILSIFGHLDSNHREMLSDNYHIVDKGYNSFPTK| Poputric26989962
156 -ALESWAH-GHTINTFHEMKK▼SFQVGILSIFGVLDSNYREKLKENYHIMNKGYNCFPTK| Maniescu17967099
156 -ALESLAD-SRIINTFQEMKK▼SFQVGILSVFGLLDSNYREKLKENYHIMDKGYNSFPTK| Maniescu17990273
158 -ALESWAD-GHIINTFNEMKK▼SFDVGILSIFGHLDSNYREKLDENYHIMNKGYNSFPTK| Ricicomm16809033
158 -ALESWAAGGKVINTYNEMKR▼SFDVGFLAIFGQLDDTYREKLKENYCIVDKGYNSFPTN| Prunpers17650776
156 -TVDSWHG-GHVVNTFHEIKK▼SFEVGILMIFGHLEARYREELKKNYFIVDKGYNSFPTN| Gossraim26769098
154 -TLDSWSE-GHVINTFQEMKK▼SFEVGILAIFGNLESHYREELKKNYRIVDKGYNSFPTS| Maniescu17977346
154 -TLDSWNG-GHVINTFHEMKK▼SFEVGILAFFGHLDSHYREELKKNYRIVDKGYNSFPTS| Maniescu17981266
154 -TLDSWDG-GHVINTFQEMKK▼SFEVGILAIFGNLEAQYREEMKRNYRIVDKGYNSFATS| Poputric27021904
154 -TLDSWDG-GHVLNTFQEMKK▼SFEVGILAIFGNLEAHYREELKRNYRIVDKGYNSFPTS| Poputric27032146
155 -ALDSWHG-GHIINTFQEMKK▼SFEVGTLTIFGHLKDNYKGELKKNYLIVDKGYNSFSTN| Camesine18092678
155 -ALDSWHG-GHIINTFQEMKK▼SFEVGTLTIFGHLDKNYKGELKKNYLIVDKGYNSFSTN| Citrclem20787859
162 -ALDSWHG-GQIVTTYEQLKM▼SFEVGILAIFGHLEEHGYRTELKMNYGIVEKGYNSFPTS| Linuusit23182042
156 -GSDSWGA-GQVINTFHEMKK▼SFQVGILATFGHLAEHYKQELNNNYTIVDKGYNSFPTN| Prunpers17651481
160 -ALNSWVG-GHVVNTYHEMKK▼SFEVGILAIFGHLDGHVKEELKKNYSIVDKGYNSFPIN| Solalyco27279257
160 -ALNSWVG-GHVVNTYHEMKK▼SFEVGILAIFGHLDGHVKEELKKNYSIVDKGYNSFPIN| Solatube24385837
154 -TLDSWVG-GHVVNTFHEMKK▼SFEVGILAIFGHLENHYREKLKKNYHMVDRGYNSFPSI| Eucagran23580902
159 -ALESWAAAGTVINTYHEMKK▼VFDVGFLAIFGHLDDTYREKLKQNYHMVDKGYNCFPTN| Fragvesc27273641
158 -ALDSWAASGQVINTFYEMKK▼SFDVGILSIFGHLDGGYKEKLEENYRIVDKGYNSFPTK| Gossraim26789996
158 -ALESCAV-GQVINTFKEMKK▼SFDVGILSIFGNLDDSYREKLKQNYLIVDKGYNSFPSN| Camesine18100232
157 -ALDSLAG-GLVISTFHEMKK▼SFDVGILSIFGHLDDSYREKLKENYQIVDKGYNSFPTN| Caripapa16424056
155 -ALDSWAG-GHVFNTFHEIKK▼SFEVGILAIFGRLEAHYREELKKNYCIVDRGYNSFPTN| Vitivini17821893
159 -TLNSWDA-GHVIDTFQELKK▼SFEVGILVIFGQLESHYREELKKNYRIVDKGYNSFPTV| JatrcurcJcr4S00146.120
154 -ALDSWHG-GQVVTTYEQLKM▼SFEVGILAIFGHLEEHYRTELKMNYGIVEKGYNSFPTS| Linuusit23154342
166 VTSEWWGT-GKVINTFHEMKK▼SFEVGVLVIFGQLETRYKEELRKNYMAVNKGYNSFPIN| Fragvesc27262340
156 -ALESWAG-GHIINTFHEMKE▼SFDVGILAIFGHLDHTYKEALKKNYCMVDKGYNSFPNT| Aquicoer22041719
166 -ALDTWDG-GHVINTFHEMKK▼SFEVGILFIFGRLEARHREELKKNYFIVDRGYNSFPTN| Theocaca27459467
154 -TLDSWDG-GHVINTFQELKK▼SFEVGILAIFGNLESHYREDLKKNYRIVDKGYNSFPTS| Ricicomm16821717
158 -ALESWAGSGQVINTFYEMKK▼SFNVGILSIFGHLDRGYREKLKENYRIVDKGYNSFPTN| Theocaca27461426
     . _ o   .  o T$  @K o F_VG L  FG @j   +  @  NY  @_+GYN F.

218 IPGTAYSKAIL▼RKRLNQIVREIICERKEKRLVEKDLLGHLLNFKDEKG-QILTEDQIAD| Vitivini17837849
214 IPGTAYQQAIL▼RKRLNRILGEIISSRKEKRLLEKDMLGHFLSFKDEND-EKLSDEQIAD| Gossraim26801904
215 IPGTAYHKALL▼RKRLSQIVSEIICERKEKRLLEKDLLGCLLNSRDEKG-RTLTEDQIAD| Citrclem20812543
215 IPGTAYHKALS▼RKRLNQILSEIICERKEKKLLEKDFLGNLLNFKNEKG-EILTEDQIAD| Poputric26988127
214 IPGTAYHKALL▼RKRLNQILSEIICERKEKRLLEKDFLGHLLNFKNEKG-EILTEDQIAD| Poputric26989962
214 IPGTAYQKALL▼RKRLNQVGEIICERKEKKMAEKDLLGHLLKFKDENG-QILTEDQIAD| Maniescu17967099
214 IPGTAYHKALL▼RKRLDQILGEIICERKEKRLLEKDLLGRFLNFKDENG-QTLSEDQISD| Maniescu17990273
216 IPGTAYQKALL▼RKKLNQILGEIISERKEKRLLEKDLLGRFLNFKDENG-QTLTEDQLAD| Ricicomm16809033
217 IPGTAYHKALL▼RKRLGQILSQIICERKEKKTLQKDLLGDLLNFQDEKG-QILTEDQIAD| Prunpers17650776
214 IPGTPYRKALQ▼RKRLSKILSDIISERKEKKLLEKNLLGRLLNSKAEKG-QILTDDKIAD| Gossraim26769098
212 LPGTSYKKALS▼RKELSKILSDIISERKEKKLLEKNLLGRLLNSKDDVG-QVLTDDQIAD| Maniescu17977346
212 LPGTPYKKALT▼RKRLSKILGDIISERKEKKLLEKDLLGCLLNSKGDKG-QVLTDDQIAD| Maniescu17981266
212 LPGTPYRKAVL▼RKRLSKILGDIIRERKEKRLLVKDLFGCLLNSKNEKG-ELLTDDQIAD| Poputric27021904
212 LPGTPFKKAVL▼RKRLSKILGDIICERKEKRLLEKDLLGCLLNSKDEKG-EVLTDDQIAD| Poputric27032146
213 IPGTPYKKALQ▼RKRLNEILSDIIRERKEKRLHEKDLLGCLLNSKDENG-EVLSDDKIAD| Camesine18092678
213 IPGTPYKKALQ▼RKRLNEILSDIIRERKEKRLHEKDLLGCLLNSKDENG-EVLSDDKIAD| Citrclem20787859
220 VPGSPYKRALT▼RKRLNEILGAIISERKEKKLLEKDLLGCLLNSKDQRG-EELTDDQVAD| Linuusit23182042
218 IPGTLYKKALL▼RKRLREILGDIISERKEKRLHEKDLLGCLLNSKDNKG-EVLTDDQIAD| Prunpers17651481
218 LPGTLYRKALQ▼RKKLGKILSEIIREMKEKKTLEKGLLSCFLNAKEEKGFLVLNEDQIAD| Solalyco27279257
218 LPGSLYRKALQ▼RKKLGKILSEIIREMKEKKVLEKGLLSCFLNAKEEKGLLVLNEDQIAD| Solatube24385837
212 IPGTPYRRALL▼RRDLSKIISGIIADRKEKRIFGKNLLGHLLDSKDENG-ETLTEDQIAD| Eucagran23580902
218 MPGTAYHKALL▼RKRLSQILRQIISERKEKKVLQKDLLGDLLNFQNEKG-QNLSEDQISD| Fragvesc27273641
218 IPGSAHHKALQ▼RKRLNQILSEIIRERKEKRLVEKDLLGHLLNFKDEKG-ETLTEDQIAD| Gossraim26789996
215 IPGTAYHKALL▼RKRLSQIVSEIICERKEKRLLEKDLLGCLLNSRDEKG-RTLTEDQIAD| Camesine18100232
215 IPGTSYHKALL▼RRRLNQILTEIIRGRKEKRLVESDLLGHLLSFQDEGG-KILSDDQIAD| Caripapa16424056
213 IPGTPYKKALW▼RKRLSKILSELIGQRKEKRLADKDLLGSLLNSKDEKG-ETLTNDQIAD| Vitivini17821893
213 LPGTAYKKALT▼RKRLNKILSDIISERKEKKLLEKDLLGCLLNSKDDKG-QVLTDDQIAD| JatrcurcJcr4S00146.120
217 IPASPYKRAIT▼RKRLNEILGDIISERKEKKLLEKDLLGCLLSSKDQKG-EVLTDDQVAD| Linuusit23154342
225 IPGTPYKKALL▼RERLRHIIGDIIHERKEKRLPEKDLLGCLLRSINEGG-EVLSDDQIAD| Fragvesc27262340
214 IPGTLYNKAVL▼RKRLSQLVSEIICDRREKRLDKKDLLGCLMQYKDEKG-QILTDNQIAD| Aquicoer22041719
