

#Additional File S8: Alpha pheromone sequences for all Leotiomycetes (GBK)

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LOCUS      A_resinae_ppg1      275 aa      linear      UNA
FEATURES   Location/Qualifiers
   KR      48..49
   KR      85..86
   AlphaRep 127..138
            /label="AWAlpha"
   KR      139..140
   AlphaRep 147..158
            /label="AWAlpha"
   KR      159..160
   AlphaRep 169..180
            /label="AWAlpha"
   KR      181..182
            /label="RR"
   AlphaRep4 195..206
            /label="AWAlpha"
   KR      207..208
   AlphaRep3 219..230
            /label="AWAlpha"
   KR      231..232
   AlphaRep  245..256
            /label="AWAlpha"
   KR      257..258

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ORIGIN

```

      1 MRLTNALCVI ILAATASAVA IPEPLALPLP EAYAEAKCGE FGECGRVKRA
AEAFAEAFAE
      61 PSAEPEDSIV MARCNLVGGA CYEAKRLARD LASVLAHTRD EGSAFVARLA
LEDEETSDLK
      121 AREAEAKCGK VGQPCGKIKR VAEPEAKCGK VGQPCGKAKR IADPEAEAKC
GKVGQPCGKL
      181 RRAAEAIAEA IAEPECGKVG QPCGKAKREA DALAEAEAVC GKVGQPCGKA
KRDALAAIA
      241 EADAKCGKVG QPCGKAKRDA HAIASAVSTV LEQL*

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LOCUS      A_pellizariae_ppg1  250 aa      linear      UNA
FEATURES   Location/Qualifiers
   AlphaRep 27..38
            /label="AWAlpha"
   KR      39..40
   AlphaRep1 49..60
            /label="AWAlpha"
   KR      61..62
   KR      79..80
   AlphaRep2 125..136
            /label="AWAlpha"
   KR      137..138
   KR      151..152
   AlphaRep3 157..168
            /label="AWAlpha"
   KR      169..170
   AlphaRep  181..192
            /label="AWAlpha"
   KR      193..194

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AlphaRep4      203..214
                /label="AWAlpha"
KR             215..216
KR             232..233
ORIGIN
  1 MQFATAIVVA VLAYSVNSAA TPDAAAWCRY VGQPCGKVKR DGTPPESEPWC
RYVVGQPCGKS
  61 KREAEAACFL PGGPCAKAKR DANALAHAVA DALPAAEAEA YYKALALRDA
QPEPAPLAGA
 121 EAEAWCRYFG QPCGKAKRSA VAFEDISEQA KRDAEAWCRY VGQPCGKAKR
AAEAVAEAEA
 181 WCRYVGQPCG KVKRGATPEA EPWCRYVGKP CGKSKRGAEA ACDASGLCGK
AKREAHAIAE
 241 AVANIIEKY*
//
LOCUS      A_tetracladia_ppg1      264 aa      linear      UNA
FEATURES      Location/Qualifiers
KR             36..37
AlphaRep      48..57
                /label="AWAlpha"
KR             60..61
AlphaRep      70..79
                /label="AWAlpha"
KR             82..83
KR             156..157
AlphaRep      168..177
                /label="AWAlpha"
KR             180..181
KR             194..195
KR             224..225
                /label="RR"
KR             245..246
ORIGIN
  1 MKFASTFIAV AIAVSVSATA IPEACSVEGQ SCMAIKRHAE AIATPDPWCW
HPGQVCVKSK
  61 RTATAYAEAW CWHPGQVCVK VKRAAEAF AE AIASPDEILD ARCESSECFD
ARLKIRELAG
 121 LVALTVRDAT PEAYIESLNL RDETKLRRDA SEHIEKREAE ADAEATPWCW
HPGQVCVKTK
 181 RSCGDAGSPC DKLKRAAAAL ANAVAEPAAE PQCLNPGQIC VKERREAEAT
AKAWCMTVPG
 241 CNMAKRDAHA LAAAANEVLA MYN*
//
LOCUS      A_sarcoides_ppg1      116 aa      linear      UNA
FEATURES      Location/Qualifiers
AlphaRep      23..30
                /label="AWAlpha"
KR             31..32
AlphaRep1     43..51
                /label="AWAlpha"
KR             52..53
AlphaRep1     64..72
                /label="AWAlpha"
KR             73..74
AlphaRep      87..94
                /label="AWAlpha"

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KR          95..96
AlphaRep1   107..115
             /label="AWAlpha"

ORIGIN
      1 MKLSHALSIF LLAATATAVA IPCGAPGQPC KREALPAPVP EPRCGAVGQP
CKREAVPEPA
      61 PGPRCGAVGQ PCKREAEPEP APEPVPCGAP GQPCKREVPEP EPAPEPRCGA
VGQPC*
//
LOCUS      C_torta_ppg1          271 aa          linear  UNA
FEATURES   Location/Qualifiers
  AlphaRep 27..37
             /label="AWAlpha"
  KR       38..39
  AlphaRep 54..64
             /label="AWAlpha"
  KR       67..68
             /label="RR"
  AlphaRep 83..93
             /label="AWAlpha"
  KR       94..95
  KR       114..115
  AlphaRep 157..167
             /label="AWAlpha"
  KR       168..169
  AlphaRep 176..186
             /label="AWAlpha"
  KR       189..190
             /label="RR"
  AlphaRep 203..213
             /label="AWAlpha"
  AlphaRep 221..231
             /label="AWAlpha"
  KR       232..233
  AlphaRep 240..250
             /label="AWAlpha"
  KR       253..254

ORIGIN
      1 MKFTSAVCVI ILAASASAIA IPEANAQHCG RPGQPCGKRD ASPFPEPDAE
ALAQHCGRPG
      61 QPCGKVRRAA EAMAEFAFAEP EPQHCGRPGQ PCGKREVEIA ERCNLVGGAC
YEAKRLARDL
      121 AGVVASTIEG DADAFYDNLN LEDRETSDKI ARDAEAQHCG RPGQPCGKRD
AEAEAQHCGR
      181 PGQPCGKLRR AAEIAEAVA EPQHCGRPGQ PCGRDALPEP QHCGRPGQPC
GKREAEFAAQ
      241 HCGRPGQPCG KAKRNAHALA HAADVAVSQL *
//
LOCUS      C_aeruginascens_ppg1  272 aa          linear  UNA
FEATURES   Location/Qualifiers
  AlphaRep 25..33
             /label="AWAlpha"
  KR       34..35
  AlphaRep 52..60
             /label="AWAlpha?"

```

```

KR          64..65
KR          101..102
KR          137..138
           /label="RR"
AlphaRep1  143..151
           /label="AWAlpha"
KR          152..153
           /label="RR"
AlphaRep4  162..170
           /label="AWAlpha"
KR          174..175
           /label="RR"
AlphaRep1  188..196
           /label="AWAlpha"
KR          201..202
AlphaRep2  215..223
           /label="AWAlpha"
KR          228..229
AlphaRep1  242..250
           /label="AWAlpha"
KR          254..255

```

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ORIGIN
      1 MKFATAIFVI VLAATATATA LPEPTCGRPG QGCKREPLAL PEAEADAI
AICGSEGQPC
     61 ARVKRAAEAF ASAVSEPEAE PVDEMLLARC NLVGGACYEA KRMTRDLATE
VAATQEDPEA
    121 FYSSLDIEDE ETSEKIRRDA EAKCGRPGQG CRRDADAEPE AICGRPGQGC
RQLRRAAEAM
    181 ANALADAKCG RPGQGCKDKA KREASALAEA EADARCGRPG QGCKDKLKRE
AVAVSIAEAV
    241 AKCGRPGQGC RKAKRDAAAL ASAAEEALRS L*

```

```
//
LOCUS      G_debralockiae_ppg1          164 aa          linear  UNA
```

```

FEATURES              Location/Qualifiers
   AlphaRep           24..32
                       /label="AWAlpha"
   KR                 33..34
                       /label="RR"
   AlphaRep           47..55
                       /label="AWAlpha"
   KR                 56..57
   AlphaRep1          70..78
                       /label="AWAlpha"
   KR                 79..80
   AlphaRep           89..97
                       /label="AWAlpha"
   KR                 98..99
   AlphaRep           112..120
                       /label="AWAlpha"
   KR                 121..122
   AlphaRep           131..139
                       /label="AWAlpha"
   KR                 140..141
   AlphaRep           154..162
                       /label="AWAlpha"

```

```
ORIGIN
```

1 MKYLSIIIVLA AAVSAIAIPA PEPTCGKPGQ PCRRNPEPVA VALPEPTCGK  
 PGQPCKREAE  
 61 PVAVAAPEPT CGKSGQPCKR EAAPAPEPTC GKPGQPCKRE AEPIAVAAPQ  
 PTCGKPGQPC  
 121 KRKAAPAPEP TCGKPGQPCK REAEPVAVAA PEPTCGKPGQ PCK\*

//

LOCUS H\_hymeniophilus\_ppg1 243 aa linear  
 UNA

FEATURES Location/Qualifiers

AlphaRep 18..27  
 /label="AWAlpha"  
 KR 51..52  
 AlphaRep 61..70  
 /label="AWAlpha"  
 KR 72..73  
 AlphaRep 86..95  
 /label="AWAlpha"  
 KR 97..98  
 AlphaRep 111..120  
 /label="AWAlpha"  
 KR 122..123  
 AlphaRep 132..141  
 /label="AWAlpha"  
 AlphaRep 155..164  
 /label="AWAlpha"  
 KR 166..167  
 AlphaRep 180..189  
 /label="AWAlpha"  
 AlphaRep 203..212  
 /label="AWAlpha"  
 KR 214..215  
 AlphaRep 224..233  
 /label="AWAlpha"

ORIGIN

1 MKYLSLVLLA AAVSAAPWCG KPGQPCPRSA EAIGEPWCYL PGKPGNCPCK  
 KREAIPEPEP  
 61 WCGKPGQPCP KKREAIPEPE PVAEPWCGKP GQPCPKKREA IPEPEPVAEP  
 WCGKPGQPCP  
 121 KKREAIPEPE PWCGKPGQPC PRSAIAEPEP IAEPWCGKPG QPCPKKREAI  
 PEAEPPVAEPW  
 181 CGKPGQPCPR SAIAEPEPIA EPWCGKPGQP CPKKREAYHK KVQWCGKPGQ  
 PCPREAEAEA  
 241 SA\*

//

LOCUS M\_aquatica\_ppg1 259 aa linear UNA

FEATURES Location/Qualifiers

AlphaRep 27..37  
 /label="AWAlpha"  
 KR 40..41  
 AlphaRep 46..56  
 /label="AWAlpha"  
 KR 59..60  
 KR 124..125  
 KR 133..134  
 AlphaRep 139..149  
 /label="AWAlpha"

```

KR          152..153
AlphaRep    160..170
             /label="AWAlpha"
KR          173..174
AlphaRep    181..191
             /label="AWAlpha"
KR          194..195
AlphaRep    208..218
             /label="AWAlpha"
KR          221..222
KR          240..241
ORIGIN
  1 MKFTTTLFAV ALATSVSAIA LPASEPQNCW RQGQICNKEK RDAEAQNCWR
  QGQICNKVKR
  61 AADAFAEAVA SPDDILDARC ESAECFSARL KLRELAGLVA VTVRDAKPEA
  YLASLNLRDE
  121 FEIRRDALAF QEKRAADPQN CWRQGQICNK EKREAEALAQ NCWRQGQICN
  KERREADPEA
  181 QNCWRQGQIC NKLKRAAAAV AEALAEPCNC WRQGQICNKE KRDAEAEAVA
  SCGEACTMAK
  241 RDASALAAAA NEILYMAN*
//
LOCUS      N_alba_ppg1          148 aa          linear  UNA
FEATURES   Location/Qualifiers
  AlphaRep    35..45
             /label="AWAlpha"
  KR          46..47
  AlphaRep1   66..76
             /label="AWAlpha"
  KR          77..78
  AlphaRep    97..107
             /label="AWAlpha"
  KR          108..109
  AlphaRep2   128..138
             /label="AWAlpha"
  KR          139..140
             /label="RR"
ORIGIN
  1 MKFTSSLCIG IAAFAINTTA LPVANPVPAA APEPCNGWHS PGQPCKREAD
  PEPIPEPEPE
  61 PEADPCLYWH SPGQPCKREA XPEPIPEPEP EPEPEACNGW HSPGQPCKRE
  AAPEPIPEPE
  121 PEPEAEPCNG WYSPGQPCRR RRRSFKV*
//
LOCUS      O_maius_ppg1?       87 aa          linear  UNA
FEATURES   Location/Qualifiers
  KR          25..26
  AlphaRep1   39..50
             /label="AWAlpha?"
  KR          55..56
  AlphaRep    71..82
             /label="AWAlpha?"
ORIGIN
  1 MKIASSVFLA VLVIGASTAP VPEAKRNPDP VLSPIMVARY GYPTGCGAPG
  EPCPKREAAP
  61 EPVAAAIAEP RYGYPKGCGA PGEPCP*

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```
//
LOCUS      P_destructans_ppg1      272 aa      linear      UNA
FEATURES   Location/Qualifiers
   AlphaRep      27..38
                 /label="AWAlpha"
   KR            39..40
   AlphaRep1     71..82
                 /label="AWAlpha"
   KR            83..84
   KR            129..130
   AlphaRep2     137..148
                 /label="AWAlpha"
   KR            149..150
   AlphaRep3     167..178
                 /label="AWAlpha"
   KR            179..180
   AlphaRep4     189..200
                 /label="AWAlpha"
   KR            201..202
   KR            227..228
```

```
ORIGIN
      1 MKYLATLCVA ALVAGVNSAA IAAAEPCWVR LGQPCDKVCR AAEAFAEAFD
EPIAEAEAFD
      61 EPIAEAEASA FCWRPGQICE KAKRAALALA HTVADANPEA EAFFDKLAID
EAFPEPEAVA
      121 DAEIADKVCR EAEAEAFPCR PGQPCGKVCR AADAIASALA EPAPEPFCQR
PGQLCGKVCR
      181 DAEAVAEAFD WRPGQPCGKA KREANALAEA AAEALEFGGL EKEQNSKRIF
RPPHYTTTAAI
      241 FPTDPRLFHH FHEEQPYDCR KVDPNVCVTVE A*
```

```
//
LOCUS      P_pannorum_ppg1      234 aa      linear      UNA
FEATURES   Location/Qualifiers
   AlphaRep      29..40
                 /label="AWAlpha"
   KR            41..42
   AlphaRep1     63..74
                 /label="AWAlpha"
   KR            75..76
   AlphaRep2     83..94
                 /label="AWAlpha"
   KR            95..96
   KR            146..147
   AlphaRep3     152..163
                 /label="AWAlpha"
   KR            164..165
   AlphaRep2     182..193
                 /label="AWAlpha"
   KR            194..195
   AlphaRep2     204..215
                 /label="AWAlpha"
   KR            216..217
```

```
ORIGIN
      1 MKYLATICVA ALVAGVNSAA IAVAEPEPIC WRPDQPCGKV KRAAEAFAEA
MAEPIAEPAA
```

61 EPICWRPGQQ CGKVKREAEA AAICWRPGQP CGKAKRAALA LAHAVANAQP  
 EAEAFFDKLA  
 121 VREAFPEPEP EPEAIANAAP IDDKLKREAE AICWRPGQPC GVKKRAAEAI  
 ASALAKSEPE  
 181 AICWRPGQPC GKAKRDAAEAE AEAICWRPGQ PCGKAKREAN ALAEAAAETL  
 ASL\*

//

LOCUS P\_verrucosus\_ppg1 230 aa linear UNA

FEATURES Location/Qualifiers

AlphaRep 29..38  
 /label="AWAlpha"  
 KR 41..42  
 AlphaRep 59..68  
 /label="AWAlpha"  
 KR 71..72  
 AlphaRep 83..94  
 /label="AWAlpha"  
 KR 95..96  
 KR 142..143  
 AlphaRep1 148..159  
 /label="AWAlpha"  
 KR 160..161  
 AlphaRep 178..189  
 /label="AWAlpha"  
 KR 190..191  
 AlphaRep 200..211  
 /label="AWAlpha"  
 KR 212..213

ORIGIN

1 MKYLANLCLA ILVVGANSAA IAVAEPEPIC WRPGQPCGKV KRAAEAFAEA  
 IAEPPIAEPIC  
 61 WRPGQPCGKV KREAEAEAEA AAICWRPGQP CGKAKRAALA LAHAVANANP  
 EAGAFFDKLA  
 121 IREAFPEPEA VAEAEPVDEK LKREAEAIKW RPGQPCGKVK RAAEAIASAL  
 AEAAPEPICW  
 181 RPGQPCGKAK RDAEAAAIAI CWRPGQPCGK AKREANALAE AAAEALASL\*

//

LOCUS S\_lignicola\_ppg1 238 aa linear UNA

FEATURES Location/Qualifiers

AlphaRep 45..56  
 /label="AWAlpha"  
 KR 58..59  
 AlphaRep1 82..93  
 /label="AWAlpha"  
 KR 95..96  
 AlphaRep2 123..134  
 /label="AWAlpha"  
 KR 136..137  
 AlphaRep3 184..195  
 /label="AWAlpha"  
 KR 197..198  
 AlphaRep4 223..234  
 /label="AWAlpha"

ORIGIN

1 MKLTSVLFAF ILAVARAPIP EPEPEPEPAP VAEPEPHPVA VAEPRCTRMG  
 QPCGKKAKRE



61 AVPEPVPVVK AAPNPVAEPN PVCTRMGQAC GKKAKREPIP EPVPEPEPAA  
 KAEPNPVAAP  
 121 EPKCTRMGQP CGKSKRVAV AEPEPEPEPM PVPLPEPQPE PEPLPEPAPA  
 AKAVPNPVAE  
 181 PEPKCTRMGQ PCGRKEKREP VPEPQPAPVA KAAPNPVAEP DPECTRMGQP  
 CGRKFRA\*

//

LOCUS V\_echinocandica\_ppg1 244 aa linear  
 UNA

FEATURES Location/Qualifiers

AlphaRep	26..34	/label="AWAlpha"
KR	37..38	
AlphaRep	47..55	/label="AWAlpha"
KR	60..61	
AlphaRep	70..78	/label="AWAlpha"
KR	83..84	
AlphaRep	99..107	/label="AWAlpha"
KR	108..109	
AlphaRep	114..122	/label="AWAlpha"
KR	127..128	
AlphaRep	137..145	/label="AWAlpha"
KR	150..151	
AlphaRep	166..174	/label="AWAlpha"
KR	175..176	
AlphaRep	181..189	/label="AWAlpha"
KR	194..195	
AlphaRep	204..212	/label="AWAlpha"
KR	217..218	
AlphaRep	233..241	/label="AWAlpha"

ORIGIN

1 MKFTNAIAIL FLTATTINAL PSAEPCTHVG QGCWKDKREA VAEPDPCTHV  
 GQGCWKHKLK  
 61 RLAEAEAEPC THVGQGCWKE KQKRVAEAEA EADAAAEACT HVGQGCWKRE  
 ADPCTHVGQG  
 121 CWKHKMKRVA EAYAEPCTHV GQGCWKEKQK RVAEAEAEAD AAAEACTHVG  
 QGCWKREADP  
 181 CTHVGQGCWK HKMKRVAEAY AEPCTHVGQG CWKEKMKRVA EAEAEAEAAA  
 EACTHVGQGC  
 241 WKQ\*

//

LOCUS B\_calthae\_ppg1 359 aa linear UNA

FEATURES Location/Qualifiers

AlphaRep	25..33	/label="AWAlpha"
KR	34..35	
AlphaRep	48..56	

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        /label="AWAlpha"
KR      57..58
AlphaRep 65..73
        /label="AWAlpha"
KR      74..75
AlphaRep 80..88
        /label="AWAlpha"
KR      89..90
AlphaRep 97..105
        /label="AWAlpha"
KR      106..107
AlphaRep 118..126
        /label="AWAlpha"
KR      130..131
AlphaRep 144..152
        /label="AWAlpha"
KR      153..154
KR      166..167
KR      179..180
AlphaRep 221..229
        /label="AWAlpha"
KR      230..231
AlphaRep1 236..244
        /label="AWAlpha"
KR      245..246
AlphaRep 255..263
        /label="AWAlpha"
KR      266..267
AlphaRep 276..284
        /label="AWAlpha"
KR      288..289
AlphaRep2 306..314
        /label="AWAlpha"
KR      315..316
AlphaRep 329..337
        /label="AWAlpha"
KR      341..342
ORIGIN
  1 MKFTNAIALA ILAATATAVA VPEPWCGRPG QPCKREAVAV AAPVAEAWCG
RPGQPCKRTP
  61 EAEAWCGRPG QPCKRDAEPW CGRPGQPCKR EALPEAWCGR PGQPCKRTPL
AEAEAEAWCG
  121 RPGQPCRKNK RAAEAVAEAF AEPWCGRPGQ PCKRDAEADV SEAAIKRCNM
VGGACFEAKR
  181 LARDLAEATA ETVEDSDLFL RSLNIETREV SEVVAREAEA WCGRPGQPCK
RDAEAWCRRP
  241 GQPCKREALA EAEAWCGRPG QPCKEKREAD PEAETWCGRP GQPCRAVKRA
AEAIAEALAE
  301 PIAEAWCGRH GQPCKREALA EAEANAEAWC GRPGQPCRKA KRDAFALAYA
ADVALAQL*
//
LOCUS      B_convoluta_ppg1      344 aa      linear      UNA
FEATURES      Location/Qualifiers
      AlphaRep      25..33
                  /label="AWAlpha"
      KR      34..35

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```

AlphaRep      50..58
               /label="AWAlpha"
KR            59..60
AlphaRep      65..73
               /label="AWAlpha"
KR            74..75
AlphaRep      82..90
               /label="AWAlpha"
KR            91..92
AlphaRep     103..111
               /label="AWAlpha"
KR            115..116
AlphaRep     129..137
               /label="AWAlpha"
KR            138..139
               /label="RR"
KR            151..152
KR            164..165
AlphaRep     206..214
               /label="AWAlpha"
KR            215..216
AlphaRep     225..233
               /label="AWAlpha"
KR            234..235
AlphaRep     240..248
               /label="AWAlpha"
KR            251..252
AlphaRep     261..269
               /label="AWAlpha"
KR            273..274
AlphaRep     291..299
               /label="AWAlpha"
KR            300..301
AlphaRep     314..322
               /label="AWAlpha"
KR            326..327
ORIGIN
  1 MKFTNAIALA ILAATATAVA VPEPWCGRPG QPCKREAVAV AVAAPVAEAW
CGRPGQPCKR
  61 DAEPWCGRPG QPCKREALPE AWCGRPGQPC KRTPLAEAEA EAWCGRPGQP
CRKNKRAAEA
  121 VAEFAEPWC GRPGQPCRRD AEADVSEAAI KRCNMVGGAC FEAKRLARDL
AEATAETVED
  181 ADAFLESLNI ETREVSEVVA REAEAWCGRP GQPCKREALA EAEAWCGRPG
QPCKRTAEPW
  241 CGRPGQPCKE KREADPEAEA WCGRPGQPCR AVKRAAEAIA EALAEPTAEA
WCGRPGQPCK
  301 REALAEAEAN AEAWCGRPGQ PCRKAKRDAF ALAYAADIAL AQL*
//
LOCUS      B_globosa_ppg1      393 aa      linear      UNA
FEATURES      Location/Qualifiers
      AlphaRep      25..33
                  /label="AWAlpha"
      KR            34..35
      AlphaRep      48..56
                  /label="AWAlpha"

