

## Willdenowia 49(3) – Electronic supplement

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### Incongruence of morphological determinations and DNA barcode sequences: a case study in *Cinnamomum* (*Lauraceae*)

Electronic supplement to: Rohwer J. G., Trofimov D., Mayland-Quellhorst E. & Albach D. 2019: Incongruence of morphological determinations and DNA barcode sequences: a case study in *Cinnamomum* (*Lauraceae*). – *Willdenowia* 49: 383–400. doi: <https://doi.org/10.3372/wi.49.49309>

#### Nexus file of *psbA-trnH* data used for haplotype analysis

```
#NEXUS
[ Title psbA-trnH for POPART]
begin taxa;
  dimensions ntax= 40;
  taxlabels
    Cinn_camphora_MF156716_Cinnamomu
    Cinn_camphora_MG021326_Cinnamomu
    Cinn_camphora_NC_035882_Cinnamom
    GQ435459_Cinn_parthenoxylon_PS16
    KX546119_Cinn_parthenoxylon_CXQ0
    GU135428_Cinn_camphora_D0298
    HM019386_Cinn_camphora_PS5019MT0
    HM019387_Cinn_camphora_PS5020MT0
    HQ427102_Cinn_camphora_isolate17
    KP095535_Cinn_camphora_SCBGP173_
    KU160277_Cinn_camphora_CXQ265
    KX509882_Cinn_camphora_Rsn
    KX546101_Cinn_camphora_CXQ0384
    KX546102_Cinn_camphora_CXQ0405
    KX546103_Cinn_camphora_LJ2006004
    LC435397_Cinn_camphora_CHULA_044
    MF096903_Cinn_camphora_KPS0050A0
    MF096904_Cinn_camphora_KPS0050A0
    MF096905_Cinn_camphora_KPS0050A0
    MF096906_Cinn_camphora_KMS0050A0
    MF096907_Cinn_camphora_KMS0050A0
    MF096908_Cinn_camphora_KMS0050A0
    MF137960_Cinn_camphora_Lsn
    HQ415574_Cinn_camphora_tt0904158
    KP095536_Cinn_camphora_SCBGP173_
    GQ435461_Cinn_camphora_PS1634MT0
    KX546100_Cinn_camphora_CXQ0224
    EU153948_Cinn_camphora_K6469
    KP095537_Cinn_parthenoxylon_isol
    KP095538_Cinn_parthenoxylon_SCBG
    KX546121_Cinn_parthenoxylon_CXQ0
    KX546120_Cinn_parthenoxylon_CXQ0
    KU160285_Cinn_parthenoxylon_
    MF137974_Cinn_parthenoxylon_R178
    MF137959_Cinn_camphora_G061425
    KJ686728_Cinn_camphora_TNM_S1462
    Cinn_parthenoxylon_MH050971_Cinn
    Cinn_camphora_MH050970_Cinnamomu
    Cinn_camphora_MF421523_Cinnamomu
    Cinn_camphora_LC228240_psbA
;
end;
```

```
begin characters;
  dimensions nchar= 347;
  format missing=? gap=- matchchar=. datatype=nucleotide interleave=yes;
  matrix
```

```
[!Domain=Data;]
```

```
[
[
11111111111222222222233333333334]
1234567890123456789012345678901234567890]
Cinm_camphora_MF156716_Cinnamomu TACGAGTCGTTGAAGGATCAATACCAAACCTTCTTGTTCTA
Cinm_camphora_MG021326_Cinnamomu TACGAGTCGTTGAAGGATCAATACCAAACCTTCTTGTTCTA
Cinm_camphora_NC_035882_Cinnamom TACGAGTCGTTGAAGGATCAATACCAAACCTTCTTGTTCTA
GQ435459_Cinm_parthenoxylon_PS16 TACGAGTCGTTGAAGGATCAATACCAAACCTTCTTGTTCTA
KX546119_Cinm_parthenoxylon_CXQ0 TACGAGTCGTTGAAGGATCAATACCAAACCTTCTTGTTCTA
GU135428_Cinm_camphora_D0298 TACGAGTCGTTGAAGGATCAATACCAAACCTTCTTGTTCTA
HM019386_Cinm_camphora_PS5019MT0 TACGAGTCGTTGAAGGATCAATACCAAACCTTCTTGTTCTA
HM019387_Cinm_camphora_PS5020MT0 TACGAGTCGTTGAAGGATCAATACCAAACCTTCTTGTTCTA
HQ427102_Cinm_camphora_isolate17 TACGAGTCGTTGAAGGATCAATACCAAACCTTCTTGTTCTA
KP095535_Cinm_camphora_SCBGP173_ TACGAGTCGTTGAAGGATCAATACCAAACCTTCTTGTTCTA
KU160277_Cinm_camphora_CXQ265 TACGAGTCGTTGAAGGATCAATACCAAACCTTCTTGTTCTA
KX509882_Cinm_camphora_Rsn TACGAGTCGTTGAAGGATCAATACCAAACCTTCTTGTTCTA
KX546101_Cinm_camphora_CXQ0384 TACGAGTCGTTGAAGGATCAATACCAAACCTTCTTGTTCTA
KX546102_Cinm_camphora_CXQ0405 TACGAGTCGTTGAAGGATCAATACCAAACCTTCTTGTTCTA
KX546103_Cinm_camphora_LJ2006004 TACGAGTCGTTGAAGGATCAATACCAAACCTTCTTGTTCTA
LC435397_Cinm_camphora_CHULA_044 TACGAGTCGTTGAAGGATCAATACCAAACCTTCTTGTTCTA
MF096903_Cinm_camphora_KPS0050A0 TACGAGTCGTTGAAGGATCAATACCAAACCTTCTTGTTCTA
MF096904_Cinm_camphora_KPS0050A0 TACGAGTCGTTGAAGGATCAATACCAAACCTTCTTGTTCTA
MF096905_Cinm_camphora_KPS0050A0 TACGAGTCGTTGAAGGATCAATACCAAACCTTCTTGTTCTA