214 IPGTPYKKALL▼RKRLSKILSDIICKRKEKKLLEKDLLGCLLNYKDEKG-EVLTCDQISD| Theocaca27459467
212 LPGTPYRKALM▼RKRLSKILSDIISQRKEKKLLDNDLLGCLLNSKDEQG-NVLTDDQIAD| Ricicomm16821717
217 IPGTAYHKALL▼RKRLNQILGEIICERKEKGLVEKDLLGHLLNFKDEKG-QTLTEDKIAD| Theocaca27461426
    @P..   jA@ ARjjL j@@  @I    +EK      oo  o@    _     L  _j@.D

277 NIIGVLFAAQDTTASVLTWVLKYLHDNPKLLESVK--▼EQKAIFESNSG-GNR-------| Vitivini17837849
273 NIIGVLFAAQDTTASVITWVLKFLHDDPQLLEAVK--▼EQMAIYDTNNG-GKM-------| Gossraim26801904
274 NIIGVLFAAQDTTASVLTWILKYLHDNPKLLEAVK--▼EQKLVHESNNG-GQR-------| Citrclem20812543
274 NIIGVLFAAQDTTASVLTWILKYLHDNQKLLEDVK--▼EQMAIYEANGR-GEK-------| Poputric26988127
273 NIIGVLFAAQDTTASVLTWILKYLHDDQRLLEAVK--▼EQMEIYEANGR-GKK-------| Poputric26989962
273 NIIGVLFAAHDTTAAALTWILKYLHENRTLLEAVK--▼EQMAIREANIR-GNK-------| Maniescu17967099
273 NIIGVLFAAQDTTATALTWILKYLHDHHKLLEAVK--▼EQMAIYEANGG-GNK-------| Maniescu17990273
275 NIIGVLFAAQDTTASVLTWILKFLYDDQKLLEAVK--▼EQMAIYKVNKG-GK--------| Ricicomm16809033
276 NIIGILFAAQDTTASALTWILKYLHDNPKILEAVK--▼EQKAIFEANDG-CKR-------| Prunpers17650776
273 NIIGTLFAAQDTTASVMTWIVKYLHDNPKLLEAVK--▼EQKAIKILTEE-SNQ-------| Gossraim26769098
271 NIIGTLFAAQDTTASAMTWIVKYLHDNPKLLEAVK--▼EQKAIYKMNDE-GNK-------| Maniescu17977346
271 NVIGALFAAQDTTASALTWIVKYLHDNPKLLEAVK--▼EQKEIYKMNNE-GSQ-------| Maniescu17981266
271 NIIGVFFAAQDTTASAMTWIAKYLHDNQKVLEAVK--▼EQDAIRKLNDE-SNQ-------| Poputric27021904
271 NIIGVLFAAQDTTATAMTWIVKYLHDNQKILEAVK--▼EQNAIRKLNDE-ENQ-------| Poputric27032146
272 NIIGVLFAAQDTTASVMTWIVKYLHDQSETSRGSKGI▼EQKAIRKLNEE-GNQ-------| Camesine18092678
272 NIIGVLFAAQDTTASVMTWIVKYLHDNPKLLEGVK--▼EQKAIRKLNEE-GNQ-------| Citrclem20787859
279 NIIGVLFAAQDTTASAMTWIIKYLHDNPKLLEGVK--▼EQKAIQELNET-DKRSSSSSNE| Linuusit23182042
273 NIIGVLFAAQDTTASVMTWIIKYLHDEPKILEAVK--▼EHDAIRESNEE-GNQ-------| Prunpers17651481
277 NIIGVLFAAQDTTASVLTWILKYLHDNPKLLECVK--▼EQKVIWQSNEQ-ENH-------| Solalyco27279257
278 NIIGVLFAAQDTTASSLTWILKYLHDNPKLLECVK--▼EQKVIWQSNEQ-ENH-------| Solatube24385837
271 NIIGVLFAAQDTTASVMTWILKYLHDNPKLLEGVK--▼EQNTIHRSNDE-GFQ-------| Eucagran23580902
277 NIIGVLFAAQDTTASVLTWILKYLHDNQNILEAVK--▼EQKAICDANDG-GKR-------| Fragvesc27273641
276 NVIGILFAAQDTTASFITWILKFLHDDPKLLEAVK--▼EQKAIYESNNG-GKK-------| Gossraim26789996
274 NIIGVLFAAQDTTASVLTWILKYLHDNPKLLEAVK--▼EQKVVHESNNG-GQR-------| Camesine18100232
274 NIIGVLFAAQDTTASVLTWIIKYLHDDQKLLEAVK--▼EQKAIYESNDR-GRK-------| Caripapa16424056
272 NIIGVLFAAQDTTASSMTWIVKYLHDDPKLLEAVK--▼EQKAINKSNEE-GNR-------| Vitivini17821893
272 NIIGVLFAAQDTTASSLTWVVKYLHDNPKLLEVVK--▼EQKAIYEMNGE-GSQ-------| JatrcurcJcr4S00146.120
274 NVIGVLFAAQDTTASAMTWIIKYLHDNPKLLEGVK--▼EQKAIQELNER-DT--------| Linuusit23154342
284 NIIGVLFAAQDTTASAMTWIFKYLHDEPKILEAVK--▼EQNAIRLSNEQAGNQ-------| Fragvesc27262340
272 NIIGVLFAAQDTTASALTWILKFLHDNSKLLEAVK--▼EQKVIYESNED-GSK-------| Aquicoer22041719
273 NIIGTLFAAQDTTASAMTWIVKYLHDNPKLLETVK--▼EQKAIRRLNEE-GNQ-------| Theocaca27459467
271 NIIGVLFAAQDTTASAMTWIVKHLHDNPKLLEL▼--▼EQKTIYELNDE-GSQ-------| Ricicomm16821717
276 NIIGVLFAAQDTTASVITWILKFLRDDPRLLEAVK--▼EQKAIYDSNDG-GKR-------| Theocaca27461426
    N@@G oFAAjDTTA. @TW@ K L _j     j     AEj  @

327 -PLTWDQTR-NMPLTYR▼ILESLRMASIISFTFREAVVDVEYK▼YLIPKGWKVMPLFRNI| Vitivini17837849
323 -PLTWEQTR-SMPLTHR▼VMESLRMASIISFTFREAVVDVEYN▼YLIPKGWKVMPLFRNI| Gossraim26801904
324 -ALTWAQTR-NMRCTYR▼ILESSMRMASIISFTFREAVCDVEYK▼FLIPKGWKVMPLFRNI| Citrclem20812543
326 -PLTWAQTR-NMPLTYR▼VLESLRMASIISFTFREAIVDVEYH▼YLIPKGWKVLPLFRNI| Poputric26988127
323 -PLTWAQTR-NMPLTYR▼ILESLRMASIISFTFREAVVDVEYN▼YLIPKGWKVLPMFRNI| Poputric26989962
323 -SLTWTQTR-NMPLTFR▼VLESLRMASIIAFVYREAIIDVQYK▼YLIPKGWKVMPLFRNI| Maniescu17967099
323 -SLTWAQTR-NMPLTYR▼VLESLRMASIISFAYREAIIDVEYK▼YLIPKGWKVMPLFRNI| Maniescu17990273
324 -FLTWAQTR-NMPLTHK▼ILESLRMASIISFAFREAIIDVEYK▼YLIPKGWKVMPLFRNI| Ricicomm16809033
326 -PLTWAQTR-NMPLTYR▼VLESLRMASIISFTFREAVVDVEYK▼YLIPKGWKVMPLFRNI| Prunpers17650776
323 -PLSWSHTR-NMPLTYK▼ILETLRMASIISFTFREAVADVEYK▼YLIPKGWKVMPLFRNI| Gossraim26769098
321 -PLTWSQTR-NMPFTNK▼VLESLRMASIISFTFREAVADVEYK▼YLIPKGWKVMPLFRNI| Maniescu17977346
321 -PLSWNQTR-NMPFTHK▼VLESLRMASVISFTFREAVSDVEYK▼YLIPKGWKVMPLFRNI| Maniescu17981266
321 -PLSWSQTR-NMPFTHK▼VLESLRMASIISFTFREAVADVEYK▼YLIPKGWKVMPLFRNI| Poputric27021904
321 -PLSWSQTR-SMPLTHK▼VLESLRMASIISFTFREAVADVEYK▼YLIPKGWKVMPLFRNI| Poputric27032146
324 -PLSWTQTR-NMPVTYK▼VLESLRMASIISFTFREAVADVEYK▼YLIPKGWKVLPLFRNI| Camesine18092678
322 -PLSWTQTR-NMPVTYK▼VLESLRMASIISFTFREAVADVEYK▼YLIPKGWKVLPLFRNI| Citrclem20787859
336 TTVTWSQTRKNMPFTHK▼ILESLRMASIIAFTFREAVTDVKYK▼YLIPKGWKVMPLFRNI| Linuusit23182042
323 -PLSWAQSR-NMPISSK▼VLESLRMASIISFAFREAVVDVEYK▼YLIPKGWKVMPLFRNI| Prunpers17651481
328 -GLTWTQTR-KMPITSK▼VLESLRMASIISFAFREAVADVEYK▼YLIPKGWKVMPLFRNI| Solalyco27279257
328 -GLTWTQTR-KMPITSK▼VLETLRMASIISFAFREAVADVEYK▼YLIPKGWKVMPLFRNI| Solatube24385837
321 -PLSWSQTR-RMPISHK▼VLEALRMASIISFTFREAVADVEYK▼YLIPKGWKVMPLFRNM| Eucagran23580902
321 -SLTWAQIR-NMPLTHK▼VLESLRMASIISFAFREAVVDVEYK▼YLIPKGWKVMPLFRNI| Fragvesc27273641