```

KR	57..58
AlphaRep	65..73
	/label="AWAlpha"
KR	74..75
AlphaRep	80..88
	/label="AWAlpha"
KR	89..90
AlphaRep	97..105
	/label="AWAlpha"
KR	106..107
AlphaRep	118..126
	/label="AWAlpha"
KR	130..131
AlphaRep	144..152
	/label="AWAlpha"
KR	153..154
KR	166..167
KR	179..180
AlphaRep	221..229
	/label="AWAlpha"
KR	230..231
AlphaRep	236..244
	/label="AWAlpha"
KR	245..246
AlphaRep	255..263
	/label="AWAlpha"
KR	264..265
AlphaRep	274..282
	/label="AWAlpha"
KR	283..284
AlphaRep	289..297
	/label="AWAlpha"
KR	300..301
AlphaRep	310..318
	/label="AWAlpha"
KR	322..323
AlphaRep	340..348
	/label="AWAlpha"
KR	349..350
AlphaRep	363..371
	/label="AWAlpha"
KR	375..376

ORIGIN

1	MKFTNAIALA	ILAATATAVA	VPEPWCGRPG	QPCCKREAVAV	AAPVAEAWCG
	RPGQPCKRTP				
61	EAEAWCGRPG	QPCKRDAEPW	CGRPGQPCKR	EALPEAWCGR	PGQPCKRTPL
	AEAEAEAWCG				
121	RPGQPCRKNK	RAAEAVAEAF	AEPWCGRPGQ	PCKRDAEADV	SEAAIKRCNM
	VGGACFEAKR				
181	LARDLAEATA	ETVEDSDAFL	ESLNIETREV	SEVVAREAEA	WCGRPGQPCK
	RDAEAWCGRP				
241	GQPCKREALA	EAEAWCGRPG	QPCCKREALAE	AEAWCGRPGQ	PCKRTAEPWC
	GRPGQPCKEK				
301	READPEAEAW	CGRPGQPCRA	VKRAAEIAIE	ALAEPTAEAW	CGRPGQPCKR
	EALAEAEANA				
361	EAWCGRPGQP	CRKAKRDAFA	LAYAADIALA	QL*	

```

//
LOCUS      B_narcissicola_ppg1      338 aa      linear      UNA
FEATURES   Location/Qualifiers
   AlphaRep 25..33
             /label="AWAlpha"
   KR       34..35
   AlphaRep 42..50
             /label="AWAlpha"
   KR       51..52
   AlphaRep 63..71
             /label="AWAlpha"
   KR       75..76
   AlphaRep 89..97
             /label="AWAlpha"
   KR       111..112
   KR       124..125
   AlphaRep 166..174
             /label="AWAlpha"
   KR       175..176
   AlphaRep 181..189
             /label="AWAlpha"
   KR       190..191
   AlphaRep 200..208
             /label="AWAlpha"
   KR       209..210
   AlphaRep 219..227
             /label="AWAlpha"
   KR       228..229
   AlphaRep 234..242
             /label="AWAlpha"
   KR       245..246
   AlphaRep 255..263
             /label="AWAlpha"
   KR       267..268
   AlphaRep 285..293
             /label="AWAlpha"
   KR       294..295
   AlphaRep 308..316
             /label="AWAlpha"
   KR       320..321
ORIGIN
    1 MKFTNAIALA ILAATATAVA VPEPWCGRPG QPCKREALPE AWCGRPGQPC
KRTPLAEAEA
    61 EAWCGRPGQP CRKNKRAAEA VAEFAEPWC GRPGQPCKCD AEADVSEAAI
KRCNMVGGAC
    121 FEAKRLARDL AEATAETVED SDAFLESLNI ETREVSEVVA REAEAWCGRP
GQPCKRDAEA
    181 WCGRPGQPCK REALAEAEAW CGRPGQPCKR GALAEAEAWC GRPGQPCKRN
AEAWCGRPGQ
    241 PCKEKREADP EAEAWCGRPG QPCRAVKRAA EAIAEALAEP TAEAWCGRPG
QPCKREALAE
    301 AEANAEAWCG RPGQPCRKAK RDAFALAYAA DIALAQL*
//
LOCUS      B_squamosa_ppg1      391 aa      linear      UNA
FEATURES   Location/Qualifiers
   KR       32..33

```

AlphaRep	46..54	/label="AWAlpha"
KR	55..56	
AlphaRep	63..71	/label="AWAlpha"
KR	72..73	
AlphaRep	78..86	/label="AWAlpha"
KR	87..88	
AlphaRep	95..103	/label="AWAlpha"
KR	104..105	
AlphaRep	116..124	/label="AWAlpha"
KR	128..129	
AlphaRep	142..150	/label="AWAlpha"
KR	151..152	
KR	164..165	
KR	177..178	
AlphaRep	219..227	/label="AWAlpha"
KR	228..229	
AlphaRep	234..242	/label="AWAlpha"
KR	243..244	
AlphaRep	253..261	/label="AWAlpha"
KR	262..263	
AlphaRep	272..280	/label="AWAlpha"
KR	281..282	
AlphaRep	287..295	/label="AWAlpha"
KR	298..299	
AlphaRep	308..316	/label="AWAlpha"
KR	320..321	
AlphaRep	338..346	/label="AWAlpha"
KR	347..348	
AlphaRep	361..369	/label="AWAlpha"
KR	373..374	

ORIGIN

```

1 MKFTNAIALA ILAATATAVA VPECGRPGQP CKREAVAVAA PVAEAWCGRP
GQPCKRTPEA
61 EAWCGRPGQP CKRDAEPWCG RPGQPCKREA LPEAWCGRPG QPCKRTPLAE
AEAEAWCGRP
121 GQPCRKNKRA AEVAEAEFAE PWCGRPGQPC KRDAEADISE AAIKRCNMVG
GACFEAKRLA
181 RDLAEATAET VEDADAFLES LNIETREVSE VVAREAEAWC GRPGQPCKRD
AEAWCGRPGQ
241 PCKREALAEA EAWCGRPGQP CKREALAEAE AWCGRPGQPC KRTAEPWCGR
PGQPCKEKRE

```

301 ADPEAEAWCG RPGQPCRAVK RAAEAIAEAL AEPTAEAWCG RPGQPCCKREA  
LAEAEANAEA

361 WCGRPGQPCR KAKRDAFALA YAADIALAQL \*

//

LOCUS B\_aclada\_ppg1 393 aa linear UNA

FEATURES Location/Qualifiers

AlphaRep	25..33	/label="AWAlpha"
KR	34..35	
AlphaRep	48..56	/label="AWAlpha"
KR	57..58	
AlphaRep	65..73	/label="AWAlpha"
KR	74..75	
AlphaRep	80..88	/label="AWAlpha"
KR	89..90	
AlphaRep	97..105	/label="AWAlpha"
KR	106..107	
AlphaRep	118..126	/label="AWAlpha"
KR	130..131	
AlphaRep	144..152	/label="AWAlpha"
KR	153..154	
KR	166..167	
KR	179..180	
AlphaRep	221..229	/label="AWAlpha"
KR	230..231	
AlphaRep	236..244	/label="AWAlpha"
KR	245..246	
AlphaRep	255..263	/label="AWAlpha"
KR	264..265	
AlphaRep	274..282	/label="AWAlpha"
KR	283..284	
AlphaRep	289..297	/label="AWAlpha"
KR	300..301	
AlphaRep	310..318	/label="AWAlpha"
KR	322..323	
AlphaRep	340..348	/label="AWAlpha"
KR	349..350	
AlphaRep	363..371	/label="AWAlpha"
KR	375..376	

ORIGIN

1 MKFTNAIALA ILAATATAVA VPEPWGCRPG QPCKREAVAV AAPVAEAWCG  
RPGQPCCKRTP

```

        61 EAEAWCGRPG QPCKRDAEPW CGRPGQPCKR EALPEAWCGR PGQPCKRTPL
AEAEAEAWCG
        121 RPGQPCRKNK RAAEAVAEAF AEPWCGRPGQ PCKRDAEADV SEAAIKRCNM
VGGACFEAKR
        181 LARDLAEATA ETVEDADAFI ESLNIETREV SEVVAREAEA WCGRPGQPCK
RDAEAWCGRP
        241 GQPCKREALA EAEAWCGRPG QPCKREALAE AEAWCGRPGQ PCKRAAEPWC
GRPGQPCKEK
        301 READPEAEAW CGRPGQPCRA VKRAAEIAIE ALAEPTAEAW CGRPGQPCKR
EALAEAEANA
        361 EAWCGRPGQP CRKAKRDAFA LAYAADIALA QL*

```

```

//
LOCUS      B_byssoides_ppg1      376 aa      linear      UNA
FEATURES   Location/Qualifiers
   AlphaRep 25..33
             /label="AWAlpha"
   KR       34..35
   AlphaRep 48..56
             /label="AWAlpha"
   KR       57..58
   AlphaRep 63..71
             /label="AWAlpha"
   KR       72..73
   AlphaRep 80..88
             /label="AWAlpha"
   KR       89..90
   AlphaRep 101..109
             /label="AWAlpha"
   KR       113..114
   AlphaRep 127..135
             /label="AWAlpha"
   KR       136..137
   KR       149..150
   KR       162..163
   AlphaRep 204..212
             /label="AWAlpha"
   KR       213..214
   AlphaRep 219..227
             /label="AWAlpha"
   KR       228..229
   AlphaRep 238..246
             /label="AWAlpha"
   KR       247..248
   AlphaRep 257..265
             /label="AWAlpha"
   KR       266..267
   AlphaRep 272..280
             /label="AWAlpha"
   KR       283..284
   AlphaRep 293..301
             /label="AWAlpha"
   KR       305..306
   AlphaRep 323..331
             /label="AWAlpha"
   KR       332..333
   AlphaRep 346..354

```



```

                /label="AWAlpha"
KR              358..359
ORIGIN
    1 MKFTNAIALA ILAATATAVA VPEPWCGRPG QPCKREAVAV AAPVAEAWCG
RPGQPCKRDA
    61 EPWCGRPGQP CKREALPEAW CGRPGQPCKR TPLAEAEAEA WCGRPGQPCR
KNKRAAEAVA
    121 EAFKAPWCGR PGQPCKRDAE ADVSEAAIKR CNMVGACFE AKRLARDLAE
ATAETVEDTD
    181 AFLESLNIET REVSEVVARE AEAWCGRPGQ PCKRDAAEWG GRPGQPCKRE
ALAEAEAWCG
    241 RPGQPCKREA LAEAEAWCGR PGQPCKRTAE PWCGRPGQPC KEKREADPEA
EAWCGRPGQP
    301 CRAVKRAAEA IAEALAEPTA EAWCGRPGQP CKREALAEAE ANAEAWCGRP
GQPCRKAKRD
    361 AFALAYAADI ALAQL*
//

```

```

LOCUS          B_cinerea_ppg1          392 aa          linear          UNA 28-
Dec-2021

```

DEFINITION

FEATURES	Location/Qualifiers
AlphaRep	25..33 /label="AWAlpha"
KR	34..35
AlphaRep	48..56 /label="AWAlpha"
KR	57..58
AlphaRep	65..73 /label="AWAlpha"
KR	74..75
AlphaRep	80..88 /label="AWAlpha"
KR	89..90
AlphaRep	97..105 /label="AWAlpha"
KR	106..107
AlphaRep	118..126 /label="AWAlpha"
KR	130..131
AlphaRep	144..152 /label="AWAlpha"
KR	153..154
KR	166..167
KR	179..180
AlphaRep	221..229 /label="AWAlpha"
KR	230..231
AlphaRep	236..244 /label="AWAlpha"
KR	245..246
AlphaRep	255..263 /label="AWAlpha"
KR	264..265
AlphaRep	274..282 /label="AWAlpha"
KR	283..284

```

AlphaRep      289..297
               /label="AWAlpha"
KR            300..301
AlphaRep      310..318
               /label="AWAlpha"
KR            322..323
AlphaRep      340..348
               /label="AWAlpha"
KR            349..350
AlphaRep      363..371
               /label="AWAlpha"
KR            375..376
ORIGIN
  1 MKFTNAIALA ILAATATAVA VPEPWCGRPG QPCKREAVAV AAPVAEPWCG
RPGQPCKRTP
  61 EAEAWCGRPG QPCKRDAEPW CGRPGQPCKR EALPEAWCGR PGQPCKRTPL
AEAEAEAWCG
  121 RPGQPCRKNK RAAEAVAEAF AEPWCGRPGQ PCKRDAEADV SEAAIKRCNM
VGGACFEAKR
  181 LARDLAEATA ETVEDSDLFL RSLNIETREV SEVVAREAEA WCGRPGQPCK
RDAEAWCGRP
  241 GQPCKREALA EAEAWCGRPG QPCKREALAE AEAWCGRPGQ PCKRTAEPWC
GRPGQPCKEK
  301 READPEAEAW CGRPGQPCRA VKRAAEIAIE ALAEPTAEAW CGRPGQPCKR
EALAEAEANA
  361 EAWCGRPGQP CRKAKRDAFA LAYAADVALA QL
//
LOCUS      B_deweyae_ppg1      391 aa      linear      UNA
FEATURES      Location/Qualifiers
KR            32..33
AlphaRep      46..54
               /label="AWAlpha"
KR            55..56
AlphaRep2     63..71
               /label="AWAlpha"
KR            72..73
AlphaRep3     78..86
               /label="AWAlpha"
KR            87..88
AlphaRep      95..103
               /label="AWAlpha"
KR            104..105
AlphaRep      116..124
               /label="AWAlpha"
KR            128..129
AlphaRep3     142..150
               /label="AWAlpha"
KR            151..152
KR            164..165
KR            177..178
AlphaRep2     219..227
               /label="AWAlpha"
KR            228..229
AlphaRep      234..242
               /label="AWAlpha"
KR            243..244

```

```

AlphaRep      253..261
               /label="AWAlpha"
KR            262..263
AlphaRep      272..280
               /label="AWAlpha"
KR            281..282
AlphaRep      287..295
               /label="AWAlpha"
KR            298..299
AlphaRep      308..316
               /label="AWAlpha"
KR            320..321
AlphaRep3     338..346
               /label="AWAlpha"
KR            347..348
AlphaRep4     361..369
               /label="AWAlpha"
KR            373..374

ORIGIN
      1 MKFTNAIALA ILAATATAVA VPECGRPGQP CKREAVAVAA PVAEAWCGRP
GQPCKRTPEA
     61 EAWCGRPGEP CKRDAEPWCG HPGQPCKREA LPEAWCGRPG QPCKRTPLAE
AEAEAWCGRP
    121 GQPCRKNKRA AEVAEAEFAE PWC GHPGQPC KRDAEADISE AAIKRCNMVG
GACFEAKRLA
    181 RDLAEATAET VEDADAFLES LNIETREVSE VVAREAEAWC GRPGEPCKRD
AEAWCGRPGQ
    241 PCKREALAEA EAWCGRPGQP CKREALAEAE AWCGRPGQPC KRTAEPWCGR
PGQPCKEKRE
    301 ADPEAEAWCG RPGQPCRAVK RAAEAI AEAL AEPTAEAWCG HPGQPCKREA
LAEAEANAEA
    361 WCGLPGQPCR KAKRDAFALA YAADIALAQL *

//
LOCUS      B_elliptica_ppg1      391 aa      linear      UNA
FEATURES      Location/Qualifiers
      KR            32..33
      AlphaRep     46..54
               /label="AWAlpha"
      KR            55..56
      AlphaRep2    63..71
               /label="AWAlpha"
      KR            72..73
      AlphaRep2    78..86
               /label="AWAlpha"
      KR            87..88
      AlphaRep2    95..103
               /label="AWAlpha"
      KR            104..105
      AlphaRep     116..124
               /label="AWAlpha"
      KR            128..129
      AlphaRep     142..150
               /label="AWAlpha"
      KR            151..152
      KR            164..165
      KR            177..178

```

```

AlphaRep      219..227
               /label="AWAlpha"
KR            228..229
AlphaRep      234..242
               /label="AWAlpha"
KR            243..244
AlphaRep      253..261
               /label="AWAlpha"
KR            262..263
AlphaRep      272..280
               /label="AWAlpha"
KR            281..282
AlphaRep      287..295
               /label="AWAlpha"
KR            298..299
AlphaRep2     308..316
               /label="AWAlpha"
KR            320..321
AlphaRep2     338..346
               /label="AWAlpha"
KR            347..348
AlphaRep2     361..369
               /label="AWAlpha"
KR            373..374

ORIGIN
      1 MKFTNAIALA ILAATATAVA VPECGRPGQP CKREAVAVAA PVAEAWCGRP
GQPCKRTPEA
      61 EAWCGLPGQP CKRDAEPWCG LPGQPCKREA LPEAWCGLPG QPCKRTPLAE
AEAEAWCGRP
      121 GQPCRKNKRA AEVAEAFAE PWCGRPGQPC KRDAEADISE AAIKRCNMVG
GACFEAKRLA
      181 RDLAEATAET VEDADAFLES LNIETREVSE VVAREAEAWC GRPGQPCKRD
AEAWCGRPGQ
      241 PCKREALAEA EAWCGRPGQP CKREALAEAE AWCGRPGQPC KRTAEPWCGR
PGQPCKEKRE
      301 ADPEAEAWCG LPGQPCRAVK RAAEAI AEAL AEPTAEAWCG LPGQPCKREA
LAEAEANAEA
      361 WCGLPGQPCR KAKRDAFALA YAADIALAQL *

//
LOCUS      B_fabae_ppg1      393 aa      linear      UNA
FEATURES
AlphaRep      25..33
               /label="AWAlpha"
KR            34..35
AlphaRep      48..56
               /label="AWAlpha"
KR            57..58
AlphaRep      65..73
               /label="AWAlpha"
KR            74..75
AlphaRep      80..88
               /label="AWAlpha"
KR            89..90
AlphaRep      97..105
               /label="AWAlpha"
KR            106..107