MF096906_Cinm_camphora_KMS0050A0 TACGAGTCGTTGAAGGATCAATACCAAACCTTCTTGTTCTA
MF096907_Cinm_camphora_KMS0050A0 TACGAGTCGTTGAAGGATCAATACCAAACCTTCTTGTTCTA
MF096908_Cinm_camphora_KMS0050A0 TACGAGTCGTTGAAGGATCAATACCAAACCTTCTTGTTCTA
MF137960_Cinm_camphora_Lsn TACGAGTCGTTGAAGGATCAATACCAAACCTTCTTGTTCTA
HQ415574_Cinm_camphora_tt0904158 TACGAGTCGTTGAAGGATCAATACCAAACCTTCTTGTTCTA
KP095536_Cinm_camphora_SCBGP173_ TACGAGTCGTTGAAGGATCAATACCAAACCTTCTTGTTCTA
GQ435461_Cinm_camphora_PS1634MT0 TACGAGTCGTTGAAGGATCAATACCAAACCTTCTTGTTCTA
KX546100_Cinm_camphora_CXQ0224 TACGAGTCGTTGAAGGATCAATACCAAACCTTCTTGTTCTA
EU153948_Cinm_camphora_K6469 TACGAGTCGTTGAAGGATCAATAACCAACTTCTTGTTCTA
KP095537_Cinm_parthenoxylon_isol TACGAGTCGTTGAAGGATCAATACCAAACCTTCTTGTTCTA
KP095538_Cinm_parthenoxylon_SCBG TACGAGTCGTTGAAGGATCAATACCAAACCTTCTTGTTCTA
KX546121_Cinm_parthenoxylon_CXQ0 TACGAGTCGTTGAAGGATCAATACCAAACCTTCTTGTTCTA
KX546120_Cinm_parthenoxylon_CXQ0 TACGAGTCGTTGAAGGATCAATACCAAACCTTCTTGTTCTA
KU160285_Cinm_parthenoxylon TACGAGTCGTTGAAGGATCAATACCAAACCTTCTTGTTCTA
MF137974_Cinm_parthenoxylon_R178 TACGAGTCGTTGAAGGATCAATACCAAACCTTCTTGTTCTA
MF137959_Cinm_camphora_G061425 TACGAGTCGTTGAAGGATCAATACCAAACCTTCTTGTTCTA
KJ686728_Cinm_camphora_TNM_S1462 TACGAGTCGTTGAAGGATCAATACCAAACCTTCTTGTTCTA
Cinm_parthenoxylon_MH050971_Cinn TACGAGTCGTTGAAGGATCAATACCAAACCTTCTTGTTCTA
Cinm_camphora_MH050970_Cinnamomu TACGAGTCGTTGAAGGATCAATACCAAACCTTCTTGTTCTA
Cinm_camphora_MF421523_Cinnamomu TACGAGTCGTTGAAGGATCAATACCAAACCTTCTTGTTCTA
Cinm_camphora_LC228240_psbA TACGAGTCGTTGAAGGATCAATACCAAACCTTCTTGTTCTA
```

```
[
[
444444444555555555566666666667777777778]
1234567890123456789012345678901234567890]
Cinm_camphora_MF156716_Cinnamomu TTAAGAAGTTTGGTATTGATCCATTTGGTTCAGTAGTGTT
Cinm_camphora_MG021326_Cinnamomu TTAAGAAGTTTGGTATTGATCCATTTGGTTCAGTAGTGTT
Cinm_camphora_NC_035882_Cinnamom TTAAGAAGTTTGGTATTGATCCATTTGGTTCAGTAGTGTT
GQ435459_Cinm_parthenoxylon_PS16 TTAAGAAGTTTGGTATTGATCCATTTGGTTCAGTAGTGTT
KX546119_Cinm_parthenoxylon_CXQ0 TTAAGAAGTTTGGTATTGATCCATTTGGTTCAGTAGTGTT
GU135428_Cinm_camphora_D0298 TTAAGAAGTTTGGTATTGATCCATTTGGTTCAGTAGTGTT
HM019386_Cinm_camphora_PS5019MT0 TTAAGAAGTTTGGTATTGATCCATTTGGTTCAGTAGTGTT
HM019387_Cinm_camphora_PS5020MT0 TTAAGAAGTTTGGTATTGATCCATTTGGTTCAGTAGTGTT
HQ427102_Cinm_camphora_isolate17 TTAAGAAGTTTGGTATTGATCCATTTGGTTCAGTAGTGTT
KP095535_Cinm_camphora_SCBGP173_ TTAAGAAGTTTGGTATTGATCCATTTGGTTCAGTAGTGTT
KU160277_Cinm_camphora_CXQ265 TTAAGAAGTTTGGTATTGATCCATTTGGTTCAGTAGTGTT
KX509882_Cinm_camphora_Rsn TTAAGAAGTTTGGTATTGATCCATTTGGTTCAGTAGTGTT
```











```

MF096906_Cinm_camphora_KMS0050A0 AAGACTAAATCAAAAAATAATGAATGG
MF096907_Cinm_camphora_KMS0050A0 AAGACTAAATCAAAAAATAATGAATGG
MF096908_Cinm_camphora_KMS0050A0 AAGACTAAATCAAAAAATAATGAATGG
MF137960_Cinm_camphora_Lsn AAGACTAAATCAAAAAATAATGAATGG
HQ415574_Cinm_camphora_tt0904158 AAGACTAAATCAAAAAATAATGAATGG
KP095536_Cinm_camphora_SCBGP173_ AAGACTAAATCAAAAAATAATGAATGG
GQ435461_Cinm_camphora_PS1634MT0 AAGACTAAATCAAAAAATAATGAATGG
KX546100_Cinm_camphora_CXQ0224 AAGACTAAATCAAAAAATAATGAATGG
EU153948_Cinm_camphora_K6469 AAGACTAAATCAAAAAATAATGAATGG
KP095537_Cinm_parthenoxylon_isol AAGACTAAATAAAAAATAATGAATGG
KP095538_Cinm_parthenoxylon_SCBG AAGACTAAATAAAAAATAATGAATGG
KX546121_Cinm_parthenoxylon_CXQ0 AAGACTAAATAAAAAATAATGAATGG
KX546120_Cinm_parthenoxylon_CXQ0 AAGACTAAATAAAAAATAATGAATGG
KU160285_Cinm_parthenoxylon AAGACTAAATAAAAAATAATGAATGG
MF137974_Cinm_parthenoxylon_R178 AAGACTAAATAAAAAATAATGAATGG
MF137959_Cinm_camphora_G061425 AAGACTAAATCAAAAAATAATGAATGG
KJ686728_Cinm_camphora_TNM_S1462 AAGACTAAATAAAAAATAATGAATGG
Cinm_parthenoxylon_MH050971_Cinn AAGACTAAATAAAAAATAATGAATGG
Cinm_camphora_MH050970_Cinnamomu AAGACTAAATAAAAAATAATGAATGG
Cinm_camphora_MF421523_Cinnamomu AAGACTAAATAAAAAATAATGAATGG
Cinm_camphora_LC228240_psbA AAGACTAAATAAAAAATAATGAATGG