326 -KLTWAQTR-KMTLTYR▼LLEGLRMASIISFTFREAVVDVEYK▼YLIPKGWKVMPLFRNI| Gossraim26789996
324 -ALTWAQTR-NMRCTYR▼ILESSMRMASIISFTFREAVCDVEYK▼FLIPKGWKVMPLFRNI| Camesine18100232
324 -PLSWAQTR-NMPLTHK▼IMESLRMASIISFTFREAVVDVEYK▼YLIPKGWKVMPLFRNI| Caripapa16424056
322 -PLSWSQTR-NMPVTHK▼ILESLRMASIISFTFREAVADVEFK▼YLIPKGWKVMPLFRNI| Vitivini17821893
322 -PLSWSQTR-SMPFTQK▼VLESLRMASIISFTFREAVADVEYK▼CLIPKGWKVMPLFRNI| JatrcurcJcr4S00146.120
325 -TVTWSQTRTNMHFTHK▼ILESLRMASIIAFTFREAVTDVKYK▼YLIPKGWKVMPLFRNI| Linuusit23154342
335 -PLSWADTR-NMPISYK▼VLESLRLSSIISFLFREAVVDVEYK▼YLIPKGWKVMPLFRNI| Fragvesc27262340
323 -SLTWSQTR-SMILTHK▼ILESLRMSSIISFTFREAVVDVEYK▼YLIPKGWKVMPLFRNI| Aquicoer22041719
323 -PLRWSQTR-DMPVTYK▼VLETLRMASIISFTFREAVADVEYK▼YLIPKGWKVMPLFRNI| Theocaca27459467
321 -PLSWGQTR-NMPLSHK▼VLESLRIASIISFTFREAVADVEYK▼YLIPKGWKVMPLFRNI| Ricicomm16821717
326 -PLTWAQTR-SMPLTYR▼VLESLRMASIISFTFREAVVDVEYK▼YLIPKGWKVMPLFRNI| Theocaca27461426
     @ W j +  M o. + @@E.@R@.S@I.F $REA@ DVj$jGoLIPKGWKV@P@oRN

385 HHNPEFFSDPQNFDPSRFE▼APKPNSFLPFGSGVHACPGNELAKLEILILTHHLVTKF▼W| Vitivini17837849
381 HHNPEFFPNPQEFDPSRFE▼APRANTFMPFGNGVHACPGNELAKLEALILIHHLVTNF▼W| Gossraim26801904
382 HHNSEFFSEPQKVDPSRFK▼APRPNTFVPFGLGVHACPGNELAKLEMLILIHHLVTEF▼W| Citrclem20812543
382 HHNPEFFPDPRIFDPSRFE▼APKPNTFMPFGNGVHACAGNEIAKLEMFVLIHHLVTRF▼W| Poputric26988127
381 HHNPEFFPDPHIFDPSRFE▼APKPNTFMPFGNGVHACPGNEIAKLEILILIHHIVTKF▼W| Poputric26989962
381 HHNSEFFPHPHIFDPSRFE▼SPKPNTFMPFGNGSHACPGNELAKLEMLSLIHHLITKF▼W| Maniescu17967099
381 HHNPEIFTDPHIFDPSRFE▼SPKPNTFIPFGNGVHACPGNELAKLEMLILIHHLVTKF▼W| Maniescu17990273
382 HHNPELFPDPDIFDPSRFE▼PPKPNTFIPFGNGAHACPGNGLAKMEMLIFIHHLVTKF▼W| Ricicomm16809033
384 HHNPEFFSDPQNFDPSRFE▼GPKPNTFMPFGKGVHACPGNELAKLEMLILVHHLVTKF▼W| Prunpers17650776
381 HHNPDFFTDPQKFDPSRFE▼APKPNTFMPFGSGVHACPGNELAKLEMLIVTHHLVSKF▼W| Gossraim26769098
379 HHNPEYFSDPQKFDPSRFE▼APKPNTFMPFGSGVHACPGNELARLEMLIITHHLVTKF▼W| Maniescu17977346
379 HHNPEYFRDPHKFDPSRFE▼PPKPNTFMPFGSGVHVCPGNELAKLEMLIITHHLSTKF▼W| Maniescu17981266
379 HHNPEYFRDPQKFDPTRFE▼APRPNTFMPFGSGQHACPGNELAKLEMFIMIHHLLTKF▼W| Poputric27021904
379 HHNPEYFSDPQKFDPTRFE▼APKPNTYMPFGSGQHACPGNELAKLEILVMIHHLLTKF▼W| Poputric27032146
382 HHNPEYFTDPQKFDPSRFE▼APKPNTFMPFGSGVHSCPGNELAKLEMLVMIHHLVTKF▼W| Camesine18092678
380 HHNPEYFTDPQKFDPSRFE▼APKPNTFMPFGSGVHSCPGNELAKLEMLVMIHHLVTKF▼W| Citrclem20787859
396 HHNPEYFSDPHKFEPSRFE▼AAKANTFMPFGNGVHACPGNELAKLEMLIFIHHLVTKY▼W| Linuusit23182042
381 HHNPEFFADPHKFDPSRLE▼APKPNTFMPFGSGVHACPGNELAKLELLIMMHHLVTKF▼W| Prunpers17651481
386 HHNPEFFPDPQKFDPSRFE▼APKPNTFMPFGSGVHACPGNELAKLEILIMTHHLVTKF▼W| Solalyco27279257
386 HHNPEFFPDPQKIDPSRFE▼APKPNTFMPFGSGVHACPGNELAKLEILIMTHHLVTKF▼W| Solatube24385837
379 HHNPEFFSDPEKFDPSRFE▼TPKPYTFMPFGSGAHACPGNELAKLELLTLIHHVVTKF▼W| Eucagran23580902
385 HHNPEFFSAPQNFDPSRFE▼APKAYTFIPFGKGVHACPGNELAKLEMFILIHHLVTSF▼W| Fragvesc27273641
384 HHNPEFFSDPHDFDPSRFE▼APKPNTFMPFGNGVHACPGNELAKLEALILIHHLVTKF▼W| Gossraim26789996
382 HHNSEFFSEPQKVDPSRFK▼APRPNTFVPFGLGVHACPGNELAKLEMLILIHHLVTEF▼W| Camesine18100232
382 HHSPEFFSDPQKFDPSRFK▼PPKPNTFMPFGNGVHACPGNELAKLEMLILIHHLFTKF▼W| Caripapa16424056
380 HHDPKFFPDPQKFDPSRFE▼APKPNTFVPFGNGVHACPGNELAKLEMLIMTHHLVTKF▼W| Vitivini17821893
380 HHNPEYFSDPHKFDPSRFE▼APKPNTFMPFGSGVHACPGNELAKLEMLIITHHLVTKF▼W| JatrcurcJcr4S00146.120
384 HHNPEYFSDPHKFEPSRFE▼AAKANTFMPFGNGVHACPGNELAKLEMLIFIHHLVTKY▼W| Linuusit23154342
393 HHNPEFFTDPQKFDLSRFE▼APKPNTFMPFGSGVHACPGNELAKLELLIMIHHLVTNF▼W| Fragvesc27262340
381 HHNAEFFSDPDKFDPLRFE▼APKPNTFMPFGNGVHACPGNELAKLEMLILIHHLVTNF▼W| Aquicoer22041719
381 HHNPEFFTDPQKFDPSRFE▼APKPNTFMPFGNGVHACPGNELAKLEMLIMTHHLVSKF▼W| Theocaca27459467
379 HHNPEYFSDSQKFDPSRFE▼APKPNTFMPFGNGVHACPGNELAKLEMLIITHHLVTKF▼W| Ricicomm16821717
384 HHNPEFFSDPHDFDPSRFE▼APKPNTFMPFGNGVHACPGNELAKLEALILIHHLVTKF▼W| Theocaca27461426
    HH .joF  .j o_  Roj ..+. .$@PFG G H C.GN @A+@E o o HH@ . $ W

445 EVVGSQGGIEYGPFPVPQRGLPARFWKLESK------KSAP                   | Vitivini17837849
441 EVVSSESGIQYGPFPVPQQGLPARFWKEPK-------QSRQ                   | Gossraim26801904
442 EVVGSQNGIQYGPFPVPEKGLPARFWRVPC-----------                   | Citrclem20812543
442 EVVGSQNGIQYGPFPVPHQGLPARFWKEPV--------NLE                   | Poputric26988127
441 EVVGSQNGIQYGPFPVPRQGLPARFWR--------------                   | Poputric26989962
441 EVVGSVDGIQYGPFPVPQQGLPARFWPEAT---------SL                   | Maniescu17967099
441 EVVGTVEGVQYGPFPVPQQGLPARFWQESTTLKQDYLPLLH                   | Maniescu17990273
442 EVEGSVDGIQYGPFPVPQQGLPARFWQESN-----------                   | Ricicomm16809033
444 EVEGSQSGIQYGPFPVPRHGLPVRFWEE-------------                   | Prunpers17650776
441 EVVGSESGIQYGPFPVPQQGLPTRFWKEST----------T                   | Gossraim26769098
439 EVVGSEDGIQYGPFPVPLHGLPARFWKESS----------I                   | Maniescu17977346
439 EVVGSQNEIQYGPFPVPYHGLPARFWKEST----------T                   | Maniescu17981266
439 EVVGSQSGIQYGPFPVPLHGLPARFWKEHT----------S                   | Poputric27021904
439 KVVGSQNGIQYGPFPVPLHGLPARFWKEST----------S                   | Poputric27032146