```

```

AlphaRep      118..126
               /label="AWAlpha"
KR            130..131
AlphaRep      144..152
               /label="AWAlpha"
KR            153..154
KR            166..167
KR            179..180
AlphaRep      221..229
               /label="AWAlpha"
KR            230..231
AlphaRep      236..244
               /label="AWAlpha"
KR            245..246
AlphaRep      255..263
               /label="AWAlpha"
KR            264..265
AlphaRep      274..282
               /label="AWAlpha"
KR            283..284
AlphaRep      289..297
               /label="AWAlpha"
KR            300..301
AlphaRep      310..318
               /label="AWAlpha"
KR            322..323
AlphaRep      340..348
               /label="AWAlpha"
KR            349..350
AlphaRep      363..371
               /label="AWAlpha"
KR            375..376

ORIGIN
    1 MKFTNAIALA ILAATATAVA VPEPWCGRPG QPCKREAVAV AAPVAEPWCG
RPGQPCKRTP
    61 EAEAWCGRPG QPCKRDAEPW CGRPGQPCKR EALPEAWCGR PGQPCKRTPL
AEAEAEAWCG
    121 RPGQPCRKNK RAAEAVAEAF AEPWCGRPGQ PCKRDAEADV SEAAIKRCNM
VGGACFEAKR
    181 LARDLAEATA ETVEDSDLFL RSLNIETREV SEVVAREAEA WCGRPGQPCK
RDAEAWCGRP
    241 GQPCKREALA EAEAWCGRPG QPCKREALAE AEAWCGRPGQ PCKRTAEPWC
GRPGQPCKEK
    301 READPEAEAW CGRPGQPCRA VKRAAEIAIE ALAEPTAEAW CGRPGQPCKR
EALAEAEDNA
    361 EAWCGRPGQP CRKAKRDAFA LAYAADVALA QL*

//
LOCUS      B_fragariae_ppg1      446 aa      linear      UNA
FEATURES
    AlphaRep      25..33
                  /label="AWAlpha"
    KR            34..35
    AlphaRep      48..56
                  /label="AWAlpha"
    KR            57..58
    AlphaRep      65..73

```

```

/label="AWAlpha"
KR 74..75
AlphaRep 80..88
/label="AWAlpha"
KR 89..90
AlphaRep 97..105
/label="AWAlpha"
KR 106..107
AlphaRep 118..126
/label="AWAlpha"
KR 130..131
AlphaRep 144..152
/label="AWAlpha"
KR 153..154
KR 166..167
KR 179..180
AlphaRep 221..229
/label="AWAlpha"
KR 230..231
AlphaRep 236..244
/label="AWAlpha"
KR 245..246
AlphaRep 255..263
/label="AWAlpha"
KR 264..265
AlphaRep 274..282
/label="AWAlpha"
KR 283..284
AlphaRep 289..297
/label="AWAlpha"
KR 298..299
AlphaRep 308..316
/label="AWAlpha"
KR 317..318
AlphaRep 327..335
/label="AWAlpha"
KR 336..337
AlphaRep 342..350
/label="AWAlpha"
KR 353..354
AlphaRep 363..371
/label="AWAlpha"
KR 375..376
AlphaRep 393..401
/label="AWAlpha"
KR 402..403
AlphaRep 416..424
/label="AWAlpha"
KR 428..429

```

ORIGIN

1 MKFTNAIALA ILAATATAVA VPEPWCGRPG QPCKREAVAV AAPVAEAWCG  
RPGQPCKRTP

61 EAEAWCGRPG QPCKRDAEPW CGRPGQPCKR EALPEAWCGR PGQPCKRTP  
AEAEAEAWCG

121 RPGQPCRKNK RAAEAVAEAF AEPWCGRPGQ PCKRDAEADV SEAAIKRCNM  
VGGACFEAKR

```

181 LARDLAEATA ETVEDSDAFL ESLNIETREV SEVVAREAEA WCGRPGQPCCK
RDAEAWCGRP
241 GQPCCKREALA EAEAWCGRPG QPCCKREALAE AEAWCGRPGQ PCKRTAEPWC
GRPGQPCCKRE
301 ALAEAEAWCG RFGQPCCKREA LAEAEAWCGR PGQPCCKRTAE PWCGRPGQPC
KEKREADPEA
361 EAWCGRPGQP CRAVKRAAEA IAEALAEPTA EAWCGRPGQP CKREALAEAE
ANAEAWCGRP
421 GQPCRKAKRD AFALAYAADI ALAQL*

```

//

LOCUS B\_galanthina\_ppg1 393 aa linear UNA

FEATURES Location/Qualifiers

```

AlphaRep 25..33
           /label="AWAlpha"
KR        34..35
           /label="RR"
AlphaRep 48..56
           /label="AWAlpha"
KR        57..58
AlphaRep 65..73
           /label="AWAlpha"
KR        74..75
AlphaRep 80..88
           /label="AWAlpha"
KR        89..90
AlphaRep 97..105
           /label="AWAlpha"
KR        106..107
AlphaRep 118..126
           /label="AWAlpha"
KR        130..131
AlphaRep 144..152
           /label="AWAlpha"
KR        153..154
KR        166..167
KR        179..180
AlphaRep 221..229
           /label="AWAlpha"
KR        230..231
AlphaRep 236..244
           /label="AWAlpha"
KR        245..246
AlphaRep 255..263
           /label="AWAlpha"
KR        264..265
AlphaRep 274..282
           /label="AWAlpha"
KR        283..284
AlphaRep 289..297
           /label="AWAlpha"
KR        300..301
AlphaRep 310..318
           /label="AWAlpha"
KR        322..323
AlphaRep 340..348
           /label="AWAlpha"

```

```

KR          349..350
AlphaRep    363..371
            /label="AWAlpha"
KR          375..376

ORIGIN
  1 MKFTNAIALA ILAATATAVA VPEPWCGRPG QPCRREAVAV AAPVAEAWCG
RPGQPCKRTP
  61 EAEAWCGRPG QPCKRDAEPW CGRPGQPCKR EALPEAWCGR PGQPCKRTPL
AEAEAEAWCG
  121 RPGQPCRKNK RAAEAVAEAF AEPWCGRPGQ PCKRDAEADV SEAAIKRCNM
VGGACFEAKR
  181 LARDLAEATA ETVEDSDAFL ESLNIETREV SEVVAREAEA WCGRPGQPCK
RDVEAWCGRP
  241 GQPCKREALA EAEAWCGRPG QPCKREALAE AEAWCGRPGQ PCKRTAEPWC
GRPGQPCKEK
  301 READPEAEAW CGRPGQPCRA VKRAAEIAIE ALAEPTAEAW CGRPGQPCKR
EALAEAEANA
  361 EAWCGRPGQP CRKAKRDAFA LAYAADIALA QL*

//
LOCUS       B_hyacinthi_ppg1          374 aa          linear      UNA
FEATURES             Location/Qualifiers
     AlphaRep        25..33
                     /label="AWAlpha"
     KR              34..35
     AlphaRep        48..56
                     /label="AWAlpha"
     KR              57..58
     AlphaRep        65..73
                     /label="AWAlpha"
     KR              74..75
     AlphaRep        80..88
                     /label="AWAlpha"
     KR              89..90
     AlphaRep        97..105
                     /label="AWAlpha"
     KR              106..107
     AlphaRep        118..126
                     /label="AWAlpha"
     KR              130..131
     AlphaRep        144..152
                     /label="AWAlpha"
     KR              153..154
     KR              166..167
     KR              179..180
     AlphaRep        221..229
                     /label="AWAlpha"
     KR              230..231
     AlphaRep        236..244
                     /label="AWAlpha"
     KR              245..246
     AlphaRep        255..263
                     /label="AWAlpha"
     KR              264..265
     AlphaRep        270..278
                     /label="AWAlpha"
     KR              281..282

```



```

AlphaRep      291..299
               /label="AWAlpha"
KR            303..304
AlphaRep      321..329
               /label="AWAlpha"
KR            330..331
AlphaRep      344..352
               /label="AWAlpha"
KR            356..357
ORIGIN
  1 MKFTNAIALA ILAATATAVA VPEPWCGRPG QPCKREAVAV AAPVAEAWCG
RPGQPCKRTS
  61 EAEAWCGRPG QPCKRDAEPW CGRPGQPCKR EALPKAWCGR PGQPCKRTPL
AKAEAEAWCG
  121 RPGQPCRKNK RAAEAVAEAF AEPWCGRPGQ PCKRDAEAEV SEAAIKRCNM
VGGACFEAKR
  181 LARDLAEATA ETVEDSDAFL ESLNIETREV SEVVAREAEA WCGRPGQPCK
RDAEAWCGRP
  241 GQPCKREALA EAEAWCGRPG QPCKRTAEAW CGRPGQPCKE KREADPEAEA
WCGRPGQPCS
  301 AVKRAAEAIA EALAEPTAEA WCGRPGQPCK REALAEAEAN AEAWCGRPGQ
PCRKAKRDAF
  361 ALAYAADIAL AQL*
//
LOCUS      B_medusae_ppg1      393 aa      linear      UNA
FEATURES      Location/Qualifiers
  AlphaRep      25..33
                /label="AWAlpha"
  KR            34..35
  AlphaRep      48..56
                /label="AWAlpha"
  KR            57..58
  AlphaRep      65..73
                /label="AWAlpha"
  KR            74..75
  AlphaRep      80..88
                /label="AWAlpha"
  KR            89..90
  AlphaRep      97..105
                /label="AWAlpha"
  KR            106..107
  AlphaRep      118..126
                /label="AWAlpha"
  KR            130..131
  AlphaRep      144..152
                /label="AWAlpha"
  KR            153..154
  KR            166..167
  KR            179..180
  AlphaRep      221..229
                /label="AWAlpha"
  KR            230..231
  AlphaRep      236..244
                /label="AWAlpha"
  KR            245..246
  AlphaRep      255..263

```

```

                /label="AWAlpha"
KR              264..265
AlphaRep       274..282
                /label="AWAlpha"
KR              283..284
AlphaRep       289..297
                /label="AWAlpha"
KR              300..301
AlphaRep       310..318
                /label="AWAlpha"
KR              322..323
AlphaRep       340..348
                /label="AWAlpha"
KR              349..350
AlphaRep       363..371
                /label="AWAlpha"
KR              375..376

```

```

ORIGIN
      1 MKFTNAIALA ILAATATAVA VPEPWCGRPG QPCKREAVAV AAPVAEAWCG
RPGQPCKRTP
      61 EAEAWCGRPG QPCKRDAEPW CGRPGQPCKR EALPEAWCGR PGQPCKRTPL
AEAEAEAWCG
      121 RPGQPCRKNK RAAEAVAEAF AEPWCGRPGQ PCKRDAEADV SEAAIKRCNM
VGGACFEAKR
      181 LARDLAEATA ETVEDSDLFL RSLNIETREV SEVVAREAEA WCGRPGQPCK
RDAEAWCGRP
      241 GQPCKREALA EAEAWCGRPG QPCKREALAE AEAWCGRPGQ PCKRTAEPWC
GRPGQPCKEK
      301 READPEAEAW CGRPGQPCRA VKRAAEIAIE ALAEPTAEAW CGRPGQPCKR
EALAEAEANA
      361 EAWCGRPGQP CRKAKRDAFA LAYAADVALA QL*

```

```

//
LOCUS      B_paeoniae_ppg1      344 aa      linear      UNA
FEATURES
      AlphaRep      25..33
                        /label="AWAlpha"
      KR              34..35
      AlphaRep       48..56
                        /label="AWAlpha"
      KR              57..58
      AlphaRep       65..73
                        /label="AWAlpha"
      KR              74..75
      AlphaRep       86..94
                        /label="AWAlpha"
      KR              98..99
      AlphaRep      112..120
                        /label="AWAlpha"
      KR              121..122
      KR              134..135
      KR              147..148
      AlphaRep      189..197
                        /label="AWAlpha"
      KR              198..199
      AlphaRep1     206..214
                        /label="AWAlpha"

```

```

KR                215..216
AlphaRep          225..233
                  /label="AWAlpha"
KR                234..235
AlphaRep          240..248
                  /label="AWAlpha"
KR                251..252
AlphaRep          261..269
                  /label="AWAlpha"
KR                273..274
AlphaRep          291..299
                  /label="AWAlpha"
KR                300..301
AlphaRep          314..322
                  /label="AWAlpha"
KR                326..327
ORIGIN
      1 MKFTNAIALA ILAATATAVA VPEPWCGRPG QPCKREAVAV AAPVAEAWCG
RPGQPCKREA
      61 LPEAWCGRPG QPCKRTPLAE AEAEAWCGRP GQPCRKNKRA AEAVAEFAE
PWCGRPGQPC
      121 KRDAEADVSE AAIKRCNMVG GACFEAKRLA RDLAEATAET VEDADAFLES
LNIETREVSE
      181 VVAREAEAWC GRPGQPCKRE ALVEAWCGRS GQPCKREALA EAEAWCGRPG
QPCKRTAEPW
      241 CGRPGQPCKE KREADPEAEA WCGRPGQPCR AVKRAAEAIA EALAEPTAEA
WCGRPGQPCK
      301 REALAEAEAN AEAWCGRPGQ PCRKAKRDTF ALAYAADIAL AQL*
//
LOCUS      B_porri_ppg1      169 aa      linear      UNA
FEATURES      Location/Qualifiers
      AlphaRep      25..33
                  /label="AWAlpha"
      KR            34..35
      AlphaRep      48..56
                  /label="AWAlpha"
      KR            57..58
      AlphaRep      65..73
                  /label="AWAlpha"
      KR            74..75
      AlphaRep      86..94
                  /label="AWAlpha"
      KR            98..99
      AlphaRep      116..124
                  /label="AWAlpha"
      KR            125..126
      AlphaRep      139..147
                  /label="AWAlpha"
      KR            151..152
ORIGIN
      1 MKFTNAIALA MLAATATAVA VPEPWCGRPG QPCKREAVAV AAPVAEAWCG
RPGQPCKRTP
      61 EAEAWCGRPG QPCKRTPLAE AEAEAWCGRP GQPCRAVKRA AEAI AEALAE
PTAEAWCGRP
      121 GQPCKREALA EAEANAEAWC GRPGQPCRKA KRDAFALAYA ADIALAQL*
//

```

LOCUS B\_pseudocinerea\_ppg1 374 aa linear  
UNA

FEATURES Location/Qualifiers

AlphaRep	25..33	/label="AWAlpha"
KR	34..35	
AlphaRep	48..56	/label="AWAlpha"
KR	57..58	
AlphaRep	65..73	/label="AWAlpha"
KR	74..75	
AlphaRep	80..88	/label="AWAlpha"
KR	89..90	
AlphaRep	97..105	/label="AWAlpha"
KR	106..107	
AlphaRep	118..126	/label="AWAlpha"
KR	130..131	
AlphaRep	144..152	/label="AWAlpha"
KR	153..154	
KR	166..167	
KR	179..180	
AlphaRep	221..229	/label="AWAlpha"
KR	230..231	
AlphaRep	236..244	/label="AWAlpha"
KR	245..246	
AlphaRep	255..263	/label="AWAlpha"
KR	264..265	
AlphaRep	270..278	/label="AWAlpha"
KR	281..282	
AlphaRep	291..299	/label="AWAlpha"
KR	303..304	
AlphaRep	321..329	/label="AWAlpha"
KR	330..331	
AlphaRep	344..352	/label="AWAlpha"
KR	356..357	

ORIGIN

1 MKFTNAIALA ILAATATAVA VPEPWCGRPG QPCKREAVAV AAPVAEPWCG  
RPGQPCKRTP  
61 EAEAWCGRPG QPCKRDAEPW CGRPGQPCKR EALPEAWCGR PGQPCKRTPL  
AEAEAEAWCG  
121 RPGQPCRKNK RAAEAVAEAF AEPWCGRPGQ PCKRDAEADV SEAAIKRCNM  
VGGACFEAKR  
181 LARDLAEATA ETVEDSDLFL RSLNIETREV SEVVAREAEA WCGRPGQPCK  
RDAEAWCGRP

241 GQPCKREALA EAEAWCGRPG QPCKRTAEPW CGRPGQPCKE KREADPEAEA  
 WCGRPGQPCR  
 301 AVKRAAEIA EALAEPTAEA WCGRPGQPCK REALAEAEAN AEAWCGRPGQ  
 PCRKAKRDAF  
 361 ALAYAADVAL AQL\*

//

LOCUS B\_sinoallii\_ppg1 374 aa linear UNA

FEATURES Location/Qualifiers

AlphaRep	25..33	/label="AWAlpha"
KR	34..35	
AlphaRep	48..56	/label="AWAlpha"
KR	57..58	
AlphaRep	65..73	/label="AWAlpha"
KR	74..75	
AlphaRep	80..88	/label="AWAlpha"
KR	89..90	
AlphaRep	97..105	/label="AWAlpha"
KR	106..107	
AlphaRep	118..126	/label="AWAlpha"
KR	130..131	
AlphaRep	144..152	/label="AWAlpha"
KR	153..154	
KR	166..167	
KR	179..180	
AlphaRep	221..229	/label="AWAlpha"
KR	230..231	
AlphaRep	236..244	/label="AWAlpha"
KR	245..246	
AlphaRep	255..263	/label="AWAlpha"
KR	264..265	
AlphaRep	270..278	/label="AWAlpha"
KR	281..282	
AlphaRep	291..299	/label="AWAlpha"
KR	303..304	
AlphaRep	321..329	/label="AWAlpha"
KR	330..331	
AlphaRep	344..352	/label="AWAlpha"
KR	356..357	

ORIGIN

1 MKFTNAIALA ILAATATAVA VPEPWCGRPG QPCKREAVAV AAPVAEAWCG  
 RPGQPCKRTP

```

        61 EAEAWCGRPG QPCKRDAEPW CGRPGQPCKR EALPEAWCGR PGQPCKRTPL
AEAEAEAWCG
        121 RPGQPCHKNK RAAEAVAEAF AEPWCGRPGQ PCKRDAEADI SEAAIKRCNM
VGGACFEAKR
        181 LARDLAEATA ETVEDADAFI ESLNIETREV SEVVAREAEA WCGRPGQPCK
RDAEAWCGRP
        241 GQPCKREALA EAEAWCGRPG QPCKRTAEPW CGRPGQPCKE KREADPEAEA
WCGRPGQPCR
        301 AVKRAAEIA EALAEPTAEA WCGRPGQPCK REALAEAEAN AEAWCGRPGQ
PCRKAKRDAF
        361 ALAYAADIAL AQL*

```

//

LOCUS B\_tulipae\_ppg1 378 aa linear UNA

FEATURES Location/Qualifiers

```

AlphaRep 25..33
           /label="AWAlpha"
KR        34..35
AlphaRep 48..56
           /label="AWAlpha"
KR        57..58
AlphaRep 65..73
           /label="AWAlpha"
KR        74..75
AlphaRep 80..88
           /label="AWAlpha"
KR        89..90
AlphaRep 97..105
           /label="AWAlpha"
KR        106..107
AlphaRep 118..126
           /label="AWAlpha"
KR        130..131
AlphaRep 144..152
           /label="AWAlpha"
KR        153..154
KR        166..167
KR        179..180
AlphaRep 221..229
           /label="AWAlpha"
KR        230..231
AlphaRep 240..248
           /label="AWAlpha"
KR        249..250
AlphaRep 259..267
           /label="AWAlpha"
KR        268..269
AlphaRep 274..282
           /label="AWAlpha"
KR        285..286
AlphaRep 295..303
           /label="AWAlpha"
KR        307..308
AlphaRep 325..333
           /label="AWAlpha"
KR        334..335
AlphaRep 348..356