```

```

;
end;

```

```

begin traits;
  Dimensions NTraits=3;
  Format labels=yes separator=Comma;
  TraitLabels camphora parthenoxylon questionable;

```

```

matrix
Cinm_camphora_MF156716_Cinnamomu 1, 0, 0
Cinm_camphora_MG021326_Cinnamomu 1, 0, 0
Cinm_camphora_NC_035882_Cinnamom 1, 0, 0
GQ435459_Cinm_parthenoxylon_PS16 0, 1, 0
KX546119_Cinm_parthenoxylon_CXQ0 0, 1, 0
GU135428_Cinm_camphora_D0298 1, 0, 0
HM019386_Cinm_camphora_PS5019MT0 1, 0, 0
HM019387_Cinm_camphora_PS5020MT0 1, 0, 0
HQ427102_Cinm_camphora_isolate17 1, 0, 0
KP095535_Cinm_camphora_SCBGP173_ 1, 0, 0
KU160277_Cinm_camphora_CXQ265 1, 0, 0
KX509882_Cinm_camphora_Rsn 1, 0, 0
KX546101_Cinm_camphora_CXQ0384 1, 0, 0
KX546102_Cinm_camphora_CXQ0405 1, 0, 0
KX546103_Cinm_camphora_LJ2006004 1, 0, 0
LC435397_Cinm_camphora_CHULA_044 1, 0, 0
MF096903_Cinm_camphora_KPS0050A0 1, 0, 0
MF096904_Cinm_camphora_KPS0050A0 1, 0, 0
MF096905_Cinm_camphora_KPS0050A0 1, 0, 0
MF096906_Cinm_camphora_KMS0050A0 1, 0, 0
MF096907_Cinm_camphora_KMS0050A0 1, 0, 0
MF096908_Cinm_camphora_KMS0050A0 1, 0, 0
MF137960_Cinm_camphora_Lsn 1, 0, 0
HQ415574_Cinm_camphora_tt0904158 1, 0, 0
KP095536_Cinm_camphora_SCBGP173_ 1, 0, 0
GQ435461_Cinm_camphora_PS1634MT0 1, 0, 0
KX546100_Cinm_camphora_CXQ0224 1, 0, 0
EU153948_Cinm_camphora_K6469 1, 0, 0
KP095537_Cinm_parthenoxylon_isol 0, 1, 0
KP095538_Cinm_parthenoxylon_SCBG 0, 1, 0
KX546121_Cinm_parthenoxylon_CXQ0 0, 1, 0
KX546120_Cinm_parthenoxylon_CXQ0 0, 1, 0
KU160285_Cinm_parthenoxylon 0, 1, 0