442 EVIGSQSGIQYGPFPIPYQGFPARFSKETK----------S                   | Camesine18092678
440 EVIGSQSGIQYGPFPIPYQGFPARFSKETK----------S                   | Citrclem20787859
456 EVVGDESGTQNCPFPVPMNGLPARFWNTTTPSS----QHLN                   | Linuusit23182042
441 EVVGSQNEIQYSPFPVPIHGLPAKFWKKST----------C                   | Prunpers17651481
446 EVVGSGSGIQYGPFPVPLGGLAARFWKTTS----------T                   | Solalyco27279257
446 EVVGSGSGIQYGPFPVPLGGLAARFWKESN-----------                   | Solatube24385837
439 EVIGSQNGVQYSPFPVPLHGLPARFWKLPS-----------                   | Eucagran23580902
445 EVVGSQSGIQYGPFPVPQHGLPARFLKEQVNPKQDF-PTTS                   | Fragvesc27273641
444 EVVGSESGIQYGPFPVPQQGLPARFWKQSS--------CPS                   | Gossraim26789996
442 EVVGSQNGIQYGPFPVPEKGLPARFWRVPC-----------                   | Camesine18100232
442 EMVGSQYGIQYGPFPVPQQGLLAQFWKESSCLIQDF-VSSN                   | Caripapa16424056
440 EVAGFQSGIQYGPFPVPVNGLPARLWKQST----------T                   | Vitivini17821893
440 ELVGSENGIQYGPFPVPIHGLPARFWKEST--------TKL                   | JatrcurcJcr4S00146.120
444 EVVGDESGTQNCPFPVPMNGLPARFWKQQH-----------                   | Linuusit23154342
453 EIEGSQSGTEYSPFPVPLNGLPVKLWKLE------------                   | Fragvesc27262340
441 EVVGSQNGIQYSPFPVPQNGLPARFWNQTVSNQRQ--QECA                   | Aquicoer22041719
441 EVVGSQSGSQYGPFPVPLQGLPTRFWKEST----------R                   | Theocaca27459467
439 EVVGSQNGIQYGPFPVPVHGLPARFWREST---------SC                   | Ricicomm16821717
444 EVVGSQSGIQYGPFPVPQQGLPTRFWKDSS----------R                   | Theocaca27461426
    j@ .     _  PFP@P  Go  jo
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Fig. S1F: An example of GSA-MPSA

▼phase0 ▼phase1 ▼phase2

(before)

>RBP_M50_org.1098 [34:271] (1 - 271)

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  1 M-----------------------------------------------------------| Cucusati16964763
  1 M-----------------------------------------------------------| Linuusit23164750
  1 M-----------------------------------------------------------| Linuusit23173241
  1 M-----------------------------------------------------------| Maniescu17963527
  1 M-----------------------------------------------------------| Gossraim26770260
  1 M-----------------------------------------------------------| Gossraim26812530
  1 M-----------------------------------------------------------| Theocaca27425661
  1 M-----------------------------------------------------------| Poputric26989553
  1 M-----------------------------------------------------------| Ricicomm16798235
  1 M-----------------------------------------------------------| Caripapa16407497
  1 M-----------------------------------------------------------| Glycmax_26329428
  1 M-----------------------------------------------------------| Glycmax_26342072
  1 M-----------------------------------------------------------| Phasvulg27147614
  1 M-----------------------------------------------------------| Camesine18106834
  1 M-----------------------------------------------------------| Citrclem20797549
  1 M-----------------------------------------------------------| Eucagran23572882
  1 MTGDRPTTVSGLAEGQRRSGKVVGPRWPVALRGRNGEWKRNHSVNPRTLISRASTFNPGR| Eucagran23572887
  1 M-----------------------------------------------------------| Prunpers17661985
  1 M-----------------------------------------------------------| Vitivini17825983
  1 MRYSSTRNASLSRTISVTPLISHQFLPSCRIIALHTIRLTEFNIPTPFLSRQSLNPSDTE| Fragvesc27244095
  1 M-----------------------------------------------------------| Aquicoer22041023
  1 M-----------------------------------------------------------| Solalyco27292505
  1 ------------------------------------------------------------| Solatube24417190
  1 M-----------------------------------------------------------| Meditrun23014575
  1 M-----------------------------------------------------------| Meditrun23029677
  1 MHVDKKRINPTPPHPQIAKPSSTTGSQGGVHSRYTRPGLHIPTHTVGGERERERERERER| Mimugutt17684079
  1 M-----------------------------------------------------------| Arablyra16038559
  1 M-----------------------------------------------------------| Arablyra16056998
  1 M-----------------------------------------------------------| Arabthal19667250
  1 M-----------------------------------------------------------| Thelhalo20204239
  1 M-----------------------------------------------------------| Capsrube20914084
  1 M-----------------------------------------------------------| Brasrapa22687887
  1 M-----------------------------------------------------------| Brasrapa22694490
  1 MG----------------------------------------------------------| Physpate18069836
    @
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```
  2 -----------------------------VVRIRLSRFGCKNKPFYRVMAADSRSPRDGK| Cucusati16964763
  2 -----------------------------VVRIRLSRFGCKNKPFYRVMAADSRSPRDGK| Linuusit23164750
  2 -----------------------------VVRIRLSRFGCKNKPFYRVMAADSRSPRDGK| Linuusit23173241