```

```

                                /label="AWAlpha"
KR                                360..361
ORIGIN
    1 MKFTNAIALA ILAATATAVA VPEPWCGRPG QPCKREAVAV AAPVAETWCG
RPGQPCKRTP
    61 EAEAWCGRPG QPCKRDAEPW CGRPGQPCKR EALPEAWCGR PGQPCKRTPL
AEAEAEAWCG
    121 RPGQPCRKNK RAAEAVAEAF AEPWCGRPGQ PCKRDAEADV SEAAIKRCNM
VGGACFEAKR
    181 LARDLAEATA ETVEDSDAFL ESLNIETREV SEVVAREAEA WCGRPGQPCK
REALAEAEAW
    241 CGRPGQPCKR EALAEAEAWC GRPGQPCKRT AEPWCGRPGQ PCKEKREADP
EAEAWCGRPG
    301 QPCRAVKRAA EAIAEALAEP TAEAWCGRPG QPCKREALAE AEANAEAWCG
RPGQPCRKAK
    361 RDAFALAYAA DIALAQL*
//

```

```

LOCUS      C_camelliae_ppg1      359 aa      linear      UNA
FEATURES             Location/Qualifiers
     AlphaRep        25..33
                        /label="AWAlpha"
     KR              34..35
     AlphaRep        48..56
                        /label="AWAlpha"
     KR              57..58
     AlphaRep        65..73
                        /label="AWAlpha"
     KR              74..75
     AlphaRep        80..88
                        /label="AWAlpha"
     KR              89..90
     AlphaRep        97..105
                        /label="AWAlpha"
     KR              106..107
     AlphaRep        118..126
                        /label="AWAlpha"
     KR              130..131
     KR              155..156
     KR              168..169
     AlphaRep        210..218
                        /label="AWAlpha"
     KR              219..220
     AlphaRep        225..233
                        /label="AWAlpha"
     KR              234..235
     AlphaRep        240..248
                        /label="AWAlpha"
     KR              249..250
     AlphaRep        255..263
                        /label="AWAlpha"
     KR              266..267
     AlphaRep        276..284
                        /label="AWAlpha"
     KR              288..289
                        /label="RR"
     AlphaRep        306..314

```

```

                /label="AWAlpha"
KR              315..316
AlphaRep       329..337
                /label="AWAlpha"
KR              341..342
ORIGIN
  1 MKFTNAIALA ILAATATAVA LPEPWCGRPG QPCKREAVAI AAPAPEPWCG
RPGQPCKRTP
  61 EAEAWCGRPG QPCKRDAEPW CGRPGQPCKR EALPEAWCGR PGQPCKRTAL
AEAEAEAWCG
  121 RPGQPCRKNK RAAEALAEAF AEPTEETDVD EAVVKRCNMV GGACFEAKRL
ARDLAEATAE
  181 TSEDATAFLE GLNIETREAS EIIAREAEAW CGRPGQPCKR SAEPWCGRPG
QPCKRDAEPW
  241 CGRPGQPCKR DAEPWCGRPG QPCKEKREAD PEAEAWCGRP GQPCRAVRA
AEAMADALAE
  301 PTAEAWCGRP GQPCKREALA EAEANAEAWC GRPGQPCRKA KRDAMALAYA
ADVALAQL*
//

```

```

LOCUS          C_shiraiana_ppg1          327 aa          linear      UNA
FEATURES              Location/Qualifiers
  AlphaRep           25..33
                    /label="AWAlpha"
  KR                 34..35
  AlphaRep           48..56
                    /label="AWAlpha"
  KR                 57..58
  AlphaRep           63..71
                    /label="AWAlpha"
  KR                 72..73
  AlphaRep           80..88
                    /label="AWAlpha"
  KR                 89..90
  AlphaRep           101..109
                    /label="AWAlpha"
  KR                 113..114
  KR                 138..139
  KR                 151..152
  KR                 165..166
  AlphaRep           193..201
                    /label="AWAlpha"
  KR                 202..203
  AlphaRep           208..216
                    /label="AWAlpha"
  KR                 217..218
  AlphaRep           223..231
                    /label="AWAlpha"
  KR                 234..235
  AlphaRep           244..252
                    /label="AWAlpha"
  KR                 256..257
                    /label="RR"
  AlphaRep           274..282
                    /label="AWAlpha"
  KR                 283..284
  AlphaRep           297..305

```



```

                                /label="AWAlpha"
KR                                309..310
ORIGIN
    1 MKFTNAIALA ILAATATAVA IPEPWGCRPG QPCKREAVAV AAPIPEPWCG
RPGQPCKRDA
    61 EPWCGRPGQP CKREALPEAW CGRPGQPCKR TPLAEAEAEA WCGRPGQPCR
KNKRAAEALA
    121 EAFAEPAAEA DVDEAVIKRC NMVGGACFEA KRLARDLAEA TAETKRDADA
FLEGLNIESR
    181 EVSEIVAREA EAWCGRPGQP CKRNAEAWCG RPGQPCKRDA EPWCGRPGQP
CKEKREADPE
    241 AEAWCGRPGQ PCRAVRRAAE AMAEALAEPT AEAWCGRPGQ PCKREALAEA
EANAEAWCGR
    301 PGQPCRKAKR DAFALAYAAD VVLAQL*
//
LOCUS      M_curreyana_ppg1      342 aa      linear      UNA
FEATURES             Location/Qualifiers
     AlphaRep             25..33
                             /label="AWAlpha"
     KR                    34..35
     AlphaRep             48..56
                             /label="AWAlpha"
     KR                    57..58
     AlphaRep             63..71
                             /label="AWAlpha"
     KR                    72..73
     AlphaRep             80..88
                             /label="AWAlpha"
     KR                    89..90
     AlphaRep             101..109
                             /label="AWAlpha"
     KR                    113..114
     AlphaRep             127..135
                             /label="AWAlpha"
     KR                    136..137
     KR                    149..150
     KR                    162..163
     AlphaRep             204..212
                             /label="AWAlpha"
     KR                    213..214
     AlphaRep             219..227
                             /label="AWAlpha"
     KR                    228..229
     AlphaRep             238..246
                             /label="AWAlpha"
     KR                    249..250
     AlphaRep             259..267
                             /label="AWAlpha"
     KR                    271..272
     AlphaRep             289..297
                             /label="AWAlpha"
     KR                    298..299
     AlphaRep             312..320
                             /label="AWAlpha"
     KR                    324..325
ORIGIN

```

```

      1 MKFTNAIALA ILAATATAVA VPEPWCGRPG QPCKREAVAI ADPIAEAWCG
RPGQPCKRDA
      61 EPWCGRPGQP CKREALPEAW CGRPGQPCKR SPLAEAEAEA WCGRPGQPCR
KNKRAAEAVA
      121 EAFAEPWCGR PGQPCKRDAE ADVDEAVIKR CNMVGACFE AKRLARDLAE
ATAETVEDPD
      181 TFLEGLNIET REVSEIVARE AEAWCGRPGQ PCKRSAEPWC GRPGQPCKRD
AQPEAEPWCG
      241 RPGQPCKEKR EADAEAEAWC GRPGQPCRAV KRAAEIAIEA LAEPTAEAWC
GRPGQPCKRE
      301 ALAEAEANAE AWCGRPGQPC RKAKRDAFAL AYAADVALAQ L*

```

//

LOCUS M\_duriaeana\_ppg1 342 aa linear UNA

FEATURES Location/Qualifiers

AlphaRep	25..33	/label="AWAlpha"
KR	34..35	
AlphaRep	48..56	/label="AWAlpha"
KR	57..58	
AlphaRep	63..71	/label="AWAlpha"
KR	72..73	
AlphaRep	80..88	/label="AWAlpha"
KR	89..90	
AlphaRep	101..109	/label="AWAlpha"
KR	113..114	
AlphaRep	127..135	/label="AWAlpha"
KR	136..137	
KR	149..150	
KR	162..163	
AlphaRep	204..212	/label="AWAlpha"
KR	213..214	
AlphaRep	219..227	/label="AWAlpha"
KR	228..229	
AlphaRep	238..246	/label="AWAlpha"
KR	249..250	
AlphaRep	259..267	/label="AWAlpha"
KR	271..272	
AlphaRep	289..297	/label="AWAlpha"
KR	298..299	
AlphaRep	312..320	/label="AWAlpha"
KR	324..325	

ORIGIN

```

      1 MKFTNAIALA ILAATATAVA VPEPWCGRPG QPCKREAVAV ADPVAEAWCG
RPGQPCKREA

```

```

        61 EPWCGRPGQP CKREALPEAW CGRPGQPCKR SPLAEAEAEA WCGRPGQPCR
KNKRAAEAVA
        121 EAFAEPWCGR PGQPCKRDAE ADVDEAVVKR CNMVGACFE AKRLARDLAE
ATAETVEDPD
        181 AYLEGLNIET REVSEIVARE AEAWCGRPGQ PCKRSAEPWC GRPGQPCKRD
AQPEAEPWCG
        241 RPGQPCKEKR EADPEAEAWC GRPGQPCRAV KRAAEAIAEA LAEPTAEAWC
GRPGQPCKRE
        301 ALAEAEANAE AWCGRPGQPC RKAKRDAFAL AYAADVALAQ L*

```

//

LOCUS M\_scirpicola\_ppg1 342 aa linear UNA

FEATURES Location/Qualifiers

```

AlphaRep 25..33
           /label="AWAlpha"
KR        34..35
AlphaRep 48..56
           /label="AWAlpha"
KR        57..58
AlphaRep 63..71
           /label="AWAlpha"
KR        72..73
AlphaRep 80..88
           /label="AWAlpha"
KR        89..90
AlphaRep 101..109
           /label="AWAlpha"
KR        113..114
AlphaRep 127..135
           /label="AWAlpha"
KR        136..137
KR        149..150
KR        162..163
AlphaRep 204..212
           /label="AWAlpha"
KR        213..214
AlphaRep 219..227
           /label="AWAlpha"
KR        228..229
AlphaRep 238..246
           /label="AWAlpha"
KR        249..250
AlphaRep 259..267
           /label="AWAlpha"
KR        271..272
AlphaRep 289..297
           /label="AWAlpha"
KR        298..299
AlphaRep 312..320
           /label="AWAlpha"
KR        324..325

```

ORIGIN

```

        1 MKFTNAIALA ILAATATAVA VPEPWCGRPG QPCKREAVAV ADPVAEAWCG
RPGQPCKREA

```

```

        61 EPWCGRPGQP CKREALPEAW CGRPGQPCKR SPLAEAEAEA WCGRPGQPCR
KNKRAAEAVA

```

```

121 EAFAEPWCGR PGQPCKRDAE ADVDEAVVKR CNMVGACFE AKRLARDLAE
ATAETVEDPE
181 AYLEGLNIET REVSEIVARE AEAWCGRPGQ PCKRSAEPWC GRPGQPCKRD
AQPEAEPWCG
241 RPGQPCKEKR EADPEAEAWC GRPGQPCRAV KRAAEAMAEA LAEPTAEAWC
GRPGQPCKRE
301 ALAEAEANAE AWCGRPGQPC RKAKRDAFAL AYAADVALAQ L*

```

//

LOCUS M\_aucupariae\_ppg1 316 aa linear UNA

FEATURES Location/Qualifiers

```

AlphaRep 27..35
          /label="AWAlpha"
KR        36..37
AlphaRep 50..58
          /label="AWAlpha"
KR        59..60
AlphaRep 65..73
          /label="AWAlpha"
KR        74..75
AlphaRep 80..88
          /label="AWAlpha"
KR        89..90
AlphaRep 97..105
          /label="AWAlpha"
KR        106..107
AlphaRep 118..126
          /label="AWAlpha"
KR        130..131
KR        155..156
KR        168..169
AlphaRep 210..218
          /label="AWAlpha"
KR        219..220
AlphaRep1 233..241
          /label="AWAlpha"
KR        245..246
          /label="RR"
AlphaRep 263..271
          /label="AWAlpha"
KR        272..273
AlphaRep 286..294
          /label="AWAlpha"
KR        298..299

```

ORIGIN

```

1 MKFTNAIALA ILAATAAAVA VPEAQPWCGR PGQGCKREAL AAPVSEAQPW
CGRPGQGCKR
61 EAEAWCGRPG QGCKRDAEPW CGRPGQGCKR EALPEAWCGR PGQGCKRAPL
PEAEAEAWCG
121 RPGQGCRKTK RAAEALAEAL AEPEAEADVE EEVAKRCNMV GGACFEAKRL
ARDLAETVAE
181 TTADPAAYLE SLNLETREVS EVIAREAEAW CGRPGQGCKR NAEAEADAEA
EAWCGRPGQP
241 CRKVRSAEA MAEALAEATP VAWCGRPGQG CKREALAEAE ANAEAWCGRP
QGQCRKAKRD
301 AYALAYAADM VLKQL*

```

//

```

LOCUS      M_fructicola_ppg1      291 aa      linear      UNA
FEATURES   Location/Qualifiers
   AlphaRep      27..35
                  /label="AWAlpha"
   KR            36..37
   AlphaRep      54..62
                  /label="AWAlpha"
   KR            63..64
   AlphaRep      69..77
                  /label="AWAlpha"
   KR            78..79
   AlphaRep      84..92
                  /label="AWAlpha"
   KR            93..94
   AlphaRep      101..109
                  /label="AWAlpha"
   KR            110..111
   AlphaRep      122..130
                  /label="AWAlpha"
   KR            134..135
   KR            159..160
   KR            172..173
   AlphaRep      214..222
                  /label="AWAlpha"
   KR            223..224
   AlphaRep      237..245
                  /label="AWAlpha"
   KR            247..248
   AlphaRep      261..269
                  /label="AWAlpha"
   KR            273..274

ORIGIN
    1 MKFTNAIALA ILAATATAVA VPEAQPWCGR PGQGCKREAV AAPVAAPVSE
AQPWCGRPGQ
    61 GCKREAEAWC GRPGQGCKRD AEPWCGRPGQ GCKREALPEA WCGRPGQGCK
RAPLAEAEAE
    121 AWCGRPGQGC RKTkRAEAL AEALAEPEAE ADVVEAVIKR CNMVGACFE
AKRLARDLAE
    181 TVAETTS DPA AYLESNLET REVSEVVARE AEA WCGRPGQ GCKRNAEAEA
DAEAEAWCGR
    241 PGQGCRKREA LAEAEANAEA WCGRPGQGCR KAKRDAYALA YAADMALKQL *
//
LOCUS      M_fructigena_ppg1      301 aa      linear      UNA
FEATURES   Location/Qualifiers
   AlphaRep      35..43
                  /label="AWAlpha"
   KR            44..45
   AlphaRep      50..58
                  /label="AWAlpha"
   KR            59..60
   AlphaRep      65..73
                  /label="AWAlpha"
   KR            74..75
   AlphaRep      82..90
                  /label="AWAlpha"
   KR            91..92

```

```

AlphaRep      103..111
               /label="AWAlpha"
KR            115..116
KR            140..141
KR            153..154
AlphaRep      195..203
               /label="AWAlpha"
KR            204..205
AlphaRep      218..226
               /label="AWAlpha"
KR            230..231
               /label="RR"
AlphaRep      248..256
               /label="AWAlpha"
KR            257..258
AlphaRep      271..279
               /label="AWAlpha"
KR            283..284

ORIGIN
      1 MKFTNAIALA ILAATATAVA VAAPAAAPVS EAQPWCGRPG QGCKREAEAW
CGRPGQGCKR
     61 DAEPWCGRPG QGCKREALPE AWCGRPGQGC KRAPLPEAEA EAWCGRPGQG
CRKTKRAAEA
    121 LAEALAEPEA EADVEEAVIK RCNMVGGACF EAKRLARDLA ETVAETTS DP
AAYLES LNLE
    181 TREVSEVVAR EAEAWCGRPG QGCKRNAEAE ADAEAEAWCG RPGQGCRKVR
RAAEVMAEAL
    241 AEATPVAWCG RPGQGCKREA LAEAEANA EA WCGRPGQGCR KAKRDAYALA
YAADLALKQL
    301 *

//
LOCUS      M_laxa_ppg1      320 aa      linear      UNA
FEATURES   Location/Qualifiers
     AlphaRep      27..35
                 /label="AWAlpha"
     KR            36..37
     AlphaRep      54..62
                 /label="AWAlpha"
     KR            63..64
     AlphaRep      69..77
                 /label="AWAlpha"
     KR            78..79
     AlphaRep      84..92
                 /label="AWAlpha"
     KR            93..94
     AlphaRep      101..109
                 /label="AWAlpha"
     KR            110..111
     AlphaRep      122..130
                 /label="AWAlpha"
     KR            134..135
     KR            159..160
     KR            172..173
     AlphaRep      214..222
                 /label="AWAlpha"
     KR            223..224

```

```

AlphaRep      237..245
               /label="AWAlpha"
KR            249..250
               /label="RR"
AlphaRep      267..275
               /label="AWAlpha"
KR            276..277
AlphaRep      290..298
               /label="AWAlpha"
KR            302..303
ORIGIN
1 MKFTNAIALA ILAATATAVA VPEAQPCWGR PGQGCKREAI AAPAAAPVSE
AQPWCGRPGQ
61 GCKREAEAWC GRPGQGCKRD AEPWCGRPGQ GCKREALPEA WCGRPGQGCK
RAPLPEAEAE
121 AWCGRPGQGC RGTKRAAEAL AEALAEPEAE ADAEEAVIKR CNMVGGACFE
AKRLARDLAE
181 TVAETTSDDPA AYLESLNLET REVSEVVARE AEAWCGRPGQ GCKRNAEAEA
DAEAEAWCGR
241 PGQGCRKVR AAEAMAEALA EATPVAWCGR PGQGCKREAL AEAEANAEAW
CGRPGQGRK
301 AKRDAYALAY AADLALKQL*
//
LOCUS      M_polystroma_ppg1      301 aa      linear      UNA
FEATURES      Location/Qualifiers
AlphaRep      35..43
               /label="AWAlpha"
KR            44..45
AlphaRep      50..58
               /label="AWAlpha"
KR            59..60
AlphaRep      65..73
               /label="AWAlpha"
KR            74..75
AlphaRep      82..90
               /label="AWAlpha"
KR            91..92
AlphaRep      103..111
               /label="AWAlpha"
KR            115..116
KR            140..141
KR            153..154
AlphaRep      195..203
               /label="AWAlpha"
KR            204..205
AlphaRep      218..226
               /label="AWAlpha"
KR            230..231
               /label="RR"
AlphaRep      248..256
               /label="AWAlpha"
KR            257..258
AlphaRep      271..279
               /label="AWAlpha"
KR            283..284
ORIGIN

```

```

1 MKFTNAIALA ILAATATAVA VAAPAAAPVS EAQPWCGRPG QGCKREAEAW
CGRPGQGCKR
61 DAEPWCGRPG QGCKREALPE AWCGRPGQGC KRAPLPEAEA EAWCGRPGQG
CRKTKRAAEA
121 LAEALAEPEA EADVVEAVIK RCNMVGGACF EAKRLARDLA ETVAETTS DP
AAYLKSLNLE
181 TREVSEVVAR EAEAWCGRPG QGCKRNAEAE ADAEAEAWCG RPDGQCRKVR
RAAEAMAEAL
241 AEATPVAWCG RPDGQCKREA LAEAEANAEA WCGRPGQGC R KAKRDAYALA
YAADLALKQL
301 *

```

//

LOCUS M\_vacciniicorymbosi\_ppg1 288 aa linear  
UNA

FEATURES Location/Qualifiers

AlphaRep	27..35
	/label="AWAlpha"
KR	36..37
AlphaRep1	50..58
	/label="AWAlpha"
KR	59..60
AlphaRep	65..73
	/label="AWAlpha"
KR	74..75
AlphaRep2	86..94
	/label="AWAlpha"
KR	98..99
KR	123..124
KR	136..137
AlphaRep	178..186
	/label="AWAlpha"
KR	187..188
AlphaRep	201..209
	/label="AWAlpha"
KR	213..214
	/label="RR"
AlphaRep	231..239
	/label="AWAlpha"
KR	240..241
AlphaRep	258..266
	/label="AWAlpha"
KR	270..271