```



```

MF137974_Cinm_parthenoxylon_R178 0, 1, 0
MF137959_Cinm_camphora_G061425 0, 0, 1
KJ686728_Cinm_camphora_TNM_S1462 1, 0, 0
Cinm_parthenoxylon_MH050971_Cinn 0, 1, 0
Cinm_camphora_MH050970_Cinnamomu 1, 0, 0
Cinm_camphora_MF421523_Cinnamomu 1, 0, 0
Cinm_camphora_LC228240_psbA 1, 0, 0
;
end;

```

### Nexus file of *matK* data used for haplotype analysis

```

#NEXUS
[ Title matK for POPART]
begin taxa;
  dimensions ntax= 37;
  taxlabels
    Cinm_parthenoxylon_MH050971
    KP093276_Cinm_parthenoxylon_SCBG
    KP093277_Cinm_parthenoxylon_SCBG
    KX545925_Cinm_parthenoxylon_CXQ0
    KX546068_Cinm_parthenoxylon_CXQ0
    JQ435498_Cinm_parthenoxylon
    KJ510895_Cinm_parthenoxylon
    GQ434288_Cinm_parthenoxylon_PS16
    KX545924_Cinm_parthenoxylon_CXQ0
    Cinm_camphora_LC228240
    Cinm_camphora_MH050970
    Cinm_camphora_MF421523
    AJ966800_Cinm_camphora_Q102
    HQ415392_Cinm_camphora
    KP093546_Cinm_camphora_SCBGP173_
    JQ435499_Cinm_camphora
    Cinm_camphora_MG021326
    Cinm_camphora_MF156716
    Cinm_camphora_NC035882
    AJ247154_Cinm_camphora_R164
    EU153829_Cinm_camphora_K6469
    GU135093_Cinm_camphora_D0298
    HM019316_Cinm_camphora_PS5019MT0
    HM019317_Cinm_camphora_PS5020MT0
    KF740401_Cinm_camphora
    KX545833_Cinm_camphora_LJ2006004
    KP093545_Cinm_camphora_SCBGP173_
    KX546013_Cinm_camphora_CXQ0224
    KX546024_Cinm_camphora_CXQ0384
    KX546030_Cinm_camphora_CXQ0405
    KJ510888_Cinm_camphora
    MF589651_Cinm_camphora_efgh2
    HQ427401_Cinm_camphora
    JN114745_Cinm_camphora_SBB1126
    MF589649_Cinm_camphora_ijkl3
    JX495692_Cinm_camphora_H00168
    Cinm_camphora_cf_G061425
;
end;

begin characters;
  dimensions nchar= 622;
  format missing=? gap=- matchchar=. datatype=nucleotide interleave=yes;
  matrix

[!Domain=Data;]

```























```

KP093546_Cinm_camphora_SCBGP173_ AAAATTTTGTAAATGTATCAGGG
JQ435499_Cinm_camphora AAAATTTTGTAAATGTATCAGGG
Cinm_camphora_MG021326 AAAATTTTGTAAATGTATCAGGG
Cinm_camphora_MF156716 AAAATTTTGTAAATGTATCAGGG
Cinm_camphora_NC035882 AAAATTTTGTAAATGTATCAGGG
AJ247154_Cinm_camphora_R164 AAAATTTTGTAAATGTATCAGGG
EU153829_Cinm_camphora_K6469 AAAATTTTGTAAATGTATCAGGG
GU135093_Cinm_camphora_D0298 AAAATTTTGTAAATGTATCAGGG
HM019316_Cinm_camphora_PS5019MT0 AAAATTTTGTAAATGTATCAGGG
HM019317_Cinm_camphora_PS5020MT0 AAAATTTTGTAAATGTATCAGGG
KF740401_Cinm_camphora AAAATTTTGTAAATGTATCAGGG
KX545833_Cinm_camphora_LJ2006004 AAAATTTTGTAAATGTATCAGGG
KP093545_Cinm_camphora_SCBGP173_ AAAATTTTGTAAATGTATCAGGG
KX546013_Cinm_camphora_CXQ0224 AAAATTTTGTAAATGTATCAGGG
KX546024_Cinm_camphora_CXQ0384 AAAATTTTGTAAATGTATCAGGG
KX546030_Cinm_camphora_CXQ0405 AAAATTTTGTAAATGTATCAGGG
KJ510888_Cinm_camphora AAAATTTTGTAAATGTATCAGGG
MF589651_Cinm_camphora_efgh2 AAAATTTTGTAAATGTATCAGGG
HQ427401_Cinm_camphora AAAATTTTGTAAATGTATCAGGG
JN114745_Cinm_camphora_SBB1126 AAAATTTTGTAAATGTATCAGGG
MF589649_Cinm_camphora_ijkl3 AAAATTTTGTAAATGTATCAGGG
JX495692_Cinm_camphora_H00168 AAAATTTTGTAAATGTATCAGGG
Cinm_camphora_cf_G061425 AAAATTTTGTAAATGTATCAGGG
;
end;