  2 -----------------------------VVRIRLSRFGCKNKPFYRVMAADSRSPRDGK| Maniescu17963527
  2 -----------------------------VVRIRLSRFGCKNKPFYRVMAANSRSPRDGK| Gossraim26770260
  2 -----------------------------VVRIRLSRFGCKNKPFYRVMAANSRSPRDGK| Gossraim26812530
  2 -----------------------------VVRIRLSRFGCKNKPFYRVMAANSRSPRDGK| Theocaca27425661
  2 -----------------------------VVRIRLSRFGCSNKPFYRVMAADSRSPRDGK| Poputric26989553
  2 -----------------------------VVRLRLSRFGCKNRPFYRVMAANSRSPRDGK| Ricicomm16798235
  2 -----------------------------VVRIRLSRFGCKNKPFYRVMAADSRSPRDGK| Caripapa16407497
  2 -----------------------------VVRIRLSRLGCKNKPFYRVMAADSRSPRDGK| Glycmax_26329428
  2 -----------------------------VVRIRLSRLGCKNKPFYRVMAADSRSPRDGK| Glycmax_26342072
  2 -----------------------------VVRIRLSRLGCKNKPFYRVMAADSRSPRDGK| Phasvulg27147614
  2 -----------------------------VVRIRLARFGCKNKPFYRVMAADSRSPRDGK| Camesine18106834
  2 -----------------------------VVRIRLARFGCKNKPFYRVMAADSRSPRDGK| Citrclem20797549
  2 -----------------------------VVRIRLARFGCKNRPFYRVMAADSRSPRDGK| Eucagran23572882
 61 ATATAAQFALLAKRSKGGGGGGGGEGKKMVVRIRLARFGCKNRPFYRVMAADSRSPRDGK| Eucagran23572887
  2 -----------------------------VVRIRLARFGCKNRPFYRVMAADSRSPRDGK| Prunpers17661985
  2 -----------------------------VVRIRLSRFGCKNRPFYRVMAADSRSPRDGK| Vitivini17825983
 61 IEWFNLLGRGVKM----------------VVRIRLARFGCKNRPFYRVMAADSRSPRDGK| Fragvesc27244095
  2 -----------------------------VVRLRLSRFGCKNKPFYRLMAANSRSPRDGK| Aquicoer22041023
  2 -----------------------------VVRLRLSRFGCKNKPFYRVMAADSRSPRDGK| Solalyco27292505
  1 -----------------------------------------------MAADSRSPRDGK| Solatube24417190
  2 -----------------------------VVRIRLSRLGCKNKPFYRVMAADSRSPRDGK| Meditrun23014575
  2 -----------------------------VVRIRLSCLGCKNKPFYRVMASDSRSPRDGK| Meditrun23029677
 61 ERERRKREKM-------------------VVRLRLSRLGCRNKPFYRVMAADSRSPRDGK| Mimugutt17684079
  2 -----------------------------VVRIRLSRFGCKNRPFFRVMAADSRSPRDGK| Arablyra16038559
  2 -----------------------------VVRIRLSRFGCKNRPFFRVMAADSRSPRDGK| Arablyra16056998
  2 -----------------------------VVRIRLSRFGCKNRPFFRVMAADSRSPRDGK| Arabthal19667250
  2 -----------------------------VVRLRLSRLGCKNRPFFRVMAADSRSPRDGK| Thelhalo20204239
  2 -----------------------------VVRIRLSRFGCKNRPFFRVMAADSRSPRDGK| Capsrube20914084
  2 -----------------------------VVRLRLSRLGCKNRPFFRVMAADSRSPRDGK| Brasrapa22687887
  2 -----------------------------VVRLRLSRLGCKNRPFFRVMAADSRSPRDGK| Brasrapa22694490
  3 -----------------------------MVRIRLARFGRKNLPFYRIFVADSRSPRDGK| Physpate18069836
                                 @@+@+@. o.  _ .$$+@o ._SRSPRDGK
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 33 HLEILGYYNPLPGQDGGKRMGLNFERVKYWLSVGAQPSDPVQRILFRSGLLPPPPMVAMG| Cucusati16964763
 33 HLEVLGYYNPLPGQDGGKRMGLNFERVKYWLSVGAQASDPVQRILFRAGVLPPPPMVAMG| Linuusit23164750
 33 HLEVLGYYNPLPGQDGGKRMGLNFERVKYWLSVGAQASDPVQRILFRAGVLPPPPMLAMG| Linuusit23173241
 33 HLEVLGYYNPLPGQDGGKRMGLNFERVKYWLSVGAQPSDPVQRILFRAGLLPAPPMVAIG| Maniescu17963527
 33 HLEVLGYYNPLPGQDGGKRMGLNFERVKYWLSVGAQPSEPVQRILFRAGVLPPPPMVAMG| Gossraim26770260
 33 HLEVLGYYNPLPGQDGGKRMGLNFERVKYWLSVGAQPSEPVQRILFRAGVLPPPPMVAMG| Gossraim26812530
 33 HLEVLGYYNPLPGQDGGKRMGLNFERVKYWLSVGAQPSEPVQRILFRAGLLPPPPMVAMG| Theocaca27425661
 33 HLEVLGYYNPLPGQDGGKRMGLNFERVKYWLSVGAQPSEPVQRILFRAGVLPPPPMMVMG| Poputric26989553
 33 HLEVLGYYNPLPGQDGGKRMGLNFERVKE-------------------GLLEIMGLGIIN| Ricicomm16798235
 33 HLEVLGYYNPLPGQDGGKRMGLNFDRVKYWLSVGAQPSEPVQRLLFRSGLLPPPPMVAMG| Caripapa16407497
 33 HLEVLGYYNPLPGQDGGKRMGLNFDRVKYWLSVGAQPSEPVERLLFRAGMLPPPPMVAMG| Glycmax_26329428
 33 HLEVLGYYNPLPGQDGGKRMGLNFDRVKYWLSVGAQPSEPVERLLFRAGMLPPPPMVAMG| Glycmax_26342072
 33 HLEVLGYYNPLPGQDGGKRMGLNFERVKYWLSVGAQPSEPVERLLFRAGVLPPPPMVAMG| Phasvulg27147614
 33 HLEVLGYYNPLPGQDSGKRMGLNFDRVKYWLSVGAQPSDPVQRILFRAGLLPPPPMVAMG| Camesine18106834
 33 HLEVLGYYNPLPGQDSGKRMGLNFDRVKYWLSVGAQPSDPVQRILFRAGLLPPPPMVAMG| Citrclem20797549
 33 HLEVLGYYNPLPGQDGGKRMGLKFDRVKYWLSVGAQPSDPVQRILFRAGLLPPPPMVAMG| Eucagran23572882
121 HLEVLGYYNPLPGQDGGKRMGLKFDRVKYWLSVGAQPSDPVQRILFRAGLLPPPPMVAMG| Eucagran23572887
 33 HLEVLGYYNPLPGQDGGKRMGLNFERVKYWLSVGAQPSDPVQRILFRAGLLPPPPMVAMG| Prunpers17661985
 33 HLEVLGYYNPLPGQDGGKRMGLNFDRVKYWLSVGAQPSDPVQQILFRAGLLPPPPMVAMG| Vitivini17825983
105 HLEVLGYYNPLPGQDGGKRMGLNFDRVKYWLSVGAQPSDPVQRILFRAGMLPPTPMMAMA| Fragvesc27244095
 33 HLEVLGYYNPLPGQDGGKRMGLNFDRVKYWLSVGAQPSEPVQRILFRAGVLPPPPMLAME| Aquicoer22041023
 33 HLEVLGYYNPLPGQDGGKRMGLNFDRLKYWLSVGAQPSDPVQRLLFRAGVLPPPPMLAMG| Solalyco27292505
 13 HLEVLGYYNPLPGQDGGKRMGLNFDRLKYWLSVGAQPSEPVQRLLFRAGVLPPPPMLAMG| Solatube24417190
 33 HLEVLGYYNPLPGQDGGKRMGINFDRVKYWLSVGAQPSNPVERLLFRAGLLPPPPTVAMA| Meditrun23014575
 33 HLEVLGYYNPLPGQDGGKRMGINFDRVKYWLSVGAQPSNPVERLLFRAGLLPPPPTVAMA| Meditrun23029677
102 HLEVLGYYNPLPGQDGGKRMGINFDRVKYWLSVGAQPSDPVQRLLFRAGMLPPPPMLAMG| Mimugutt17684079
 33 HLEVLGYFNPLPGQDGGKRMGLKFDRIKYWLSVGAQPSDPVQRLLFRSGLLPPPPMVAMG| Arablyra16038559
 33 HLEVLGYFNPLPGQDGGKRMGLKFDRIKYWLSVGAQPSDPVQRLLFRSGLLPPPPMVAMG| Arablyra16056998