ORIGIN

```

1 MKFTNSIALA ILAATAIAVA VPETQPWCGR PGQPCKREAV AAPVSEAQPW
CGRPGKPKCR
61 NAEPWCGRPG QPCKRAPLPE AEAEAWCGRP GQGCRKTKRA AEALAEALAE
PEAEADVVEA
121 VVKRCNMVGG ACFEAKRLAR DLAETVAETT ADPAAYLESL TLETREASEV
AAREAEAWCG
181 RPDGQCKRSA EAEADAEEAE WCGRPGQPCR KVRRSAEAMA EALAEATPVA
WCGRPGQPKR
241 RGAEAEALAE AEANAEAWCG RPDGQCKRKA RNAYALAYAA DMALKQL*

```

//

LOCUS S\_borealis\_ppg1 299 aa linear UNA

FEATURES Location/Qualifiers

AlphaRep	27..35
----------	--------



```

        /label="AWAlpha"
KR      36..37
AlphaRep1 48..56
        /label="AWAlpha"
KR      57..58
AlphaRep1 69..77
        /label="AWAlpha"
KR      81..82
KR      106..107
KR      119..120
AlphaRep1 161..169
        /label="AWAlpha"
KR      170..171
AlphaRep1 180..188
        /label="AWAlpha"
KR      189..190
AlphaRep1 195..203
        /label="AWAlpha"
KR      206..207
AlphaRep1 216..224
        /label="AWAlpha"
KR      228..229
        /label="RR"
AlphaRep1 246..254
        /label="AWAlpha"
KR      255..256
AlphaRep1 269..277
        /label="AWAlpha"
KR      281..282
ORIGIN
    1 MKFTNAIALA ILAAIATAAA VPEAQPWCGR PGQACKREAV AGPVAEPWCG
RPGQPCKRTP
    61 LAEAEAEAWC GRPGQPCRKN KRAAEALAEA FAEPAAEADV DEAVIKRCNM
VGGACFEAKR
    121 LARDLAEATA ETVEDSTAFLESLNIETREI SEVVAREAEA WCGRPGQPCK
RDAQPEAEAW
    181 CGRPGQPCKR NAEPWCGRPG QPCKEKREAD AEAEAWCGRP GQPCRAVRR
AEAVAEALAE
    241 ATAEAWCGRP GQPCKREAIA EAEANAEAWC GRPGQPCRKA KRDAYALAY
ADVALAQL*
//
LOCUS      S_cepivorum_ppg1      359 aa      linear      UNA
FEATURES
    AlphaRep      25..33
                    /label="AWAlpha"
    KR      34..35
    AlphaRep      48..56
                    /label="AWAlpha"
    KR      57..58
    AlphaRep      65..73
                    /label="AWAlpha"
    KR      74..75
    AlphaRep      80..88
                    /label="AWAlpha"
    KR      89..90
    AlphaRep      97..105

```

```

        /label="AWAlpha"
KR      106..107
AlphaRep 118..126
        /label="AWAlpha"
KR      130..131
KR      155..156
KR      168..169
KR      182..183
AlphaRep 210..218
        /label="AWAlpha"
KR      219..220
AlphaRep 225..233
        /label="AWAlpha"
KR      234..235
AlphaRep 240..248
        /label="AWAlpha"
KR      249..250
AlphaRep 255..263
        /label="AWAlpha"
KR      266..267
AlphaRep 276..284
        /label="AWAlpha"
KR      288..289
        /label="RR"
AlphaRep 306..314
        /label="AWAlpha"
KR      315..316
AlphaRep 329..337
        /label="AWAlpha"
KR      341..342
ORIGIN
    1 MKFTNAIALA ILAATATAVA VPEPWCGRPG QPCKREAVAV AAPIAEPWCG
RPGQPCKRSP
    61 EAEAWCGRPG QPCKRDAEPW CGRPGQPCKR EALPEAWCGR PGQPCKRTPL
AEAEAEAWCG
    121 RPGQPCRKNK RAAEALAEAF AEPAAEADVD EAVIKRCNMV GGACFEAKRL
ARDLAEATAE
    181 TKRDADAFLE GLNIESREVS EIVAREAEAW CGRPGQPCKR NAEAWCGRPG
QPCKREAEAW
    241 CGRPGQPCKR DAEPWCGRPG QPCKEKREAD PEAEAWCGRP GQPCRAVRR
AEAMADALAE
    301 PTAEAWCGRP GQPCKREALA EAEANAEAWC GRPGQPCRKA KRDAFALAYA
ADVALAQL*
//
LOCUS      S_glacialis_ppg1      380 aa      linear      UNA
FEATURES      Location/Qualifiers
    KR      31..32
    AlphaRep 42..50
        /label="AWAlpha"
    KR      53..54
    AlphaRep1 84..92
        /label="AWAlpha"
    KR      93..94
    AlphaRep 105..113
        /label="AWAlpha"
    KR      117..118

```

KR	142..143
KR	155..156
AlphaRep	197..205
	/label="AWAlpha"
KR	206..207
AlphaRep	212..220
	/label="AWAlpha"
KR	221..222
AlphaRep	227..235
	/label="AWAlpha"
KR	236..237
AlphaRep	242..250
	/label="AWAlpha"
KR	253..254
AlphaRep	263..271
	/label="AWAlpha"
KR	275..276
	/label="RR"
AlphaRep	293..301
	/label="AWAlpha"
KR	302..303
AlphaRep	310..318
	/label="AWAlpha"
KR	319..320
AlphaRep	327..335
	/label="AWAlpha"
KR	336..337
AlphaRep	350..358
	/label="AWAlpha"
KR	362..363

ORIGIN

```

1 MKFTSAIAIA ILAATATAAA IPAPSSDQPS KRNITATQDI AWCGRPGQPC
HIKRDALPDI
61 QAAAEAAVIC HPGQPCSQKH NPTWCGQPGR PCKRDALPDI QNVAWCGRPG
QPCHKNKRAA
121 QALAEALAEP ADGADVDEAV VKRCNMVGGGA CFEAKRLARD LAQTTAETSD
DAQTFLDGLN
181 VETREASEII AREAEAWCGR PGQPCKREAE AWCGRPGQPC KREAEAWCGR
PGQPCKRDAE
241 PWCGRPGQPC KEKREADPEA EAWCGRPGQP CRAVRRAAEA IAKALAEPTA
EAWCGRPGQP
301 CKRDALAEPW CGRPGQPCKR EADAGAWCGR PGQPCKREAL AVAEADAEAW
CGRPGQPCRK
361 AKRDAYALAY AADVALAQL*

```

//

LOCUS S\_sclerotiorum\_ppg1 326 aa linear UNA  
28-Dec-2021

DEFINITION

FEATURES Location/Qualifiers

sig_peptide	1..20
	/note="Cleavage site: 20^21: AVA-IP"
	/note="D-score: 0.798"
	/note="D-cutoff: 0.45"
	/note="Max C-score: 0.509"
	/note="Max S-score: 0.962"
	/note="Max Y-score: 0.677"

```

                /note="S-mean: 0.901"
                /note="Networks: SignalP-noTM"
AlphaRep      25..33
                /label="AWAlpha"
KR            34..35
AlphaRep      48..56
                /label="AWAlpha"
KR            57..58
AlphaRep      63..71
                /label="AWAlpha"
KR            72..73
AlphaRep      80..88
                /label="AWAlpha"
KR            89..90
AlphaRep      101..109
                /label="AWAlpha"
KR            113..114
KR            138..139
KR            151..152
KR            165..166
AlphaRep      193..201
                /label="AWAlpha"
KR            202..203
AlphaRep      208..216
                /label="AWAlpha"
KR            217..218
AlphaRep      223..231
                /label="AWAlpha"
KR            234..235
AlphaRep      244..252
                /label="AWAlpha"
KR            256..257
                /label="RR"
AlphaRep      274..282
                /label="AWAlpha"
KR            283..284
AlphaRep      297..305
                /label="AWAlpha"
KR            309..310
ORIGIN
  1 MKFTNAIALA ILAATATAVA IPEPWCGRPG QPCKREAVAV AAPIPEPWCG
RPGQPCKRDA
  61 EPWCGRPGQP CKREALPEAW CGRPGQPCKR TPLAEAEAEA WCGRPGQPCR
KNKRAAEALA
  121 EAFAEPAAEA DVDEAVIKRC NMVGGACFEA KRLARDLAEA TAETKRDADA
FLEGLNIESR
  181 EVSEIVAREA EAWCGRPGQP CKRNAEAWCG RPGQPCKRDA EPWCGRPGQP
CKEKREADPE
  241 AEAWCGRPGQ PCRAVRRAAE AMAEALAEPT AEAWCGRPGQ PCKREALAEA
EANAEAWCGR
  301 PGQPCRKAKR DAFALAYAAD VVLAQL
//
LOCUS      S_trifoliorum_ppg1      230 aa      linear      UNA
FEATURES
  AlphaRep      25..33
                /label="AWAlpha"

```

```

KR          34..35
AlphaRep1   46..54
             /label="AWAlpha"
KR          58..59
KR          83..84
KR          96..97
KR         110..111
AlphaRep2   138..146
             /label="AWAlpha"
KR         147..148
KR         164..165
AlphaRep3   174..182
             /label="AWAlpha"
KR         186..187
             /label="RR"
KR         212..213
ORIGIN
      1 MKFTNAIALA ILAATAAAVA VPEPWCGRPG QLCKRTPLAE AEAEAWCGRP
GRPCRKTKRA
      61 AEALAEAF AE PAAEAYVDEA VIKRCNMVGG ACFEAKRLAR DLAEATAETK
RDADAFLEGL
      121 NIESREVSEI VAREAEAWCG RPGQPCKRNA EAECGRPGQS CKEKRKADPE
AEAWCGSPGQ
      181 PCRAVRRAAE AMAEALAEPT AEAWCGPCRK AKRDAFALAY AANVALAQL*
//
LOCUS      C_homoeocarpa_ppg1      316 aa      linear      UNA
FEATURES
AlphaRep   25..33
             /label="AWAlpha"
KR         34..35
AlphaRep   42..50
             /label="AWAlpha"
KR         51..52
AlphaRep   59..67
             /label="AWAlpha"
KR         68..69
AlphaRep   80..88
             /label="AWAlpha"
KR         92..93
             /label="RR"
KR         119..120
KR         132..133
KR         146..147
             /label="RR"
AlphaRep   174..182
             /label="AWAlpha"
KR         183..184
AlphaRep   193..201
             /label="AWAlpha"
KR         202..203
AlphaRep   212..220
             /label="AWAlpha"
KR         223..224
AlphaRep   233..241
             /label="AWAlpha"
KR         245..246

```

```

AlphaRep          /label="RR"
                  263..271
KR                /label="AWAlpha"
                  272..273
AlphaRep          /label="AWAlpha"
                  286..294
KR                298..299
ORIGIN
1 MKLTNAIALA ILAATAAAVA IPEPWCGRPG QPCKRDALPE PWCGRPGQPC
KRDALPEAWC
61 GRPGQPCKRS ALAEPDAEAW CGRPGQPCRK VRRAAEALAK AMAEPVADVE
ADVDEAVVKKR
121 CNMIGGPCYE AKRLARDLAG VTASVRRDAD AFYEDLGIES REVSDKITRD
AEAWCGRPGQ
181 PCKRDAAPEA EPWCGRPGQP CKRDAAPEAE PWCGRPGQPC KEKREADPEA
EAWCGRPGQP
241 CRKVRRAAEA MAEALAEPTA EAWCGRPGQP CKREALAEAE ANAEAWCGRP
GQPCRKAKRD
301 AFALAYAADV ALQQL*
//
LOCUS          C_jacksonii_ppg1_trunc          342 aa          linear
UNA
FEATURES              Location/Qualifiers
AlphaRep          25..33
                  /label="AWAlpha"
KR                34..35
AlphaRep          42..50
                  /label="AWAlpha"
KR                51..52
AlphaRep          59..67
                  /label="AWAlpha"
KR                68..69
AlphaRep          80..88
                  /label="AWAlpha"
KR                92..93
                  /label="RR"
KR                119..120
KR                132..133
KR                146..147
                  /label="RR"
AlphaRep          238..246
                  /label="AWAlpha"
KR                249..250
AlphaRep          259..267
                  /label="AWAlpha"
KR                271..272
                  /label="RR"
AlphaRep          289..297
                  /label="AWAlpha"
KR                298..299
AlphaRep          312..320
                  /label="AWAlpha"
KR                324..325
ORIGIN
1 MKLTNAIALA ILAATAAAVA IPEPWCGRPG QPCKRDALPE PWCGRPGQPC
KRDALPEAWC

```

```

        61 GRPGQPCKRS ALAEPDAEAW CGRPGQPCRK VRRAAEALAK AMAEPVADVE
ADVDEAVVKR
        121 CNMIGGPCYE AKRLARDLAG VTASVRRDAD AFYEDLGIES REVSDKIARD
AEAWXXXXXX
        181 XXXXXXXXXXXX XXXXXXXXXXXX XXXXXXXXXXXX XXXXXXXXXXXX XXXXXXXXXXXD
AAPEAEPWCG
        241 RPGQPCKEKR EADPEAEAWC GRPGQPCRKV RRAAEAMAEA LAEPTAEAWC
GRPGQPCKRE
        301 ALAEAEANAE AWCGRPGQPC RKAKRDAFAL AYAADVALRQ L*

```

//

LOCUS C\_monteithiana\_ppg1 301 aa linear UNA

FEATURES Location/Qualifiers

```

AlphaRep 25..33
           /label="AWAlpha"
KR        34..35
AlphaRep 42..50
           /label="AWAlpha"
KR        51..52
AlphaRep 59..67
           /label="AWAlpha"
KR        68..69
AlphaRep 80..88
           /label="AWAlpha"
KR        92..93
           /label="RR"
KR        119..120
KR        132..133
KR        146..147
           /label="RR"
AlphaRep 174..182
           /label="AWAlpha"
KR        183..184
AlphaRep 197..205
           /label="AWAlpha"
KR        208..209
AlphaRep 218..226
           /label="AWAlpha"
KR        230..231
           /label="RR"
AlphaRep 248..256
           /label="AWAlpha"
KR        257..258
AlphaRep 271..279
           /label="AWAlpha"
KR        283..284

```

ORIGIN

```

1 MKLTNAIALA ILAATAAAVA IPEPWCGRPG QPCKRDALPE PWCGRPGQPC
KREALPEAWC
61 GRPGQPCKRS ALAEPDAEAW CGRPGQPCRK VRRAAEALAE AMAEPVADVE
ADVDEAVVKR
121 CNMIGGPCYE AKRLARDLAG VTASVRRDAD AFYEDLGIES RDVSDKIARD
AEAWCGRPGQ
181 PCKRDAAPEA APEAEPWCGR PGQPCKEKRE ADPEAEAWCG RPGQPCRKVR
RAAEAMAEAL
241 AEPTAEAWCG RPGQPCKREA LAEAEANAEA WCGRPGQPCR KAKRDAFALA
YAADVALRQL

```

```

    301 *
//
LOCUS      C_spCPB17_ppg1      314 aa      linear      UNA
FEATURES   Location/Qualifiers
    AlphaRep      25..33
                  /label="AWAlpha"
    KR            34..35
    AlphaRep      42..50
                  /label="AWAlpha"
    KR            51..52
    AlphaRep      59..67
                  /label="AWAlpha"
    KR            68..69
    AlphaRep      80..88
                  /label="AWAlpha"
    KR            92..93
                  /label="RR"
    KR            119..120
    KR            132..133
    KR            146..147
    AlphaRep      174..182
                  /label="AWAlpha"
    KR            183..184
    AlphaRep      195..203
                  /label="AWAlpha"
    KR            204..205
    AlphaRep      210..218
                  /label="AWAlpha"
    KR            221..222
    AlphaRep      231..239
                  /label="AWAlpha"
    KR            243..244
                  /label="RR"
    AlphaRep      261..269
                  /label="AWAlpha"
    KR            270..271
    AlphaRep      284..292
                  /label="AWAlpha"
    KR            296..297
ORIGIN
    1 MKFTNAIALA ILAATATAVA IPEPWCGRPG QPCKRDALPE PWCGRPGQPC
KREALPEAWC
    61 GRPGQPCRS ALAEPDAEAW CGRPGQPCRK VRRAAEALAE AMAEPAAEAE
ADVDEAVVKR
    121 CNIVGGACYE AKRLARDLAG VTASTKRDAF AFYEELGIES REVSDKVARD
AEAWCGRPGQ
    181 PCKRDAAPEA EAEAWCGRPG QPCKRDAEPW CGRPGQPCKE KREADPEAEA
WCGRPGQPCR
    241 QVRRAAEAMA EALAEPTAEA WCGRPGQPCK REALAEAEAN AEAWCGRPGQ
PCRKAKRDAF
    301 ALAYAADVAL AQL*
//
LOCUS      C_spSE16F4_ppg1      316 aa      linear      UNA
FEATURES   Location/Qualifiers
    AlphaRep      25..33
                  /label="AWAlpha"

```



```

KR          34..35
AlphaRep   42..50
           /label="AWAlpha"
KR          51..52
AlphaRep   59..67
           /label="AWAlpha"
KR          68..69
AlphaRep   80..88
           /label="AWAlpha"
KR          92..93
           /label="RR"
KR          119..120
KR          132..133
KR          146..147
           /label="RR"
AlphaRep   174..182
           /label="AWAlpha"
KR          183..184
AlphaRep   193..201
           /label="AWAlpha"
KR          202..203
AlphaRep   212..220
           /label="AWAlpha"
KR          223..224
AlphaRep   233..241
           /label="AWAlpha"
KR          245..246
           /label="RR"
AlphaRep   263..271
           /label="AWAlpha"
KR          272..273
AlphaRep   286..294
           /label="AWAlpha"
KR          298..299
ORIGIN
1  MKLTNAIALA  ILAATAAAVA  IPEPWCGRPG  QPCKRDALPE  PWCGRPGQPC
KRDALPEAWC
61  GRPGQPCKRS  ALAEPDAEAW  CGRPGQPCRK  VRRAAEALAK  AMAEPVADVE
ADVDEAVVKR
121  CNMIGGPCYE  AKRLARDLAG  VTASVRRDAD  AFYEDLGIES  REVSDKITRD
AEAWCGRPGQ
181  PCKRDAAPEA  EPWCGRPGQP  CKRDAAPEAE  PWCGRPGQPC  KEKREADPEA
EAWCGRPGQP
241  CRKVRRAAEA  MAEALAEPTA  EAWCGRPGQP  CKREALAEAE  ANAEAWCGRP
GQPCRKAKRD
301  AFALAYAADV  ALQQL*
//
LOCUS      R_spNJR-2017aBBW_ppg1          312 aa          linear
UNA
FEATURES   Location/Qualifiers
AlphaRep   25..33
           /label="AWAlpha"
KR          34..35
AlphaRep   42..50
           /label="AWAlpha"
KR          51..52

```

```

AlphaRep      59..67
               /label="AWAlpha"
KR            68..69
AlphaRep      80..88
               /label="AWAlpha"
KR            92..93
               /label="RR"
KR           119..120
KR           132..133
KR           146..147
AlphaRep     174..182
               /label="AWAlpha"
KR           183..184
AlphaRep     191..199
               /label="AWAlpha"
KR           200..201
AlphaRep     208..216
               /label="AWAlpha"
KR           219..220
AlphaRep     229..237
               /label="AWAlpha"
KR           241..242
               /label="RR"
AlphaRep     259..267
               /label="AWAlpha"
KR           268..269
AlphaRep     282..290
               /label="AWAlpha"
KR           294..295

ORIGIN
    1 MKFTSTLALA ILAATATAIA LPEPWCGRPG QPCKRDALPE PWCGRPGQPC
KRESLPEAWC
    61 GRPGQPCKRS PLAEADAEAW CGRPGQPCKR VRRAAEALAE ALAEPVADAE
ADFDEAVVKR
    121 CNMVGACYE AKRLARDLAG VTASAKRDAD AFYEGLGIES REVSDKIARD
AEAWCGRPGQ
    181 PCKRSADAEP WCGRPGQPCK RDASPEPWCG RPGQPCKEKR EADPEAEAWC
GRPGQPCKRV
    241 RRAAEAMAEA LAEPTAEAWC GRPGQPCKRE ALAEAEANAE AWCGRPGQPC
RKAKRDAFAL
    301 AYAADVALQQ L*

//
LOCUS      R_spNJR2017aBVV2_ppg1      316 aa      linear
UNA
FEATURES             Location/Qualifiers
     AlphaRep      25..33
                   /label="AWAlpha"
     KR            34..35
     AlphaRep      42..50
                   /label="AWAlpha"
     KR            51..52
     AlphaRep      59..67
                   /label="AWAlpha"
     KR            68..69
     AlphaRep      80..88
                   /label="AWAlpha"