```

```

begin traits;
  Dimensions Ntraits=3;
  Format labels=yes separator=Comma;
  TraitLabels camphora parthenoxylon questionable;

```

matrix

```

Cinm_parthenoxylon_MH050971      0, 1, 0
KP093276_Cinm_parthenoxylon_SCBG 0, 1, 0
KP093277_Cinm_parthenoxylon_SCBG 0, 1, 0
KX545925_Cinm_parthenoxylon_CXQ0 0, 1, 0
KX546068_Cinm_parthenoxylon_CXQ0 0, 1, 0
JQ435498_Cinm_parthenoxylon      0, 1, 0
KJ510895_Cinm_parthenoxylon      0, 1, 0
GQ434288_Cinm_parthenoxylon_PS16 0, 1, 0
KX545924_Cinm_parthenoxylon_CXQ0 0, 1, 0
Cinm_camphora_LC228240           1, 0, 0
Cinm_camphora_MH050970           1, 0, 0
Cinm_camphora_MF421523           1, 0, 0
AJ966800_Cinm_camphora_Q102      1, 0, 0
HQ415392_Cinm_camphora           1, 0, 0
KP093546_Cinm_camphora_SCBGP173_ 1, 0, 0
JQ435499_Cinm_camphora           1, 0, 0
Cinm_camphora_MG021326           1, 0, 0
Cinm_camphora_MF156716           1, 0, 0
Cinm_camphora_NC035882           1, 0, 0
AJ247154_Cinm_camphora_R164      1, 0, 0
EU153829_Cinm_camphora_K6469     1, 0, 0
GU135093_Cinm_camphora_D0298     1, 0, 0
HM019316_Cinm_camphora_PS5019MT0 1, 0, 0
HM019317_Cinm_camphora_PS5020MT0 1, 0, 0
KF740401_Cinm_camphora           1, 0, 0
KX545833_Cinm_camphora_LJ2006004 1, 0, 0
KP093545_Cinm_camphora_SCBGP173_ 1, 0, 0
KX546013_Cinm_camphora_CXQ0224   1, 0, 0
KX546024_Cinm_camphora_CXQ0384   1, 0, 0
KX546030_Cinm_camphora_CXQ0405   1, 0, 0
KJ510888_Cinm_camphora           1, 0, 0

```

```

MF589651_Cinm_camphora_efgh2      1, 0, 0
HQ427401_Cinm_camphora             1, 0, 0
JN114745_Cinm_camphora_SBB1126    1, 0, 0
MF589649_Cinm_camphora_ijkl3      1, 0, 0
JX495692_Cinm_camphora_H00168     1, 0, 0
Cinm_camphora_cf_G061425          0, 0, 1
;
end;

```

## Nexus file of total ITS data used for haplotype analysis

```

#NEXUS
[ Title ITS total for POPART]
begin taxa;
  dimensions ntax= 22;
  taxlabels
    Cinm_camphora_cf_G061425_NGS2
    Cinm_camphora_cf_G061425_NGS1
    JN115020_Cinm_camphora_SBB1126
    AF272260_Cinm_camphora
    JX242469_Cinm_camphora_CcN
    KP092856_Cinm_camphora_SCBGP173_
    KP092857_Cinm_camphora_SCBGP173_
    KP218517_Cinm_camphora_P2
    KP218518_Cinm_camphora_P2
    KT248576_Cinm_camphora_iso020
    KU139826_Cinm_camphora_CXQ265
    KX509822_Cinm_camphora_Rsn
    KX546414_Cinm_camphora_CXQ0384
    KX546537_Cinm_camphora_LJ2006004
    KX766404_Cinm_camphora_WKUCC65
    MF110040_Cinm_camphora_Lsn
    KP092858_Cinm_parthenoxylon_SCBG
    KU139870_Cinm_parthenoxylon_HQSB
    KU139871_Cinm_parthenoxylon_H201
    KX546421_Cinm_parthenoxylon_CXQ0
    MF110054_Cinm_parthenoxylon_R178
    MF110039_Cinm_camphora_G06_1425
;
end;
begin characters;
  dimensions nchar= 449;
  format missing=? gap=- matchchar=. datatype=nucleotide interleave=yes;
  matrix

[!Domain=Data;]
[
                                     11111111112222222222333333333334]
[
1234567890123456789012345678901234567890]
Cinm_camphora_cf_G061425_NGS2    CCCTCTGGGCGCGGCGAGCGCCAAGGAA---TCGAAGCGG
Cinm_camphora_cf_G061425_NGS1    CCCTCTGGGCGCGGCGAGCGCCAAGGAATTATCGAAGCGG
JN115020_Cinm_camphora_SBB1126   CCCTCTAGGCGCGGATAGTGCCAAGGAA---TCGAAACAG
AF272260_Cinm_camphora           CCCTCTAGGCGCGGAGAGTGCCAAGGAA---TCGAAACAG
JX242469_Cinm_camphora_CcN       CCCTCTAGGCGCGGATAGTGCCAAGGAA---TCGAAACAG
KP092856_Cinm_camphora_SCBGP173_ CCCTCTGGGCGCGGCGAGCGCCAAGGAATTATCGAAGCGG
KP092857_Cinm_camphora_SCBGP173_ CCCTCTGGGCGCGGCGAGCGCCAAGGAA---TCGAAGCGG
KP218517_Cinm_camphora_P2        CCCTCTGGGCGCGGCGAGCGCCAAGGAATTATCGAAGCGG
KP218518_Cinm_camphora_P2        CCCTCTGGGCGCGGCGAGCGCCAAGGAATTATCGAAGCGG
KT248576_Cinm_camphora_iso020    CCCTCTGGGCGCGGCGAGCGCCAAGGAATTATCGAAGCGG
KU139826_Cinm_camphora_CXQ265    CCCTCTGGGCGCGGCGAGCGCCAAGGAATTATCGAAGCGG
KX509822_Cinm_camphora_Rsn       CCCTCTGGGCGCGGCGAGCGCCAAGGAATTATCGAAGCGG
KX546414_Cinm_camphora_CXQ0384   CCCTCTGGGCGCGGCGAGCGCCAAGGAATTATCGAAGCGG
KX546537_Cinm_camphora_LJ2006004 CCCTCTGGGCGCGGCGAGCGCCAAGGAATTATCGAAGCGG
KX766404_Cinm_camphora_WKUCC65   CCCTCTGGGCGCGGCGAGCGCCAAGGAATTATCGAAGCGG