 33 HLEVLGYFNPLPGQDGGKRMGLKFDRIKYWLSVGAQPSDPVQRLLFRSGLLPPPPMVAMG| Arabthal19667250
 33 HLEVLGYFNPLPGQDGGKRMGLKFDRIKYWLSVGAQPSDPVQRLLFRSGLLPPPPMVAMG| Thelhalo20204239
 33 HLEVLGYFNPLPGQDGGKRMGLKFDRIKYWLSVGAQPSDPVQRLLFRSGLLPPPPMLAMG| Capsrube20914084
 33 HIEVLGYFNPLPGQDGGKRMGLKFDRIKYWLSVGAQASDPVQRLLFRSGLLPPPPMVAMG| Brasrapa22687887
 33 HIEVLGYFNPLPGQDGGKRMGLKFDRIKYWLSVGAQASDPVQRLLFRSGLLPPPPMVAMG| Brasrapa22694490
 34 HLEVVGHYNPLPGKDGMKRIGVNSDRIKYWLSVGAQPSDTVRRLLNKAGILPAPPVPHMP| Physpate18069836
    H@E@@G $NPLPGjD. KR@G@j _R@K $@.@.._.._.@jj@@ +.G@L   .   @
```

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 93 RKGGPRDTRPVDPLSGRFVTP--A-KKPTDGSNGEADS---------------------| Cucusati16964763
 93 RKGGPRDTRPVDPLTGRVLNQ--E-KAATGTESTTSDDAAVVST----------------| Linuusit23164750
 93 RKGGPRDTRPVDPLTGKVLNQ--E-KAVTGGTQSTSDDAAPVST----------------| Linuusit23173241
 93 RKGGPRDTRPVDPMTGRILDS--E-KMSNATKSNASESANGAGATT--------------| Maniescu17963527
 93 RKGGPRDTRPVDPMTGRVLNE--E-KPIAGNQEKSGEDEAVDESNY--------------| Gossraim26770260
 93 LKGGPRDMRPVDPMTGRVLNE--E-KPVAGNQEKSGNDEAVDEPNS--------------| Gossraim26812530
 93 RKGGPRDMRPVDPMRGRVLSA--E-KPATASQQNGGKDEAANGATS--------------| Theocaca27425661
 93 RKGGPRDTRPVDPMTGRFLSP--E-KSPSSSQSNASKNDTEAATTT--------------| Poputric26989553
 74 DEGKGWN----------------------------------------------------| Ricicomm16798235
 93 RKGGPRDTRPVHPMTGCILDT--A-IPANHKEPEGQADDDANTGTSYHLVWDTGKEFSFW| Caripapa16407497
 93 RKGGPRDTRPVDALTGRVLNQ--E-KAANANNNEQQHDTPENP-----------------| Glycmax_26329428
 93 RKGGPRDTRPVDALTGRVLHQ--E-KPADANNTEQQHDTPENP-----------------| Glycmax_26342072
 93 RKGGVRDTRPVDALTGRVLNQ--E-KPANEKNNDQEHEAAENPF----------------| Phasvulg27147614
 93 RKGGPRDTRPVDPMTGRVL----E-KPTNAKQIKADDICSHMNGLDLAFVFMHCTSSSIL| Camesine18106834
 93 RKGGPRDTRPVDPMTGRVL----E-KPTNAKQIKADGMEGEAAP----------------| Citrclem20797549
 93 RKGGPRDTRPVDPLTGRVISP--E-KQLFPAKQMNPPPKMQMLEAARLP-----------| Eucagran23572882
181 RKGGPRDTRPVDPLTGRVISP--E-KQAVPSKADESTPEDANA-----------------| Eucagran23572887
 93 RKGGPRDTRPVDPLSGRILSP--E-KPANGDQVKDAESTENGQRGLQETILHIGLQDKQL| Prunpers17661985
 93 RKGGHRDTRPVDPLTGRILTP--N-KPTDVEQPKDDEDGNEDSPST--------------| Vitivini17825983
165 RKGGPRDTRPVDPMSGRILAT--E-KPASDDQAKDAAIGEEKEAGTAEVND---------| Fragvesc27244095
 93 RKGGPRDTRSIDPLSGKFVSP--K-QPSDAVQSESTEGAEENEAAN--------------| Aquicoer22041023
 93 QKGGPRDTRLVDPMTGRITTP--E-STKSAVPTVGSEVDEDKD-----------------| Solalyco27292505
 73 QKGGPRDTRLVDPMTGRITTP--E-SAKSANPTVGSEVEEDKD-----------------| Solatube24417190
 93 RKGGPRDMRPVDALTGRIIGQ--Q-KPPSSNNSDTAVIEN--------------------| Meditrun23014575
 93 RKGGPRDMSPVDALTGRIIGQ--Q-KPPNSNNSGTAVTEN--------------------| Meditrun23029677
162 RKGGPRDMTPVHPMTGRIFAQVKQ-ETVVGSEEDPKVDEEDDETSA--------------| Mimugutt17684079
 93 RKGGARDTRPVDPMTGRYVDA--ENKTVNASDNQPKEEDTED--KS--------------| Arablyra16038559
 93 RKGGARDTRPVDPMTGRYVDA--ENKTVNASDNQPKEEDTED--KS--------------| Arablyra16056998
 93 RKGGARDTRPVDPMTGRYVDA--ENKTVNANDNQPKEEDTEA--KS--------------| Arabthal19667250
 93 RKGGARDTRPVDPMTGRYVDA--E-KKPPVIDNQPKEEDNAED-KS--------------| Thelhalo20204239
 93 RKGGPRDNRPVDPMTGRYVDA--E-KKP-VTDNQPKEEED----KS--------------| Capsrube20914084
 93 RKGGERDTRPVDPMTGRFVDA--EKKTPVIIDNQPKEEDNAQD-KS--------------| Brasrapa22687887
 93 RKGGERDTRPVDPMTGRYVDA--E-KTPAISDNKPKEED-----KS--------------| Brasrapa22694490
 94 KKG---------------------------------------PN--------------| Physpate18069836
     jG   _   @j.@ . o
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128 ------------------------------                               | Cucusati16964763
134 ------------------------------S                              | Linuusit23164750
134 ------------------------------S                              | Linuusit23173241
136 ------------------------------T                              | Maniescu17963527
136 ------------------------------A                              | Gossraim26770260
136 ------------------------------A                              | Gossraim26812530
136 ------------------------------A                              | Theocaca27425661
136 ------------------------------T                              | Poputric26989553
 81 ------------------------------                               | Ricicomm16798235
150 NDSSSEPNSQKAWPRINLGASLTQ------K                              | Caripapa16407497
133 ------------------------------                               | Glycmax_26329428
133 ------------------------------                               | Glycmax_26342072
134 ------------------------------                               | Phasvulg27147614
148 KLQHMPVQGSNEIHICQIKSKEYIQMVSGHF                              | Camesine18106834
132 ------------------------------                               | Citrclem20797549
139 ------------------------------S                              | Eucagran23572882
221 ------------------------------                               | Eucagran23572887