```

```

KR          92..93
           /label="RR"
KR          119..120
KR          132..133
KR          146..147
           /label="RR"
AlphaRep   174..182
           /label="AWAlpha"
KR          183..184
AlphaRep   197..205
           /label="AWAlpha"
KR          206..207
AlphaRep   212..220
           /label="AWAlpha"
KR          223..224
AlphaRep   233..241
           /label="AWAlpha"
KR          245..246
           /label="RR"
AlphaRep   263..271
           /label="AWAlpha"
KR          272..273
AlphaRep   286..294
           /label="AWAlpha"
KR          298..299

```

ORIGIN

```

      1 MKFTNAIALA ILAATATAVA IPEPWCGRPG QPCKREALPE PWCGRPGQPC
KREALPEAWC
     61 GRPGQPCKRS PLAEPDAEAW CGRPGQPCRK VRRAAEALAE AMAEPAADAE
ADFDEAVVKR
    121 CNMVGACYE AKRLARDLAG VTASVRRDAD AFYEELGIES REVSDKIARD
AEAWCGRPGQ
    181 PCKREANPEA EAEAEAWCGR PGQPCKRDAE PWCGRPGQPC KEKREADAEA
EAWCGRPGQP
    241 CRKVRRAAEA MAEALAEPTA EAWCGRPGQP CKREALAEAE ANAEAWCGRP
GQPCRKAKRD
    301 AFALAYAADV ALQQL*

```

//

```

LOCUS      R_spNJR2017aWRK4_ppg1          297 aa          linear
UNA

```

```

FEATURES             Location/Qualifiers
     AlphaRep        25..33
                       /label="AWAlpha"
     KR              34..35
     AlphaRep        42..50
                       /label="AWAlpha"
     KR              51..52
     AlphaRep        59..67
                       /label="AWAlpha"
     KR              68..69
     AlphaRep        80..88
                       /label="AWAlpha"
     KR              92..93
                       /label="RR"
     KR              119..120
     KR              132..133

```

```

KR          146..147
AlphaRep    174..182
            /label="AWAlpha"
KR          183..184
AlphaRep    193..201
            /label="AWAlpha"
KR          204..205
AlphaRep    214..222
            /label="AWAlpha"
KR          226..227
AlphaRep    244..252
            /label="RR"
            /label="AWAlpha"
KR          253..254
AlphaRep    267..275
            /label="AWAlpha"
KR          279..280

ORIGIN
      1 MKFTSTLALA ILAATATAIA LPEPWCGRPG QPCKRDALPE PWCGRPGQPC
KREALPEAWC
      61 GRPGQPCKRS PLAEDADAEAW CGRPGQPCRK VRRAAEALAE AMAEPVADAE
ADFDEAVVKR
      121 CNMVGACYE AKRLARDLAG VTASAKRDAD AFYEGLGIES REVSDKIARD
AEAWCGRPGQ
      181 PCKRTASADA EPWCGRPGQP CKEKREADPE AEAWCGRPGQ PCRKVRRAAE
AMAEALAEPT
      241 AEAWCGRPGQ PCKREALAEA EANAEEAWCGR PGQPCRKAKR DAFALAYAAD
VALQQL*
//
LOCUS      C_malorum_ppg1          203 aa          linear      UNA
FEATURES   Location/Qualifiers
           AlphaRep      29..38
            /label="AWAlpha"
           KR            41..42
            /label="RR"
           AlphaRep      49..58
            /label="AWAlpha"
           KR            59..60
           AlphaRep      71..80
            /label="AWAlpha"
           KR            81..82
           AlphaRep      93..102
            /label="AWAlpha"
           KR            103..104
           AlphaRep      117..126
            /label="AWAlpha"
           KR            127..128
           AlphaRep      141..150
            /label="AWAlpha"
           KR            151..152
           AlphaRep      165..174
            /label="AWAlpha"
           KR            175..176
           AlphaRep      187..196
            /label="AWAlpha"
           KR            197..198

```

ORIGIN  
 1 MKL TSAICAL ALAATVSSSA IPWAAA EARC GHPGQPCGKV RRVALPEPRC  
 GHPGQPCGKR  
 61 DAMPEPAPEP RCGHPGQPCG KRDAMPAPPEP EARCGHPGQP CGKRDAIPEP  
 APEPEARCGH  
 121 PGQPCGKRDA IPEPAPEPEP RCGHPGQPCG KRNAIPEPAP EPEARCGHPG  
 QPCGKR DAMP  
 181 EPEPEARCGH PGQPCGKREF VA\*

//  
 LOCUS L\_spMPISDFRAT0119\_ppg1 132 aa linear  
 UNA

FEATURES Location/Qualifiers  
 AlphaRep 29..38  
 /label="AWAlpha"  
 KR 41..42  
 AlphaRep1 51..60  
 /label="AWAlpha"  
 KR 61..62  
 AlphaRep2 75..84  
 /label="AWAlpha"  
 KR 85..86  
 AlphaRep1 97..106  
 /label="AWAlpha"  
 KR 107..108  
 AlphaRep1 119..128  
 /label="AWAlpha"

ORIGIN  
 1 MKL TSAICAL VLAATVSSSA IPWAAA EAKC GHPGQPCGKS KRVALPEPEA  
 ICGHPGQPCG  
 61 KRDAIPEPAP EPEARCGHPG QPCGKR DAMP EPEPEAICGH PGQPCGKRDA  
 MPEPEPEAIC  
 121 GHPGQPCGKK M\*

//  
 LOCUS N\_avenae\_ppg1 347 aa linear UNA

FEATURES Location/Qualifiers  
 AlphaRep 29..38  
 /label="AWAlpha"  
 KR 41..42  
 AlphaRep2 51..60  
 /label="AWAlpha"  
 AlphaRep 74..83  
 /label="AWAlpha"  
 KR 84..85  
 AlphaRep 94..103  
 /label="AWAlpha"  
 KR 104..105  
 AlphaRep 114..123  
 /label="AWAlpha"  
 KR 124..125  
 AlphaRep 134..143  
 /label="AWAlpha"  
 KR 144..145  
 AlphaRep 154..163  
 /label="AWAlpha"  
 KR 168..169  
 KR 214..215

```

KR          229..230
AlphaRep    237..246
            /label="AWAlpha"
KR          247..248
AlphaRep    259..268
            /label="AWAlpha"
KR          269..270
AlphaRep1   281..290
            /label="AWAlpha"
KR          291..292
KR          308..309
ORIGIN
    1 MKL TSAICAL IFAATVSSSA IPLAAAEARC GHPGQPCGKF KRAALAEPA
RCGFPGQPCG
    61 RDAIPAPAPE PEARCGHPGQ PCGKR DAMPE PEARCGHPGQ PCGKR DAVPE
PEARCGHPGQ
    121 PCGKRDAIPE PEVRCGHPGQ PCGKRDAIPE PEARCGHPGQ PCGRDLGKRT
PIPRCGQGPY
    181 CPGSYEWEVY MVRAKNHVSW AEARAIVDKY WRKKRDANAE VIVAKTFGKR
EAIPEARCGH
    241 PGQPCGKRDA IPEPAPEARC GHPGQPCGKR DAIPEPAPEA RCGHLGQPCG
KRDAIPEPAP
    301 EARQPYGKRN ALPEPIPEPK LGVVVGLVAS ATSVTPPPNR SIDTQA*
//
LOCUS      R_spMPIPUGEAT0058_ppg1      180 aa      linear
UNA
FEATURES           Location/Qualifiers
    AlphaRep       29..38
                   /label="AWAlpha"
    KR             41..42
    AlphaRep       51..60
                   /label="AWAlpha"
    KR             61..62
    AlphaRep       73..82
                   /label="AWAlpha"
    KR             83..84
    AlphaRep       97..106
                   /label="AWAlpha"
    KR            107..108
    AlphaRep      121..130
                   /label="AWAlpha"
    KR            131..132
    AlphaRep      145..154
                   /label="AWAlpha"
    KR            155..156
    AlphaRep      167..176
                   /label="AWAlpha"
ORIGIN
    1 MKL TSAICAL IFAATVSSSA IPWAAAEARC GHPGQPCGKF KRVALPEPEA
RCGHGQPCG
    61 KRDAIPEPAP EARCGHPGQP CGKRDAIPEP APEPEARCGH PGQPCGKRDA
IPEPAANPEA
    121 RCGHPGQPCG KR DAMPEPEP EPEARCGHPG QPCGKR DAMP EPEPEARCGH
PGQPCGKKL*
//
LOCUS      R_commune_ppg1      201 aa      linear      UNA

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KR          181..182
AlphaRep    191..200
            /label="AWAlpha"
KR          203..204

ORIGIN
1 MKL TSAICAL ILAASVSASA LPVANAEARC GYPGQPCGKV RREAIAEPEA
RCGYPGQPCG
61 KAKREAAPVA EARCGYPGQP CGKAKREAAP VAEAAPEARC GYPGQPCGKA
KREALPEPEA
121 RCGYPGQPCG KAKREAVAEA EPEARCGYPG QPCGKAKREA EALPEPEARC
GYPGQPCGKA
181 KREALPEPEA RCGYPGQPCG KAKRDE*
//
LOCUS       D_brunnea_ppg1      113 aa          linear   UNA
FEATURES   Location/Qualifiers
           AlphaRep            29..38
           /label="AWAlpha"
           KR                   41..42
           AlphaRep            49..58
           /label="AWAlpha"
           KR                   61..62
           AlphaRep            77..86
           /label="AWAlpha"
           KR                   89..90
           AlphaRep            101..110
           /label="AWAlpha"

ORIGIN
1 MKL TSAICAL IFAATVSASA LPVANAEARC GYRGQPCPKA KREAIAEARC
GYRGQPCPKA
61 KREAEALPEA LPEAEARCGY RGQPCPKAKR EAEALPEPEA RCGYRGQPCP KK*
//
LOCUS       D_rosae_ppg1       280 aa          linear   UNA
FEATURES   Location/Qualifiers
           AlphaRep            29..38
           /label="AWAlpha"
           KR                   41..42
           AlphaRep            51..60
           /label="AWAlpha"
           KR                   63..64
           AlphaRep            69..78
           /label="AWAlpha"
           KR                   81..82
           KR                   120..121
           KR                   156..157
           /label="RR"
           AlphaRep            162..171
           /label="AWAlpha"
           KR                   174..175
           AlphaRep            180..189
           /label="AWAlpha"
           KR                   192..193
           AlphaRep            198..207
           /label="AWAlpha"
           KR                   210..211
           AlphaRep            220..229
           /label="AWAlpha"

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KR          232..233
           /label="RR"
AlphaRep   250..259
           /label="AWAlpha"
KR          262..263
ORIGIN
  1 MKL TSAICAL VFAASVTASA LPAAAAEARC GHPGQPCGKA KRVALPEPEA
RCGHPGQPCG
  61 KAKREAAPRC GHPGQPCGKV KRAAEAFAEA LAEPEAEASA DRTTLDARCN
LVGGACYEAK
 121 RLTRDLAAIV ASTQDDADDY YDSLEIEDED TSEKVRRAE  ARCGHPGQPC
GKAKREPEAR
 181 CGHPGQPCGK AKREAEARCG HPGQPCGKAK READPEAEAR  CGHPGQPCGK
LRRAAEIAIE
 241 AVAEAEPEAR CGHPGQPCGK AKRDAHALAH ASDVALSQL*
//
LOCUS      M_coronariae_ppg1      265 aa      linear      UNA
FEATURES   Location/Qualifiers
  AlphaRep 29..38
           /label="AWAlpha"
  KR       41..42
  AlphaRep 51..60
           /label="AWAlpha"
  KR       63..64
  KR       123..124
  KR       159..160
           /label="RR"
  AlphaRep 165..174
           /label="AWAlpha"
  KR       177..178
  AlphaRep 183..192
           /label="AWAlpha"
  KR       195..196
  AlphaRep2 205..214
           /label="AWAlpha"
  KR       217..218
           /label="RR"
  AlphaRep 235..244
           /label="AWAlpha"
  KR       247..248
ORIGIN
  1 MKL TSAICAL IFAASVTASA LPVAAAEARC GKPGQPCGKA KRVALPEPEA
RCGKPGQPCG
  61 KVKRAAEFAE EALAAPDVSF LSSPASGLSW PATKNSFQAE DPAEWATLDA
RCNLVGGACY
 121 EAKRLTRDLA AIVASTQDDA DEYYDSLEIE DEDTSEKVRRAE NAEARCGKPG
QPCGKVKREA
 181 EARCGKPGQP CGKAKREADP EAEARCGRPG QPCGKLRRAA EAIAEVAEAP
EPEARCGKPG
 241 QPCGKAKRDA HALAHAADVA ISQL*
//
LOCUS      M_rosae_ppg1      301 aa      linear      UNA
FEATURES   Location/Qualifiers
  AlphaRep 29..38
           /label="AWAlpha"
  KR       41..42

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AlphaRep      51..60
               /label="AWAlpha"
KR            63..64
AlphaRep      69..78
               /label="AWAlpha"
KR            81..82
KR            141..142
KR            177..178
               /label="RR"
AlphaRep      183..192
               /label="AWAlpha"
KR            195..196
AlphaRep      201..210
               /label="AWAlpha"
KR            213..214
AlphaRep      219..228
               /label="AWAlpha"
KR            231..232
AlphaRep      241..250
               /label="AWAlpha"
KR            253..254
               /label="RR"
AlphaRep      271..280
               /label="AWAlpha"
KR            283..284

ORIGIN
      1 MKL TSAICAL IFAASVTASA LPAAAAEARC GHPGQPCGKA KRVALPEPEA
RCGHGQPCG
      61 KAKREAAPRC GHPGQPCGKV KRAAEAFAEA LAEPEVSSIS LPPVTSSCSN
THDAIQAEAS
      121 ADWTTLDARC NLVGGACYEA KRLTRDLAAI VASTQDDADD YYDSL DIED E
DTSEKVR RDA
      181 EARCGHPGQP CGKAKREPEA RCGHPGQPCG KAKREAEARC GHPGQPCGKA
KREADPEAEA
      241 RCGHPGQPCG KLRRAEAI A EAVAEAEPEA RCGHPGQPCG KAKRDAHALA
HASDVALSQL
      301 *

//
LOCUS      A_macrosclerotiorum_ppg1      289 aa      linear
UNA
FEATURES
      Location/Qualifiers
      AlphaRep1      27..36
                     /label="AWAlpha"
      AlphaRep      51..60
                     /label="AWAlpha"
      KR            63..64
      AlphaRep      75..84
                     /label="AWAlpha"
      KR            87..88
      AlphaRep1      93..102
                     /label="AWAlpha"
      KR            105..106
      KR            141..142
      KR            177..178
      AlphaRep      183..192
                     /label="AWAlpha"

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KR          195..196
AlphaRep3  207..216
           /label="AWAlpha"
KR          219..220
AlphaRep1  229..238
           /label="AWAlpha"
KR          241..242
AlphaRep1  259..268
           /label="AWAlpha"
KR          271..272
ORIGIN
  1 MKFTAIIAAL ILAATVTSSA LPSADARCGY PGQPCSKMIK ARLAEPEANA
RCGYPGQPCG
  61 KAKRVALPEP EADARCGYPG QPCGKAKREA DARCGYPGQP CSKVKRAAEA
FAEALAAPEA
 121 SPDNDHGLAA RCDMGSCFEA KRLTRDLASI VADTTEDPAA FYHSLGLETE
EVSENKKREA
 181 EARCGYPGQP CGKVKRDAMP EPEADVRCGY PGQPCNKAKR EADPEADARC
GYPGQPCSKL
 241 KRAAEAVAEA IAEEPSARC GYPGQPCSKA KRDAFALAHA ADLVLGNL*
//
LOCUS      M_scopiformis_ppg1      269 aa      linear      UNA
FEATURES   Location/Qualifiers
  AlphaRep      27..36
               /label="AWAlpha"
  AlphaRep      50..59
               /label="AWAlpha"
  KR            62..63
  AlphaRep      72..81
               /label="AWAlpha"
  KR            84..85
  KR            121..122
  KR            157..158
  AlphaRep      163..172
               /label="AWAlpha"
  KR            175..176
  AlphaRep      187..196
               /label="AWAlpha"
  KR            199..200
  AlphaRep      209..218
               /label="AWAlpha"
  KR            221..222
  AlphaRep      239..248
               /label="AWAlpha"
  KR            251..252
ORIGIN
  1 MKFTAIIAAL ILAATVTATA LPNADARCGY PGQPCGKVKA RLAEPEADAR
CGYPGQPCGK
  61 AKRDAMPDAD ARCGYPGQPC GKVKRAAEAF AEALVPKPGH ILPRDLHLTA
RCDMGSCYEA
 121 KRMTRDLAAI VAETTEDPAA YYVSLGLEDE ETSEKLRKREA SARCGYPGQP
CGKVKRDAAP
 181 EPEADARCGY PGQPCGKAKR EADPEADARC GYPGQPCGKL KRAAEAVAAA
IAEAEPAAARC
 241 GYPGQPCGKA KRDAFALAHA VDLVLGNL*
//

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LOCUS      P_spD728_ppg1      267 aa      linear      UNA
FEATURES   Location/Qualifiers
   AlphaRep      27..36
                 /label="AWAlpha"
   AlphaRep      50..59
                 /label="AWAlpha"
   KR            62..63
   AlphaRep      68..77
                 /label="AWAlpha"
   KR            80..81
   KR            119..120
   KR            155..156
   AlphaRep      161..170
                 /label="AWAlpha"
   KR            173..174
   AlphaRep      185..194
                 /label="AWAlpha"
   KR            197..198
   AlphaRep      207..216
                 /label="AWAlpha"
   KR            219..220
   AlphaRep      237..246
                 /label="AWAlpha"
   KR            249..250

ORIGIN
    1 MKLTAAIAAL ILAATVSASA LPNPDARCGY PGQPCGKVK RLAEPEADAR
CGYPGQPCGK
    61 AKREADARCG YPGQPCGKVK RAAEFAAAL AEPSNDKLST RDNDALAARC
DMGSCYEAKR
    121 MTRDLAAIVA ETTDDPAAFY HSLNLEDEET SEKLRKREAEA RCGYPGQPCG
KVKRDAPEP
    181 EADARCGYPG QPCGKAKREA DPEADARCGY PGQPCGKLR AAEVAEAI
EAEPSARCGY
    241 PGQPCGKAKR DAFAMAHAAD IVLGNL*
//
LOCUS      P_subalpina_ppg1    265 aa      linear      UNA
FEATURES   Location/Qualifiers
   AlphaRep5     27..36
                 /label="AWAlpha"
   AlphaRep      51..60
                 /label="AWAlpha"
   KR            63..64
   AlphaRep1     69..78
                 /label="AWAlpha"
   KR            81..82
   KR            117..118
   KR            153..154
   AlphaRep      159..168
                 /label="AWAlpha"
   KR            171..172
   AlphaRep3     183..192
                 /label="AWAlpha"
   KR            195..196
   AlphaRep4     205..214
                 /label="AWAlpha"
   KR            217..218

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AlphaRep1      235..244
                /label="AWAlpha"
KR             247..248
ORIGIN
    1 MKFTAAIAAL ILAATVTSSA LPSADARCGY PGQPCTKMVK ARLAEPEANA
RCGYPGQPCG
    61 KAKREADARC GYPGQPCSKV KRAAEAFAEA LASPEASADN DHGLAARCDM
GSCFEAKRMT
    121 RDLAAIVADT TEDPAAFYHS LGLETEEVSE NKKREAEARC GYPGQPCGKV
KRDAAPEPED
    181 DARCGYPGQP CNKAKREADP EADARCGYRG QPCSKLKRAA EAVAEIAIEA
EPTARCGYPG
    241 QPCSKAKRDA FALHAADLV LGNL*
//
LOCUS          E_pisi_ppg1?          64 aa          linear  UNA
FEATURES          Location/Qualifiers
ORIGIN
    1 MKITIFLAAL AFFTTSLGAS IPNKIEDRAM LHDTTIKPSL IEARDPRNGR
QNCGYVGQGC
    61 PGG*
//
LOCUS          E_pulchra_potential_ppg1          63 aa          linear
UNA
FEATURES          Location/Qualifiers
ORIGIN
    1 MKLTSFLAAL AFFTTSLCAS IPIKIDGVML DDTTIQSSLI EARDPRKGRE
NCGYVGQACP
    61 GG*
//
LOCUS          G_cichoracearum_ppg1?          65 aa          linear
UNA
FEATURES          Location/Qualifiers
ORIGIN
    1 MKSTGLLFAL ALLTALLCSS LPSVAHDLH LEASSSAKTS PKIIRDPRKG
RQTCGRPGQA
    61 CSGG*
//
LOCUS          G_magnicellulatus_ppg1?          65 aa          linear
UNA
FEATURES          Location/Qualifiers
ORIGIN
    1 MKSTSLLFAL ALLTAPLCSS LPSTAHDLFH LEASSSGKPS PIIVRDPRKG
RQTCGRPGQA
    61 CSGG*
//
LOCUS          O_heveae_ppg1?          64 aa          linear  UNA
FEATURES          Location/Qualifiers
ORIGIN
    1 MKITIFLAAV TFFTSLSAS IPIKIEDRVV PDDTTIKSPL IEARDPRNGR
QNCGYVGQGC
    61 PGG*
//
LOCUS          O_neolycopersici_ppg1?          63 aa          linear
UNA
FEATURES          Location/Qualifiers
ORIGIN

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1 MKLTNFLAAL TFFTTSFCAS IPIQIDGVML DDTTIKSSLI ETRDPRKGRQ
NCGYVGGQACP
61 GG*
//
LOCUS      P_cerasi_ppg1?          63 aa          linear    UNA
FEATURES   Location/Qualifiers
ORIGIN
1 MKLVVTLVAL FVSTVSSMVL PHASLAIIY PREARPQPAP NPVPKPWRKD
HCGRPGQACV
61 GG*
//
LOCUS      P_moricola_ppg1?       65 aa          linear    UNA
FEATURES   Location/Qualifiers
ORIGIN
1 MKSIKLLAVL AVAVAVTALH INIPKIADNV TLEQPQTPD RVQPRGPRST
KAHCGRPGQV
61 CMGG*
//
LOCUS      P_xanthii_ppg1?        65 aa          linear    UNA
FEATURES   Location/Qualifiers
ORIGIN
1 MKPILALPLF ILLITMVSSI ALPHTSSSST ITQREAKQPQ VPKPEPRPWR
KDHCGRPGQP
61 CPGG*
//
LOCUS      C_longipes_ppg1        239 aa         linear    UNA
FEATURES   Location/Qualifiers
AlphaRep   35..46
            /label="AWAlpha"
KR         47..48
AlphaRep1  55..66
            /label="AWAlpha"
KR         67..68
AlphaRep1  75..86
            /label="AWAlpha"
KR         87..88
KR         149..150
AlphaRep1  155..166
            /label="AWAlpha"
KR         167..168
AlphaRep1  179..190
            /label="AWAlpha"
KR         191..192
AlphaRep1  209..220
            /label="AWAlpha"
KR         221..222
ORIGIN
1 MQLTSALCAI ILAVTVSSAA LPIAEPVTAA IAEPLCGARG QPCGKAKREA
EAAPRCGARG
61 QPCGKAKREA EAAPRCGARG QPCGKVKRAA EAFAEALAEP IPEPQEDSLY
ARHALQLTRD
121 LASIVAETQD DPEAFFASLS LPEDSEVDKR DALARCGARG QPCGKAKREA
EADPEAEARC
181 GARGQPCGKL RRAAEAIAEA VAYAEPEARC GARGQPCGKA KRNALAMAHA
ADIALAAL*
//