```

MF110040\_Cinm\_camphora\_Lsn CCCTCTGGGCGCGGCGAGCGCCAAGGAATTATCGAAGCGG  
KP092858\_Cinm\_parthenoxylon\_SCBG CCCTCTGGGCGCGGCGAGCGCCAAGGAA---TCGAAGCGG  
KU139870\_Cinm\_parthenoxylon\_HQSB CCCTCTGGGCGCGGCGAGCGCCAAGGAA---TCGAAGCGG  
KU139871\_Cinm\_parthenoxylon\_H201 CCCTCTGGGCGCGGCGAGCGCCAAGGAA---TCGAAGCGG  
KX546421\_Cinm\_parthenoxylon\_CXQ0 CCCTCTGGGCGCGGCGAGCGCCAAGGAA---TCGAAGCGG  
MF110054\_Cinm\_parthenoxylon\_R178 CCCTCTGGGCGCGGCGAGCGCCAAGGAA---TCGAAGCGG  
MF110039\_Cinm\_camphora\_G06\_1425 CCCTCTGGGCGCGGCGAGCGCCAAGGAATTATCGAAGCGG

[ 44444444445555555555666666666677777777778]  
[ 1234567890123456789012345678901234567890]  
Cinm\_camphora\_cf\_G061425\_NGS2 AAGGGGCGGCCCGCCCCGCGCCGGTGCG-----  
Cinm\_camphora\_cf\_G061425\_NGS1 AGGGGGCGGCCCGCCCCGCGCCGGTGCG-----  
JN115020\_Cinm\_camphora\_SBB1126 AAAGGGCAGCCGCTCGCCTGTGCGAGC--ACGCCCCGG  
AF272260\_Cinm\_camphora AAAGGGCAGCCGCTCGCCTGTGCTAGC--ATGCCCCGG  
JX242469\_Cinm\_camphora\_CcN AAAGGGCAGCCGCTCGCCAGTGCGAGC--ACGCCCCGG  
KP092856\_Cinm\_camphora\_SCBGP173\_ AGGGGGCGGCCCGCCCCGCGCCGGTGCG-----  
KP092857\_Cinm\_camphora\_SCBGP173\_ AAAGGGCGGCCCGCTCGCCGCGAGCGCGCCCCGG  
KP218517\_Cinm\_camphora\_P2 AAGGGGCGGCCCGCCCCGCGCCGGTGCG-----  
KP218518\_Cinm\_camphora\_P2 AAGGGGCGGCCCGCCCCGCGCCGGTGCG-----  
KT248576\_Cinm\_camphora\_iso020 AGGGGGCGGCCCGCCCCGCGCCGGTGCG-----  
KU139826\_Cinm\_camphora\_CXQ265 AGGGGGCGGCCCGCCCCGCGCCGGTGCG-----  
KX509822\_Cinm\_camphora\_Rsn AGGGGGCGGCCCGCCCCGCGCCGGTGCG-----  
KX546414\_Cinm\_camphora\_CXQ0384 AGGGGGCGGCCCGCCCCGCGCCGGTGCG-----  
KX546537\_Cinm\_camphora\_LJ2006004 AGGGGGCGGCCCGCCCCGCGCCGGTGCG-----  
KX766404\_Cinm\_camphora\_WKUCC65 AAGGGGCGGCCCGCCCCGCGCCGGTGCG-----  
MF110040\_Cinm\_camphora\_Lsn AGGGGGCGGCCCGCCCCGCGCCGGTGCG-----  
KP092858\_Cinm\_parthenoxylon\_SCBG AAGGGGCGGCCCGCCCCGCGCCGGTGCG-----  
KU139870\_Cinm\_parthenoxylon\_HQSB AAGGGGCGGCCCGCCCCGCGCCGGTGCG-----  
KU139871\_Cinm\_parthenoxylon\_H201 AAGGGGCGGCCCGCCCCGCGCCGGTGCG-----  
KX546421\_Cinm\_parthenoxylon\_CXQ0 AAGGGGCGGCCCGCCCCGCGCCGGTGCG-----  
MF110054\_Cinm\_parthenoxylon\_R178 AAGGGGCGGCCCGCCCCGCGCCGGTGCG-----  
MF110039\_Cinm\_camphora\_G06\_1425 AGGGGGCGGCCCGCCCCGCGCCGGTGCG-----