150 GVGQ--------------------------F                              | Prunpers17661985
136 ------------------------------P                              | Vitivini17825983
213 ------------------------------G                              | Fragvesc27244095
136 ------------------------------T                              | Aquicoer22041023
133 ------------------------------                               | Solalyco27292505
113 ------------------------------                               | Solatube24417190
130 ------------------------------P                              | Meditrun23014575
130 ------------------------------P                              | Meditrun23029677
207 ------------------------------S                              | Mimugutt17684079
135 ------------------------------A                              | Arablyra16038559
135 ------------------------------A                              | Arablyra16056998
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135 ------------------------------P                              | Thelhalo20204239
131 ------------------------------A                              | Capsrube20914084
136 ------------------------------P                              | Brasrapa22687887
131 ------------------------------P                              | Brasrapa22694490
 99 ------------------------------P                              | Physpate18069836
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(after)

> RBP_M50_trd.1098 [34:143] (1 - 143)

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  1 M-VVRIRLSRFGCKNKPFYRVMAADSRSPRDGKHLEVLGYYNPLPGQDGGKRMGLNFERV| Linuusit23164750
  1 M-VVRIRLSRFGCKNKPFYRVMAADSRSPRDGKHLEVLGYYNPLPGQDGGKRMGLNFERV| Linuusit23173241
  1 M-VVRIRLSRFGCKNKPFYRVMAADSRSPRDGKHLEVLGYYNPLPGQDGGKRMGLNFERV| Maniescu17963527
  1 M-VVRIRLSRFGCKNKPFYRVMAANSRSPRDGKHLEVLGYYNPLPGQDGGKRMGLNFERV| Gossraim26770260
  1 M-VVRIRLSRFGCKNKPFYRVMAANSRSPRDGKHLEVLGYYNPLPGQDGGKRMGLNFERV| Gossraim26812530
  1 M-VVRIRLSRFGCKNKPFYRVMAANSRSPRDGKHLEVLGYYNPLPGQDGGKRMGLNFERV| Theocaca27425661
  1 M-VVRIRLSRFGCSNKPFYRVMAADSRSPRDGKHLEVLGYYNPLPGQDGGKRMGLNFERV| Poputric26989553
  1 M-VVRIRLSRLGCKNKPFYRVMAADSRSPRDGKHLEVLGYYNPLPGQDGGKRMGLNFDRV| Glycmax_26329428
  1 M-VVRIRLSRLGCKNKPFYRVMAADSRSPRDGKHLEVLGYYNPLPGQDGGKRMGLNFDRV| Glycmax_26342072
  1 M-VVRIRLSRLGCKNKPFYRVMAADSRSPRDGKHLEVLGYYNPLPGQDGGKRMGLNFERV| Phasvulg27147614
  1 M-VVRIRLARFGCKNKPFYRVMAADSRSPRDGKHLEVLGYYNPLPGQDSGKRMGLNFDRV| Citrclem20797549
  1 M-VVRIRLARFGCKNRPFYRVMAADSRSPRDGKHLEVLGYYNPLPGQDGGKRMGLKFDRV| Eucagran23572882
  1 M-VVRIRLSRFGCKNRPFYRVMAADSRSPRDGKHLEVLGYYNPLPGQDGGKRMGLNFDRV| Vitivini17825983
  1 M-VVRLRLSRFGCKNKPFYRLMAANSRSPRDGKHLEVLGYYNPLPGQDGGKRMGLNFDRV| Aquicoer22041023
  1 M-VVRLRLSRFGCKNKPFYRVMAADSRSPRDGKHLEVLGYYNPLPGQDGGKRMGLNFDRL| Solalyco27292505
  1 M-VVRIRLSRLGCKNKPFYRVMAADSRSPRDGKHLEVLGYYNPLPGQDGGKRMGINFDRV| Meditrun23014575
  1 M-VVRIRLSCLGCKNKPFYRVMASDSRSPRDGKHLEVLGYYNPLPGQDGGKRMGINFDRV| Meditrun23029677
  1 M-VVRIRLSRFGCKNRPFFRVMAADSRSPRDGKHLEVLGYFNPLPGQDGGKRMGLKFDRI| Arablyra16038559
  1 M-VVRIRLSRFGCKNRPFFRVMAADSRSPRDGKHLEVLGYFNPLPGQDGGKRMGLKFDRI| Arablyra16056998
  1 M-VVRIRLSRFGCKNRPFFRVMAADSRSPRDGKHLEVLGYFNPLPGQDGGKRMGLKFDRI| Arabthal19667250
  1 M-VVRLRLSRLGCKNRPFFRVMAADSRSPRDGKHLEVLGYFNPLPGQDGGKRMGLKFDRI| Thelhalo20204239
  1 M-VVRIRLSRFGCKNRPFFRVMAADSRSPRDGKHLEVLGYFNPLPGQDGGKRMGLKFDRI| Capsrube20914084
  1 M-VVRLRLSRLGCKNRPFFRVMAADSRSPRDGKHIEVLGYFNPLPGQDGGKRMGLKFDRI| Brasrapa22687887
  1 M-VVRLRLSRLGCKNRPFFRVMAADSRSPRDGKHIEVLGYFNPLPGQDGGKRMGLKFDRI| Brasrapa22694490
  1 M-VVRIRLSRFGCKNKPFYRVMAADSRSPRDGKHLEVLGYYNPLPGQDGGKRMGLNFDRV| Caripapa16407497
  1 M-VVRIRLARFGCKNKPFYRVMAADSRSPRDGKHLEVLGYYNPLPGQDSGKRMGLNFDRV| Camesine18106834
  1 M-VVRIRLARFGCKNRPFYRVMAADSRSPRDGKHLEVLGYYNPLPGQDGGKRMGLNFERV| Prunpers17661985
  1 M-VVRIRLARFGCKNRPFYRVMAADSRSPRDGKHLEVLGYYNPLPGQDGGKRMGLNFDRV| Fragvesc27244095
  1 M-VVRLRLSRFGCKNKPFYRVMAADSRSPRDGKHLEVLGYYNPLPGQDGGKRMGLNFDRL| Solatube24417190
  1 M-VVRLRLSRLGCRNKPFYRVMAADSRSPRDGKHLEVLGYYNPLPGQDGGKRMGINFDRV| Mimugutt17684079
  1 MGMVRIRLARFGRKNLPFYRIFVADSRSPRDGKHLEVVGHYNPLPGKDGMKRIGVNSDRI| Physpate18069836
  1 M-VVRIRLARFGCKNRPFYRVMAADSRSPRDGKHLEVLGYYNPLPGQDGGKRMGLKFDRV| Eucagran23572887
  1 M-VVRLRLSRFGCKNRPFYRVMAANSRSPRDGKHLEVLGYYNPLPGQDGGKRMGLNFERV| Ricicomm16798235
    M @VR@RL. oG  N PF$R@o ._SRSPRDGKH@E@@G $NPLPGjD. KR@G@j _R@
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 60 KYWLSVGAQPSDPVQRILFRSGLLPPPPMVAMGRKGGPRDTRPVDPLSGRFVTPA-KKPT| Cucusati16964763
 60 KYWLSVGAQASDPVQRILFRAGVLPPPPMVAMGRKGGPRDTRPVDPLTGRVLNQE-KAAT| Linuusit23164750
 60 KYWLSVGAQASDPVQRILFRAGVLPPPPMLAMGRKGGPRDTRPVDPLTGKVLNQE-KAVT| Linuusit23173241
 60 KYWLSVGAQPSDPVQRILFRAGLLPAPPMVAIGRKGGPRDTRPVDPMTGRILDSE-KMSN| Maniescu17963527
 60 KYWLSVGAQPSEPVQRILFRAGVLPPPPMVAMGRKGGPRDTRPVDPMTGRVLNEE-KPIA| Gossraim26770260
 60 KYWLSVGAQPSEPVQRILFRAGVLPPPPMVAMGLKGGPRDMRPVDPMTGRVLNEE-KPVA| Gossraim26812530