```

LOCUS C\_variabilis\_ppg1 89 aa linear UNA  
 FEATURES Location/Qualifiers  
 AlphaRep 31..40  
 /label="AWAlpha"  
 KR 41..42  
 /label="RR"  
 AlphaRep 51..60  
 /label="AWAlpha"  
 KR 63..64  
 AlphaRep 75..84  
 /label="AWAlpha"

ORIGIN  
 1 MKVTSTLFIV AMATAATAMA IPAAEPEPLP WCQWKGQGGC RRSAEPEPLP  
 WCQWKGQGGC  
 61 RAKREAEAEA EPMPWCQWKG QGGCKEKL\*

//  
 LOCUS H\_bicolor\_ppg1 269 aa linear UNA  
 FEATURES Location/Qualifiers  
 AlphaRep 35..46  
 /label="AWAlpha"  
 KR 47..48  
 AlphaRep 57..68  
 /label="AWAlpha"  
 KR 69..70  
 AlphaRep 81..92  
 /label="AWAlpha"  
 KR 93..94  
 AlphaRep1 101..112  
 /label="AWAlpha"  
 KR 113..114  
 KR 177..178  
 AlphaRep 183..194  
 /label="AWAlpha"  
 KR 195..196  
 AlphaRep2 209..220  
 /label="AWAlpha"  
 KR 221..222  
 /label="RR"  
 AlphaRep 239..250  
 /label="AWAlpha"  
 KR 251..252

ORIGIN  
 1 MQLTNALCVL ILAVTVSSTA LPNAQPAAAA IVEPRCGARG QPCGKAKREA  
 APEPAPRCGA  
 61 RGQPCGKAKR EAAPEPEAAP RCGARGQPCG KAKREAEAAP RCGARGQPCG  
 KVKRAAEAF  
 121 EAIAEPTAEP QEDSVYARHA LQLTRDLASV VAETQDDAEA FWTTLSLPED  
 GESEVDKRDA  
 181 LARCGARGQP CGKAKRDAEA EADPEAEARC GARGQPCGKL RRAAEIAIEA  
 VAVSEPEARC  
 241 GARGQPCGKA KRDALALAHA ADIVLSAL\*

//  
 LOCUS H\_hepaticicola\_ppg1 211 aa linear UNA  
 FEATURES Location/Qualifiers  
 AlphaRep 38..52  
 /label="AWAlpha"

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KR          53..54
KR          115..116
AlphaRep1  123..136
           /label="AWAlpha"
KR          137..138
AlphaRep2  145..159
           /label="AWAlpha"
KR          160..161
AlphaRep3  178..192
           /label="AWAlpha"
KR          193..194
ORIGIN
  1 MHLTNTLCAL ILAVTVSSVA LPNAEPIAAA VANAQWDNDW GCGERGQPCG
KVKRAAEAF
  61 EALAEPNQAP ELDSPYARYA RQLTRDLAAV VAETQDDPVK YFASLALRDD
SDLDKRDALA
 121 EAGWGWGERG QPCGKAKRDA DPAAWDWGCG ERGQPCGKLR RAAEAIAEAV
AVPESEAWDW
 181 GCGERGQPCG KAKRDALALA HAADIILRTI *
//
LOCUS      H_variabilis_ppg1_trunc      149 aa      linear
UNA
FEATURES   Location/Qualifiers
  AlphaRep 35..48
           /label="AWAlpha"
  KR        49..50
  AlphaRep 61..74
           /label="AWAlpha"
  AlphaRep1 80..93
           /label="AWAlpha"
  KR        94..95
  AlphaRep3 106..119
           /label="AWAlpha"
  KR        120..121
ORIGIN
  1 MQLTRALCAL ILAVTVSSAA LPVAYPIANA IAEPVALCGR RGEPCGKVKR
EAEAEPVAEP
  61 VALCGRRGEP CGKVKLAEPV ALCGRRGEPG GKAKREAEAE PVAEPVARCG
RRGEPGKVK
 121 REAEAEPEAE PEAEPVARCG RRGEPGK*
//
LOCUS      A_encephaloides_ppg1      243 aa      linear
UNA
FEATURES   Location/Qualifiers
  KR        54..55
  AlphaRep 64..72
           /label="AWAlpha"
  KR        75..76
  KR        83..84
  AlphaRep 93..101
           /label="AWAlpha"
  KR        106..107
  KR        118..119
  AlphaRep 128..136
           /label="AWAlpha"
  KR        141..142

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KR          149..150
KR          169..170
AlphaRep   179..187
           /label="AWAlpha"
KR          192..193
AlphaRep   206..214
           /label="AWAlpha"
KR          217..218
ORIGIN
    1 MKFANSLCAI ALLASANALP TAEDTAAAAT GPPSGGPPPG YFSLIQHLDLDS
NFEKRNAEAV
    61 AEACQWWGQG CWKAKREAEA VEKRASEAEA EPCQWWGQGC WKAKVKREAE
AEAEAIAKRD
    121 AEAEAEPCQW WGQGCWKTKV KREAEAITKR YAEAAAEEALA EPNAEAIAKR
DANAEEPCQ
    181 WWGQGCWKEK VKREAEAAAE AVAEACQWWG QGCWKAKRDA EAVTKSHAAA
EAEAAAAAEA
    241 KA*
//
LOCUS      H_albidus_ppg1          367 aa          linear      UNA
FEATURES   Location/Qualifiers
KR         52..53
AlphaRep   66..74
           /label="AWAlpha"
KR         77..78
AlphaRep1  89..97
           /label="AWAlpha"
KR         100..101
AlphaRep   118..126
           /label="AWAlpha"
KR         129..130
AlphaRep2  141..149
           /label="AWAlpha"
KR         152..153
AlphaRep   164..172
           /label="AWAlpha"
KR         175..176
AlphaRep2  185..193
           /label="AWAlpha"
KR         196..197
KR         232..233
KR         273..274
AlphaRep   277..285
           /label="AWAlpha"
KR         286..287
KR         294..295
AlphaRep2  310..318
           /label="AWAlpha"
KR         321..322
KR         348..349
ORIGIN
    1 MKLTNTLCVL ILAFTASAAP NASPNPEANP FAAVAEAEA CYSVGGACYN
AKRAATPEAL
    61 AEAEACRYAG QGCWKAKRTA EALANPEACK YAGQGCWKIK REAEAEPEPE
AHPAAEACRY

```

```

121 AGQGCWKAKR EAAAAAEAEA CKYVGQGCWK AKREASALAE AEACRYAGQG
CWKAKREADA
181 EAEACKYVGQ GCWKAKRAAE AFAEALAEFP AEPNEKISAR CDLVGGACYN
AKRDALAMAE
241 AVAAAQPNPE EFLATLKLRLN PDIDALEAEK KIKREPCRYA GQGCWKRDAE
AVEKRSPSPE
301 ALAGADAEAC KYVGQGCWKV KRAAEALAEA AANPEPCLRV GGACFQAKRD
FHAFENVARA
361 VIASQA*

```

//

LOCUS H\_fraxineus\_ppg1 416 aa linear UNA

FEATURES Location/Qualifiers

```

KR 52..53
AlphaRep 66..74
      /label="AWAlpha"
KR 77..78
AlphaRep1 89..97
      /label="AWAlpha"
KR 100..101
AlphaRep 118..126
      /label="AWAlpha"
KR 129..130
AlphaRep2 141..149
      /label="AWAlpha"
KR 152..153
AlphaRep1 164..172
      /label="AWAlpha"
KR 175..176
AlphaRep2 187..195
      /label="AWAlpha"
KR 198..199
AlphaRep3 206..214
      /label="AWAlpha"
KR 217..218
KR 253..254
KR 294..295
AlphaRep 298..306
      /label="AWAlpha"
KR 307..308
KR 321..322
      /label="RR"
KR 339..340
AlphaRep2 359..367
      /label="AWAlpha"
KR 370..371
KR 397..398

```

ORIGIN

```

1 MKLTNTLCVL ILAFTASAAP NASPNPEANP FAAVAEAEA CYSVGGACYN
AKRAATPEAL
61 AEAEACRYAG QGCWKAKRTA EALANPEACK YAGQGCWKIK REAEAEPEPE
AHPAAEACRY
121 AGQGCWKAKR EAAAAAEAEA CKYVGQGCWK AKREASALAE AEACKYAGQG
CWKAKRAAAA
181 DAEAEACKYV GQGCWKAKRE ADAEACQYVG QGCWKAKRAA EAFAEALAEF
FAEPNEKISA

```

241 RCDLVGGACY NAKRDALAMA EAVAAAQPNP EEFLATLKLKLR NPDIDALEAA  
 KIKREPCRY  
 301 AGQGCWKRDA EAVEVRDQIA RRCFKFVKGF RPDLCWKQKR SPSPEALAEA  
 DAKADAEACK  
 361 YVGQGCWKVK RAAEALAEAA ANPEPCLRVG GACFQAKRDL HAFENVARSV  
 IASQA\*  
 //

LOCUS H\_fructigenus\_ppg1 328 aa linear UNA

FEATURES Location/Qualifiers

KR 49..50  
 AlphaRep 63..71  
 /label="AWAlpha"  
 KR 74..75  
 AlphaRep 86..94  
 /label="AWAlpha"  
 KR 97..98  
 AlphaRep 111..119  
 /label="AWAlpha"  
 KR 122..123  
 AlphaRep 134..142  
 /label="AWAlpha"  
 KR 145..146  
 AlphaRep 153..161  
 /label="AWAlpha"  
 KR 164..165  
 KR 196..197  
 KR 237..238  
 AlphaRep 247..255  
 /label="AWAlpha"  
 KR 258..259  
 AlphaRep 274..282  
 /label="AWAlpha"  
 KR 285..286  
 AlphaRep 301..309  
 /label="AWAlpha"  
 KR 312..313

ORIGIN

1 MRLANTLCVL ILAATSVSAA PNANPDPFAA AVAEAEACYS VGGACYNKR  
 AASPEALAEA  
 61 EACRRVGQSC WKAKRTANAL ANPEACRRVG QSCWKVKREA DAEAEAEPEA  
 CRRVGQSCWK  
 121 AKRAEAEAE AEACRRVGQS CWKAKRDADA EACRRVGQSC WKVKRAAEAV  
 AEAFAPTEQ  
 181 LEARCDLVGG ACYNAKRDAL AIAEAVAAAS PDGEEFMSKL KLRNPDIDAE  
 EAENKIKREA  
 241 EAEAEACRRV GQSCWKNKRD ANPEAEAEAD AEACRRVGQS CWKVKRAAEA  
 LADAAANPEP  
 301 CRRVGQSCWK AKRDLHAFEN VARSILA\*  
 //

LOCUS H\_herbarum\_ppg1 328 aa linear UNA

FEATURES Location/Qualifiers

KR 49..50  
 AlphaRep 63..71  
 /label="AWAlpha"  
 KR 74..75  
 AlphaRep 86..94

```

        /label="AWAlpha"
KR      97..98
AlphaRep 111..119
        /label="AWAlpha"
KR      122..123
AlphaRep 134..142
        /label="AWAlpha"
KR      145..146
AlphaRep 153..161
        /label="AWAlpha"
KR      164..165
KR      196..197
KR      237..238
AlphaRep 247..255
        /label="AWAlpha"
KR      258..259
AlphaRep 274..282
        /label="AWAlpha"
KR      285..286
AlphaRep 301..309
        /label="AWAlpha"
KR      312..313
ORIGIN
      1 MRLTNTLCVL ILAATSVSAA PNANPDPFAA AVAEAEACYS VGGACYNSKR
AASPEALAEA
      61 EACRRVGQSC WKAKRTADAL ANPEACRRVG QSCWKVKREA DAEAEAEPEA
CRRVGQSCWK
      121 AKRAEAEAE AEACRRVGQS CWKAKRDADA EACRRVGQSC WKVKRAAEAV
AEAFAPTEQ
      181 LEARCDLVGG ACYNAKRDAL AIAEAVAAAS PDGEEFISKL KLRNPDIDAE
EAEKKIKREA
      241 EAEAEACRRV GQSCWKNKRD ANPEAEAEAD AEACRRVGQS CWKVKRAAEA
LAEAAADPEP
      301 CRRVGQSCWK AKRDLHAFEN VARSILA*
//
LOCUS      H_infarciens_ppg1      328 aa      linear      UNA
FEATURES      Location/Qualifiers
      KR      49..50
      AlphaRep 63..71
        /label="AWAlpha"
      KR      74..75
      AlphaRep 86..94
        /label="AWAlpha"
      KR      97..98
      AlphaRep 111..119
        /label="AWAlpha"
      KR      122..123
      AlphaRep 134..142
        /label="AWAlpha"
      KR      145..146
      AlphaRep 153..161
        /label="AWAlpha"
      KR      164..165
      KR      196..197
      KR      237..238
      AlphaRep 247..255

```

```

                /label="AWAlpha"
KR              258..259
AlphaRep       274..282
                /label="AWAlpha"
KR              285..286
AlphaRep       301..309
                /label="AWAlpha"
KR              312..313
ORIGIN
    1  MRLTNTLCVL  ILAATSVSAA  PNANPDPFAA  AVAEAEACYS  IGGACYNAKR
AASPEALAEA
    61  EACRRVGQSC  WKAKRTADAL  ANPEACRRVG  QSCWKVKREA  DAEAEAEPEA
CRRVGQSCWK
    121  AKRAEAEAE  AEACRRVGQS  CWKAKRDADA  EACRRVGQSC  WKVKRAAEAV
AEAFAPTEQ
    181  LEARCDLVGG  ACYNAKRDAL  AIAEAVAAAS  PDGEEFMSKL  KLRNPDIDAE
EAEKKIKREA
    241  EAEAEACRRV  GQSCWKNKRD  ANPEAEAEAD  AEACRRVGQS  CWKVKRAAEA
LAEAAANPEP
    301  CRRVGQSCWK  AKRDLHAFEN  VARSVLA*
//
LOCUS          H_koreanus_ppg1          376 aa          linear  UNA
FEATURES              Location/Qualifiers
KR                  52..53
AlphaRep           66..74
                  /label="AWAlpha"
KR                  77..78
AlphaRep1          89..97
                  /label="AWAlpha"
AlphaRep           118..126
                  /label="AWAlpha"
KR                  129..130
AlphaRep2          141..149
                  /label="AWAlpha"
KR                  152..153
AlphaRep           164..172
                  /label="AWAlpha"
KR                  175..176
AlphaRep           187..195
                  /label="AWAlpha"
KR                  198..199
KR                  237..238
KR                  278..279
AlphaRep           282..290
                  /label="AWAlpha"
KR                  291..292
KR                  299..300
AlphaRep3          319..327
                  /label="AWAlpha"
KR                  330..331
KR                  357..358
ORIGIN
    1  MKLTNTLCVL  ILAFTASAAP  NASPNPEANP  FAAVAEAEA  CYSVGGACYN
AKRAATPEAL
    61  AEAEACRYAG  QGCWKAKRTA  EALANPEACK  YAGQGCWKIN  REAEAEPEPE
AHPAAEACRY

```

121 AGQGCWKAKR EAAAAAEAEA CKYVGQGCWK AKRETSALAE AEACRYAGQG  
 CWKAKRAAAA  
 181 DAEAEACRYA GQGCWKAKRE ADAEACKYVA LAEPFAEPNE KISARCDLVG  
 GACYNAKRDA  
 241 LAMAEAVAAA QPNPEEFLAT LKLRNPDIDA LEAEKKIKRE PCRYAGQGCW  
 KRDAEAVEKR  
 301 SPSPEALAEA DAKADAEACK YVGQGYWKVK RAAEALAEAA ANPEPCLRVG  
 GACFQAKRDL  
 361 HAFENVARSA IASQA\*

//

LOCUS H\_linearis\_ppg1 354 aa linear UNA

FEATURES Location/Qualifiers

KR 48..49  
 AlphaRep 62..70  
 /label="AWAlpha"  
 KR 73..74  
 AlphaRep 85..93  
 /label="AWAlpha"  
 KR 96..97  
 AlphaRep 110..118  
 /label="AWAlpha"  
 KR 121..122  
 AlphaRep 133..141  
 /label="AWAlpha"  
 KR 144..145  
 AlphaRep 152..160  
 /label="AWAlpha"  
 KR 163..164  
 KR 199..200  
 KR 240..241  
 AlphaRep 246..254  
 /label="AWAlpha"  
 KR 257..258  
 KR 267..268  
 /label="RR"  
 KR 285..286  
 AlphaRep 297..305  
 /label="AWAlpha"  
 KR 308..309  
 KR 335..336

ORIGIN

1 MKLTNTLCVL ILAFTASAAP NAEPNPFAAA VAEAEACYSV GGQCYNakra  
 ATPEALAAAE  
 61 ACKYVGQGCW KAKRTAAALA NPEACKYVGQ GCWKVKREAE AHPEPEAEAC  
 KYVGQGCWKA  
 121 KRAAEAEAEA EACKYVGQGC WKAKREADAE ACKYVGQGCW KAKRAAEFA  
 EALAEPFAEP  
 181 NEKISARCDL VGGACYNAKR DALAMAEAVA AAQPNPEEWL ANLKLRNPDI  
 DALEAEKKIK  
 241 REAEPCYVG QGCWKEKRDA EVREQLRRRC RMVAGWHPDL CWKQKREATP  
 EADAEACKYV  
 301 GQGCWKVKRA AEALAEAAAN PEPCLRLGGA CFQAKRDLA FETVARSVIA  
 NQA\*

//

LOCUS H\_occultus\_ppg1 376 aa linear UNA

FEATURES Location/Qualifiers