[ 1111111111111111111111111111111111]  
[ 88888888889999999999000000000011111111112]  
[ 1234567890123456789012345678901234567890]  
Cinm\_camphora\_cf\_G061425\_NGS2 -----GCGGGGACCGGCCGCCCCG  
Cinm\_camphora\_cf\_G061425\_NGS1 -----GCGGGGACCGGCCGCCCCG  
JN115020\_Cinm\_camphora\_SBB1126 CTGGGGATGC--GGCATTGCGGTGGGGATCCGCCGCCCGT  
AF272260\_Cinm\_camphora CCGGGGATGC--GGCATTGCGGCGGGGATCCGCCGCCCGT  
JX242469\_Cinm\_camphora\_CcN CTAGGGATGC--GGCATTGCGGCGGGGATCCGCCGCCCGT  
KP092856\_Cinm\_camphora\_SCBGP173\_ -----GCGGGGACCGGCCGCCCCG  
KP092857\_Cinm\_camphora\_SCBGP173\_ CCGGGGACCGCGCGCGCGCGGTGGGGATCCGCCGCCCGC  
KP218517\_Cinm\_camphora\_P2 -----GCGGGGACCGGCCGCCCCG  
KP218518\_Cinm\_camphora\_P2 -----GCGGGGACCGGCCGCCCCG  
KT248576\_Cinm\_camphora\_iso020 -----GCGGGGACCGGCCGCCCCG  
KU139826\_Cinm\_camphora\_CXQ265 -----GCGGGGACCGGCCGCCCCG  
KX509822\_Cinm\_camphora\_Rsn -----GCGGGGACCGGCCGCCCCG  
KX546414\_Cinm\_camphora\_CXQ0384 -----GCGGGGACCGGCCGCCCCG  
KX546537\_Cinm\_camphora\_LJ2006004 -----GCGGGGACCGGCCGCCCCG  
KX766404\_Cinm\_camphora\_WKUCC65 -----GCGGGGACCGGCCGCCCCG  
MF110040\_Cinm\_camphora\_Lsn -----GCGGGGACCGGCCGCCCCG  
KP092858\_Cinm\_parthenoxylon\_SCBG -----GCGGGGACCGGCCGCCCCG  
KU139870\_Cinm\_parthenoxylon\_HQSB -----GTGGGGACCGGCCGCCCCG  
KU139871\_Cinm\_parthenoxylon\_H201 -----GCGGGGACCGGCCGCCCCG  
KX546421\_Cinm\_parthenoxylon\_CXQ0 -----GCGGGGACCGGCCGCCCCG  
MF110054\_Cinm\_parthenoxylon\_R178 -----GCGGGGACCGGCCGCCCCG  
MF110039\_Cinm\_camphora\_G06\_1425 -----GCGGGGACCGGCCGCCCCG

[ 1111111111111111111111111111111111]  
[ 22222222233333333333444444444455555555556]  
[ 1234567890123456789012345678901234567890]  
Cinm\_camphora\_cf\_G061425\_NGS2 CYGTGAAAYCTCTTAGACGACTCTCGGCAACGGATATCTCG









```

KP218518_Cinm_camphora_P2      GAGGACACCGTGCGGCGCGGCACGGCGTGTGGGGGTTGAG
KT248576_Cinm_camphora_iso020  GAGGACACCGTGCGGCGCGGCACGGCGTGTGGGGGTTGAG
KU139826_Cinm_camphora_CXQ265  GAGGACACCGTGCGGCGCGGCACGGCGTGTGGGGGTTGAG
KX509822_Cinm_camphora_Rsn     GAGGACACCGTGCGGCGCGGCACGGCGTGTGGGGGTTGAG
KX546414_Cinm_camphora_CXQ0384 GAGGACACCGTGCGGCGCGGCACGGCGTGTGGGGGTTGAG
KX546537_Cinm_camphora_LJ2006004 GAGGACACCGTGCGGCGCGGCACGGCGTGTGGGGGTTGAG
KX766404_Cinm_camphora_WKUCC65 GAGGACACCGTGCGGCGCGGCACGGCGTGTGGGGGTTGAG
MF110040_Cinm_camphora_Lsn     GAGGACACCGTGCGGCGCGGCACGGCGTGTGGGGGTTGAG
KP092858_Cinm_parthenoxylon_SCBG GAGGACACCGTGCGGCGCGGCACGGCGTGTGGGGGTTGAG
KU139870_Cinm_parthenoxylon_HQSB GAGGACACCGTGCGGCGCGGCACGGCGTGTGGGGGTTGAG
KU139871_Cinm_parthenoxylon_H201 GAGGACACCGTGCGGCGCGGCACGGCGTGTGGGGGTTGAG
KX546421_Cinm_parthenoxylon_CXQ0 GAGGACACCGTGCGGCGCGGCACGGCGTGTGGGGGTTGAG
MF110054_Cinm_parthenoxylon_R178 GAGGACACCGTGCGGCGCGGCACGGCGTGTGGGGGTTGAG
MF110039_Cinm_camphora_G06_1425 GAGGACACCGTGCGGCGCGGCACGGCGTGTGGGGGTTGAG