 60 KYWLSVGAQPSEPVQRILFRAGLLPPPPMVAMGRKGGPRDMRPVDPMRGRVLSAE-KPAT| Theocaca27425661
 60 KYWLSVGAQPSEPVQRILFRAGVLPPPPMMVMGRKGGPRDTRPVDPMTGRFLSPE-KSPS| Poputric26989553
 60 KYWLSVGAQPSEPVERLLFRAGMLPPPPMVAMGRKGGPRDTRPVDALTGRVLNQE-KAAN| Glycmax_26329428
 60 KYWLSVGAQPSEPVERLLFRAGMLPPPPMVAMGRKGGPRDTRPVDALTGRVLHQE-KPAD| Glycmax_26342072
 60 KYWLSVGAQPSEPVERLLFRAGVLPPPPMVAMGRKGGVRDTRPVDALTGRVLNQE-KPAN| Phasvulg27147614
 60 KYWLSVGAQPSDPVQRILFRAGLLPPPPMVAMGRKGGPRDTRPVDPMTGRVL--E-KPTN| Citrclem20797549
 60 KYWLSVGAQPSDPVQRILFRAGLLPPPPMVAMGRKGGPRDTRPVDPLTGRVISPE-KQLF| Eucagran23572882
 60 KYWLSVGAQPSDPVQQILFRAGLLPPPPMVAMGRKGGHRDTRPVDPLTGRILTPN-KPTD| Vitivini17825983
 60 KYWLSVGAQPSEPVQRILFRAGVLPPPPMLAMERKGGPRDTRSIDPLSGKFVSPK-QPSD| Aquicoer22041023
 60 KYWLSVGAQPSDPVQRLLFRAGVLPPPPMLAMGQKGGPRDTRLVDPMTGRITTPE-STKS| Solalyco27292505
 60 KYWLSVGAQPSNPVERLLFRAGLLPPPPTVAMARKGGPRDMRPVDALTGRIIGQQ-KPPS| Meditrun23014575
 60 KYWLSVGAQPSNPVERLLFRAGLLPPPPTVAMARKGGPRDMSPVDALTGRIIGQQ-KPPN| Meditrun23029677
 60 KYWLSVGAQPSDPVQRLLFRSGLLPPPPMVAMGRKGGARDTRPVDPMTGRYVDAENKTVN| Arablyra16038559
 60 KYWLSVGAQPSDPVQRLLFRSGLLPPPPMVAMGRKGGARDTRPVDPMTGRYVDAENKTVN| Arablyra16056998
 60 KYWLSVGAQPSDPVQRLLFRSGLLPPPPMVAMGRKGGARDTRPVDPMTGRYVDAENKTVN| Arabthal19667250
 60 KYWLSVGAQPSDPVQRLLFRSGLLPPPPMVAMGRKGGARDTRPVDPMTGRYVDAE-KKPP| Thelhalo20204239
 60 KYWLSVGAQPSDPVQRLLFRSGLLPPPPMLAMGRKGGPRDNRPVDPMTGRYVDAE-KKP-| Capsrube20914084
 60 KYWLSVGAQASDPVQRLLFRSGLLPPPPMVAMGRKGGERDTRPVDPMTGRFVDAEKKTPV| Brasrapa22687887
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 60 KYWLSVGAQPSDPVQRILFRAGLLPPPPMVAMGRKGGPRDTRPVDPLSGRILSPE-KPAN| Prunpers17661985
 60 KYWLSVGAQPSDPVQRILFRAGMLPPTPMMAMARKGGPRDTRPVDPMSGRILATE-KPAS| Fragvesc27244095
 60 KYWLSVGAQPSEPVQRLLFRAGVLPPPPMLAMGQKGGPRDTRLVDPMTGRITTPE-SAKS| Solatube24417190
 60 KYWLSVGAQPSDPVQRLLFRAGMLPPPPMLAMGRKGGPRDMTPVHPMTGRIFAQV-KQET| Mimugutt17684079
 61 KYWLSVGAQPSDTVRRLLNKAGILPAPPVPHMPKKGPHFLDQKMSDILGRPIRYR-HKPH| Physpate18069836
 60 KYWLSVGAQPSDPVQRILFRAGLLPPPPMVAMGRKGGPRDTRPVDPLTGRVISPE-KQAV| Eucagran23572887
 60 KRDLY-----TYVVCTLL-----LTGITVACSSRKPP----------------------| Ricicomm16798235
    K  L @.._..  V  @L +..@L.. .      K..      @  @ .
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119 GGTQSTSDDAAPVST-------S                                      | Linuusit23173241
119 ATKSNASESANGAGATT-----T                                      | Maniescu17963527
119 GNQEKSGEDEAVDESNY-----A                                      | Gossraim26770260
119 GNQEKSGNDEAVDEPNS-----A                                      | Gossraim26812530
119 ASQQNGGKDEAANGATS-----A                                      | Theocaca27425661
119 SSQSNASKNDTEAATTT-----T                                      | Poputric26989553
119 ANNNEQQHDTPENP---------                                      | Glycmax_26329428
119 ANNTEQQHDTPENP---------                                      | Glycmax_26342072
119 EKNNDQEHEAAENP--------F                                      | Phasvulg27147614
117 AKQIKADGMEGEAA--------P                                      | Citrclem20797549
119 PAKQMNPPPKMQMLEAAR--LPS                                      | Eucagran23572882
119 VEQPKDDEDGNEDSPST-----P                                      | Vitivini17825983
119 AVQSESTEGAEENEAAN-----T                                      | Aquicoer22041023
119 AVPTVGSEVDEDKD---------                                      | Solalyco27292505
119 SNNSDTAVIENP-----------                                      | Meditrun23014575
119 SNNSGTAVTENP-----------                                      | Meditrun23029677
120 ASDNQPKEED-TEDKS------A                                      | Arablyra16038559
120 ASDNQPKEED-TEDKS------A                                      | Arablyra16056998
120 ANDNQPKEED-TEAKS------A                                      | Arabthal19667250
119 VIDNQPKEEDNAEDKS------P                                      | Thelhalo20204239
118 VTDNQPKEEE---DKS------A                                      | Capsrube20914084
120 IIDNQPKEEDNAQDKS------P                                      | Brasrapa22687887
119 ISDNKPKEED----KS------P                                      | Brasrapa22694490
119 HKEPEGQADDDANTGT------R                                      | Caripapa16407497
117 AKQIKADGMEGEAA--------P                                      | Camesine18106834
119 GDQVKDAESTENGG---------                                      | Prunpers17661985
119 DDQAKDAAIGEEKEAGTAEVNDG                                      | Fragvesc27244095
119 ANPTVGSEVEEDKD---------                                      | Solatube24417190
119 VVGSEEDPKVDEEDDETS---AS                                      | Mimugutt17684079
120 LKICFGD----------------                                      | Physpate18069836
119 PSKADESTPEDANA---------                                      | Eucagran23572887
 87 -----------------------                                      | Ricicomm16798235
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