```

KR          52..53
AlphaRep   66..74
           /label="AWAlpha"
KR          77..78
AlphaRep1  89..97
           /label="AWAlpha"
AlphaRep   118..126
           /label="AWAlpha"
KR          129..130
AlphaRep2  141..149
           /label="AWAlpha"
KR          152..153
AlphaRep   164..172
           /label="AWAlpha"
KR          175..176
AlphaRep   187..195
           /label="AWAlpha"
KR          198..199
KR          237..238
KR          278..279
AlphaRep   282..290
           /label="AWAlpha"
KR          291..292
KR          299..300
AlphaRep3  319..327
           /label="AWAlpha"
KR          330..331
KR          357..358
ORIGIN
      1 MKLTNTLCVL ILAFTASAAP NASPNPEANP FAAAVAEAEA CYSVGGACYN
AKRAATPEAL
      61 AEAEACRYAG QGCWKAKRTA EALANPEACK YAGQGCWKIN REAEAEPEPE
AHPAAEACRY
      121 AGQGCWKAKR EAAAAAEAEA CKYVGQGCWK AKRETSALAE AEACRYAGQG
CWKAKRAAAA
      181 DAEAEACRYA GQGCWKAKRE ADAEACKYVA LAEPFAEPNE KISARCDLVG
GACYNAKRDA
      241 LAMAEAVAAA QPNPEEFLAT LKLRNPDIDA LEAEKKIKRE PCRYAGQGCW
KRDAEAVEKR
      301 SPSPEALAEA DAKADAEACK YVGQGYWKVK RAAEALAEAA ANPEPCLRVG
GACFQAKRDL
      361 HAFENVARSA IASQA*
//
LOCUS      H_repandus_ppg1          128 aa          linear  UNA
FEATURES   Location/Qualifiers
      KR          36..37
      AlphaRep   46..56
           /label="AWAlpha?"
      KR          57..58
      KR          65..66
      KR          82..83
      AlphaRep1  93..103
           /label="AWAlpha?"
      KR          112..113
ORIGIN

```

1 M MFTNALCAI ALLVSANALP TAVDTTTAAA DNNFEKRNAE SVASVCQWWG  
QACLKAKREA  
61 EPVEKRTAEA EVEPSCWKYL VKREAEAAAA EACQWWGQAC WKAMRDAEAF  
TKRHAEAEAN  
121 ASAEAKA\*

//

LOCUS H\_scutula\_ppg1 294 aa linear UNA

FEATURES Location/Qualifiers

KR 49..50  
AlphaRep 63..71  
/label="AWAlpha"  
KR 74..75  
AlphaRep1 86..94  
/label="AWAlpha"  
KR 97..98  
AlphaRep2 111..119  
/label="AWAlpha"  
KR 122..123  
KR 142..143  
KR 174..175  
KR 215..216  
KR 224..225  
AlphaRep 240..248  
/label="AWAlpha"  
KR 251..252  
KR 278..279

ORIGIN

1 MKLTNTICTP ILAATSASAT PTANPNPFAA AVAEAEACYS IGGACHNAKR  
AATPEALAEA  
61 EACRYVGQSC WKAKRTADAL ANPEACKYVG QGCWKVKRAA EAEAEPEPEA  
CRYVGKSCWK  
121 AKRAAEAEAE AEACKYSCWK VKRAAKAVAE AFAEPTEQIS ARCDLVGGAC  
YNAKRDALAM  
181 AEAVAAASPD GEEFLSKLKL RNPDIDAQEA ERKCLKRETEA GKTKRDANPE  
AEAEADAEAC  
241 RYVGQSCWKV KRAAEALAEA AANPEPCARP RAICWQAKRD LYAFENIARS  
ILA\*

//

LOCUS H\_dingleyae\_ppg1 102 aa linear UNA

FEATURES Location/Qualifiers

AlphaRep 34..42  
/label="AWAlpha"  
KR 45..46  
AlphaRep1 57..65  
/label="AWAlpha"  
KR 68..69  
AlphaRep 80..88  
/label="AWAlpha"  
KR 91..92

ORIGIN

1 MQLTNILSFL AIAATAVSAM PAEANPAAV AEACQYPGQG CWKCLKRDA  
SAEAEACLYP  
61 GQGCWKAKRE AVAVAEAEAC QYPGQGCWKA KREVRTLLIS S\*

//

LOCUS P\_palmicola\_ppg1 176 aa linear UNA

FEATURES Location/Qualifiers



```

AlphaRep      36..44
               /label="AWAlpha"
KR            47..48
AlphaRep      59..67
               /label="AWAlpha"
KR            70..71
AlphaRep      82..90
               /label="AWAlpha"
KR            93..94
AlphaRep     105..113
               /label="AWAlpha"
KR           116..117
AlphaRep     128..136
               /label="AWAlpha"
KR           139..140
AlphaRep     149..157
               /label="AWAlpha"
KR           160..161
ORIGIN
      1 MKLTTALYVL VLAATTATAI PNPEPLALAL AEAEACKRPG QPCWKAKRAA
EAMAEAEACK
      61 RPGQPCWKAK RAAEAVAEAE ACKRPGQPCW KAKRAAEAEA EAEACKRPGQ
PCWKAKRAAE
      121 AMAEAEACKR PGQPCWKAKR AAEAEAEACK RPGQPCWKAK REAEAEAEAE
AEAEAE*
//
LOCUS      C_acicularis_ppg1      103 aa      linear      UNA
FEATURES      Location/Qualifiers
      KR            28..29
      AlphaRep     38..49
                  /label="AWAlpha"
      KR            50..51
      AlphaRep1    60..71
                  /label="AWAlpha"
      KR            72..73
      AlphaRep2    82..93
                  /label="AWAlpha"
      KR            94..95
ORIGIN
      1 MKFTNAIAVL ILAATSVSAF PTADAADKRA ALPEADPQCY QPGEPCWKAK
RXAXAXAEAX
      61 CYHPGEPCWK AKREAEAAAE AQCYHPGEPC WKAKRDFLAK KK*
//
LOCUS      H_varia_ppg1      216 aa      linear      UNA
FEATURES      Location/Qualifiers
      KR            29..30
      KR            66..67
      AlphaRep     78..89
                  /label="AWAlpha"
      KR            90..91
      AlphaRep     100..111
                  /label="AWAlpha"
      KR            112..113
      AlphaRep     122..133
                  /label="AWAlpha"
      KR            134..135

```

```

AlphaRep      146..157
               /label="AWAlpha"
KR            158..159
AlphaRep      168..179
               /label="AWAlpha"
KR            180..181
AlphaRep      190..201
               /label="AWAlpha"
KR            202..203
ORIGIN
    1 MQLANAFCVF ILAATSVSAY PNPAEAFDKR LALAEAGSLP SPCIVRCKT
LAHVLAMRCF
    61 CGYKSKREPV ADPVAEACIG RPGQPCWKGK RTAVAEAEAC IGRPGQPCWK
GKREALAEAE
    121 ACIGRPGQPC WKIKREAEAE PEAEACIGRP GQPCWKGKRE AVAEADACIG
RPGQPCWKGK
    181 REALAEAEAC IGRPGQPCWK LKREACIARP GQPCP*
//
LOCUS      L_arida_ppg1      247 aa      linear      UNA
FEATURES      Location/Qualifiers
    AlphaRep      25..36
                  /label="AWAlpha"
    KR            37..38
    KR            111..112
    AlphaRep1     119..130
                  /label="AWAlpha"
    KR            131..132
    AlphaRep      139..150
                  /label="AWAlpha"
    KR            151..152
    AlphaRep1     167..178
                  /label="AWAlpha"
    KR            179..180
    AlphaRep      189..200
                  /label="AWAlpha"
    KR            201..202
    AlphaRep      217..228
                  /label="AWAlpha"
    KR            229..230
ORIGIN
    1 MQLTNALCVV ILAATTAVTA LPEPGCGARG QGCWIKKRAA NALAEALAEP
AVDVIEARCN
    61 IAGGACQKAR MLTRDLAETV AAVQDDPEAY YASLNFEDDS AVETAAIKQV
KREAEADARC
    121 GARGQGCWKE KRDAAPAPGC GARGQGCWKE KRVAISAAEA EANPEARCGA
RGQGCWIKKR
    181 EAVSEADAGC GARGQGCWKV KRAAEAIADA LAEPLPGCGA RGQGCWKEKR
DIQALQNAAR
    241 DALEKL*
//
LOCUS      L_cervina_ppg1_trunc      142 aa      linear
UNA
FEATURES      Location/Qualifiers
    AlphaRep      25..36
                  /label="AWAlpha"
    KR            37..38

```

KR 111..112  
 AlphaRep1 119..130  
 /label="AWAlpha"  
 KR 131..132  
 ORIGIN  
 1 MQLTNTLCVI ILAATTAVTA LPEPHCGARG QGCWKIKRAA NALAEALAEP  
 AVDVINARCN  
 61 IAGGACQKAR MLTRDLAETV AAVQDDPEAY FASLSFEDDS AVETAATEQV  
 KREADADARC  
 121 GARGQGCWKE KRDAAPAPGC GA

//  
 LOCUS L\_hyalina\_ppg1 247 aa linear UNA

FEATURES Location/Qualifiers  
 AlphaRep 25..36  
 /label="AWAlpha"  
 KR 37..38  
 KR 111..112  
 AlphaRep1 119..130  
 /label="AWAlpha"  
 KR 131..132  
 AlphaRep 139..150  
 /label="AWAlpha"  
 KR 151..152  
 AlphaRep1 167..178  
 /label="AWAlpha"  
 KR 179..180  
 AlphaRep1 189..200  
 /label="AWAlpha"  
 KR 201..202  
 AlphaRep1 217..228  
 /label="AWAlpha"  
 KR 229..230

ORIGIN  
 1 MQLTNTLCVI ILAATTAVTA LPEPGCGARG QGCWKIKRAA NALAEALAEP  
 AVDVIEARCN  
 61 IAGGACQKAR MLTRDLAETV AAVQDDPEAY YASLSFEDDS AVETAAIKQI  
 KREADADARC  
 121 GARGQGCWKE KRDAAPAPGC GARGQGCWKE KREAISAAEA EANPEARCGA  
 RGQGCWKIKR  
 181 EAVSEADARC GARGQGCWKV KRAAEAIADA LAEPLPRCGA RGQGCWKQKR  
 DIQALQNVAR  
 241 DVLEKL\*

//  
 LOCUS L\_occidentalis\_ppg1\_trunc 161 aa linear UNA

FEATURES Location/Qualifiers  
 KR 24..25  
 AlphaRep 30..42  
 /label="AWAlpha"  
 KR 43..44  
 AlphaRep1 53..64  
 /label="AWAlpha"  
 KR 65..66  
 AlphaRep1 81..92  
 /label="AWAlpha"  
 KR 93..94

```

AlphaRep1      103..114
                /label="AWAlpha"
KR             115..116
AlphaRep3      131..142
                /label="AWAlpha"
KR             143..144
ORIGIN
1 EAYYASLSFE DDSAVEAAAT EQVKREAEAH NGCGARGQGC PKKRDADADA
APRCGARGQG
61 CWKEKRVAIS AAEAEANPEA RCGARGQGCW KVKREAVSEA EARCGARGQG
CWKVKRAAEA
121 IADALAEPLP GCGARGQGCW KEKRDIQALQ NAARDALEKL *
//
LOCUS          L_subtilissima_ppg1_trunc      215 aa          linear
UNA
FEATURES              Location/Qualifiers
KR                    5..6
KR                    79..80
AlphaRep              87..98
                      /label="AWAlpha"
KR                    99..100
AlphaRep1             107..118
                      /label="AWAlpha"
KR                    119..120
AlphaRep              135..146
                      /label="AWAlpha"
KR                    147..148
AlphaRep1             157..168
                      /label="AWAlpha"
KR                    169..170
AlphaRep              185..196
                      /label="AWAlpha"
KR                    197..198
ORIGIN
1 CWKIKRAANA LAEALAEPAV DVIEARCNIA GGACQKARML TRDLAETVAA
VQDDPEAYYA
61 SLSFEDDSAV ETAAIKQIKR EADADARCGA RGQGCWKEKR DAAPAPGCGA
RGQGCWKEKR
121 EAISAAEAEA NPEARCGARG QGCWKIKREA VSEADAGCGA RGQGCWKVKR
AAEAIADALA
181 EPLPRCGARG QGCWKEKRDI QALQNVARDV LEKL*
//
LOCUS          L_suecica_ppg1      233 aa          linear      UNA
FEATURES              Location/Qualifiers
AlphaRep3           25..36
                    /label="AWAlpha"
KR                  37..38
AlphaRep2           51..62
                    /label="AWAlpha"
KR                  65..66
KR                  139..140
AlphaRep3           145..156
                    /label="AWAlpha"
KR                  159..160
AlphaRep            177..186
                    /label="AWAlpha"

```

```

KR          189..190
AlphaRep3   201..212
            /label="AWAlpha"
KR          215..216

ORIGIN
  1 MQLTNALCVL ILAATSVVTA LPDAGRGC GA RGQGCYKRAA VALAEPVAYA
GHGCGARGQG
  61 CYKIKRAGEA LAEALAE EAT SEIDVRCDLA GGACHKARML ARDLADVVA
TQDDSEAYFN
  121 SLNIEDADTF AEDAAEHIKR EAEAGRGC GA RGQGCYKNKR TAEAEAKADA
EAEAVAGCGA
  181 RGQGCYKAKR EADAEAEAEA GRGCGARGQG CYKEKRD LAA LRNVAREALA QL*
//
LOCUS       L_willkommii_ppg1      247 aa          linear   UNA
FEATURES   Location/Qualifiers
   AlphaRep 25..36
            /label="AWAlpha"
   KR       37..38
   KR       111..112
   AlphaRep 119..130
            /label="AWAlpha"
   KR       131..132
   AlphaRep 139..150
            /label="AWAlpha"
   KR       151..152
   AlphaRep 167..178
            /label="AWAlpha"
   KR       179..180
   AlphaRep 189..200
            /label="AWAlpha"
   KR       201..202
   AlphaRep 217..228
            /label="AWAlpha"
   KR       229..230

ORIGIN
  1 MQLTNALCVV ILAATTAVTA LPEPGCGARG QGCWKIKRAA NALAEALAE
AVDVIEARCN
  61 IAGGACQKAR MLTRDLAETV AAVQDDPEAY YASLNFEDDS AVETAAIKQV
KREAEADARC
  121 GARGQGCWKE KRDAAPAPGC GARGQGCWKE KRVAISAAEA EANPEARCGA
RGQGCWKIKR
  181 EAVSEADAGC GARGQGCWKV KRAAEAIADA LAEPLPGCGA RGQGCWKEKR
DIQALQNAAR
  241 DALEKL*
//
LOCUS       P_dingleyae_ppg1      271 aa          linear   UNA
FEATURES   Location/Qualifiers
   AlphaRep 29..40
            /label="AWAlpha"
   KR       41..42
   AlphaRep 53..64
            /label="AWAlpha"
   KR       65..66
   KR       139..140
   AlphaRep 147..158
            /label="AWAlpha"

```

```

KR          159..160
AlphaRep3  167..178
           /label="AWAlpha"
KR          179..180
AlphaRep4  191..202
           /label="AWAlpha"
KR          203..204
AlphaRep5  213..224
           /label="AWAlpha"
KR          225..226
AlphaRep3  241..252
           /label="AWAlpha"
KR          253..254

```

ORIGIN

```

1 MHIIRTLSIA ILAATAAATA LPNPNAEPWC GGRGQGCWKT KRVALPEPEA
FPGCGARGQG
61 CWKIKRAGVA LRDALAEPAT GEIDARCNLA GGACFYSRQL ARDLATVVAS
TQDDPEAYFA
121 SLDLEDEDAA ADEAAEKVKR EAEAEANCGG RGQGCWKEKR EPEPLPGCGA
RGQGCWKEKR
181 MAVPEAFAEP GCGARGQGCW KVKREPIPEA DARCGARGQG CWKVKRAAEA
IAEAVAEAEAP
241 GCGARGQGCW KEKRDFEALQ NAARDALEKL *

```

//

LOCUS C\_crateriformis\_ppg1 138 aa linear

UNA

FEATURES Location/Qualifiers

```

AlphaRep 27..35
           /label="AWAlpha"
KR        36..37
KR        50..51
AlphaRep1 62..70
           /label="AWAlpha"
KR        71..72
AlphaRep1 85..93
           /label="AWAlpha"
KR        94..95
AlphaRep1 106..114
           /label="AWAlpha"
KR        115..116
AlphaRep1 129..137
           /label="AWAlpha"

```

ORIGIN

```

1 MKVTQVFSVL LVAATVSAVA IPAPEAHCGR LGQPCKREAV AEVTADEIVK
REPGPIPEPE
61 PRCGRMQPC KREAAPEPVP EPEPRCGRMG QPCKREPGPI PEPEPRCGRM
GQPCKREAAP
121 EPVPEPEPRC GRMGQPC*

```

//

LOCUS C\_cylindrospora\_ppg1 163 aa linear

UNA

FEATURES Location/Qualifiers

```

AlphaRep 27..35
           /label="AWAlpha"
KR        36..37
KR        50..51

```

```

AlphaRep1      62..70
                /label="AWAlpha"
KR             71..72
AlphaRep1      85..93
                /label="AWAlpha"
KR             94..95
AlphaRep1     108..116
                /label="AWAlpha"
KR            117..118
AlphaRep1     131..139
                /label="AWAlpha"
KR            140..141
AlphaRep1     154..162
                /label="AWAlpha"
ORIGIN
  1 MKFTQVFSVL LVAATVSAVA IPAPEAHCGR LGQPCKREAL AEVTVDEIAK
REPEPVPEPE
  61 PRCGRMGQPC KREAAPEPAP EPEPRCGRMG QPCKREAAPE PAPEPEPRCG
RMGQPCKREA
  121 APEPVPEPEP RCGRMGQPCK REAAPEPAPE PKPRCGRMGQ PC*
//
LOCUS      P_neosporulosa_ppg1      140 aa      linear      UNA
FEATURES      Location/Qualifiers
  AlphaRep      25..33
                /label="AWAlpha"
  KR            34..35
  AlphaRep      44..52
                /label="AWAlpha"
  KR            53..54
  AlphaRep      67..75
                /label="AWAlpha"
  KR            76..77
  KR            103..104
  KR            111..112
  AlphaRep      131..139
                /label="AWAlpha"
ORIGIN
  1 MKFTQAFSVI ILAASVSAVA LPEARCGRVG QPCKREAAPA PEPRCGRVGO
PCKRAAEAVA
  61 DALADPRCGR VGQPCKRDVA EADLDDIVAR LVTSDDDFFE KVKREVIAIS
KREAAPEPEP
  121 EPEPEPEPEA RCGRVGOPC*
//
LOCUS      P_radificicola_ppg1      136 aa      linear      UNA
FEATURES      Location/Qualifiers
  AlphaRep      25..33
                /label="AWAlpha"
  KR            34..35
  AlphaRep      44..52
                /label="AWAlpha"
  KR            53..54
  AlphaRep      67..75
                /label="AWAlpha"
  KR            76..77
  KR            103..104
  KR            111..112

```

```
AlphaRep1      127..135
                /label="AWAlpha"
ORIGIN
    1 MKFTQAFSVI ILAASVSAAA LPEARCGRIG QPCKREAAPA PEPRCGRIGQ
PCKRAAEAVA
    61 DALADPRCGR IGQPCKRDVA EADLDDIVAR LVTVDNDVFE KVKREVIAIS
KREAAPEPEP
    121 EAEPEAKCGR IGQPC*
//
```