```

```

[ 4444444444]
[ 4444444444]
[ 123456789]
Cinm_camphora_cf_G061425_NGS2  A--GGCGAT
Cinm_camphora_cf_G061425_NGS1  A--GGCGAT
JN115020_Cinm_camphora_SBB1126  A--GGCGAT
AF272260_Cinm_camphora         A--GGCGAT
JX242469_Cinm_camphora_CcN     A--GGCGAT
KP092856_Cinm_camphora_SCBGP173_ A--GGCGAT
KP092857_Cinm_camphora_SCBGP173_ AGAGGCGAC
KP218517_Cinm_camphora_P2     A--GGCGAT
KP218518_Cinm_camphora_P2     A--GGCGAT
KT248576_Cinm_camphora_iso020  A--GGCGAT
KU139826_Cinm_camphora_CXQ265  A--GGCGAT
KX509822_Cinm_camphora_Rsn     A--GGCGAT
KX546414_Cinm_camphora_CXQ0384 A--GGCGAT
KX546537_Cinm_camphora_LJ2006004 A--GGCGAT
KX766404_Cinm_camphora_WKUCC65 A--GGCGAT
MF110040_Cinm_camphora_Lsn     A--GGCGAT
KP092858_Cinm_parthenoxylon_SCBG A--GGCGAT
KU139870_Cinm_parthenoxylon_HQSB A--GGCGAT
KU139871_Cinm_parthenoxylon_H201 A--GGCGAT
KX546421_Cinm_parthenoxylon_CXQ0 A--GGCGAT
MF110054_Cinm_parthenoxylon_R178 A--GGCGAT
MF110039_Cinm_camphora_G06_1425 A--GGCGAT
;
end;

```

```

begin traits;
  Dimensions Ntraits=3;
  Format labels=yes separator=Comma;
  TraitLabels camphora parthenoxylon questionable;

```

```

matrix
Cinm_camphora_cf_G061425_NGS2    0, 0, 1
Cinm_camphora_cf_G061425_NGS1    0, 0, 1
JN115020_Cinm_camphora_SBB1126   1, 0, 0
AF272260_Cinm_camphora           1, 0, 0
JX242469_Cinm_camphora_CcN       1, 0, 0
KP092856_Cinm_camphora_SCBGP173_ 1, 0, 0
KP092857_Cinm_camphora_SCBGP173_ 1, 0, 0
KP218517_Cinm_camphora_P2        1, 0, 0
KP218518_Cinm_camphora_P2        1, 0, 0
KT248576_Cinm_camphora_iso020    1, 0, 0
KU139826_Cinm_camphora_CXQ265    1, 0, 0
KX509822_Cinm_camphora_Rsn       1, 0, 0
KX546414_Cinm_camphora_CXQ0384   1, 0, 0
KX546537_Cinm_camphora_LJ2006004 1, 0, 0

```

```

KX766404_Cinm_camphora_WKUCC65      1, 0, 0
MF110040_Cinm_camphora_Lsn           1, 0, 0
KP092858_Cinm_parthenoxylon_SCBG     0, 1, 0
KU139870_Cinm_parthenoxylon_HQSB     0, 1, 0
KU139871_Cinm_parthenoxylon_H201     0, 1, 0
KX546421_Cinm_parthenoxylon_CXQ0    0, 1, 0
MF110054_Cinm_parthenoxylon_R178     0, 1, 0
MF110039_Cinm_camphora_G06_1425     0, 0, 1
;
end;

```

## Nexus file of ITS-1 data used for haplotype analysis

```

#NEXUS
[ Title ]
begin taxa;
  dimensions ntax= 21;
  taxlabels
    Cinm_camphora_cf_G061425_NGS2
    Cinm_camphora_cf_G061425_NGS1
    AF272260_Cinm_camphora
    JX242469_Cinm_camphora_CcN
    KP092856_Cinm_camphora_SCBGP173_
    KP092857_Cinm_camphora_SCBGP173_
    KP218517_Cinm_camphora_P2
    KP218518_Cinm_camphora_P2
    KT248576_Cinm_camphora_iso020
    KU139826_Cinm_camphora_CXQ265
    KX509822_Cinm_camphora_Rsn
    KX546414_Cinm_camphora_CXQ0384
    KX546537_Cinm_camphora_LJ2006004
    KX766404_Cinm_camphora_WKUCC65
    MF110040_Cinm_camphora_Lsn
    KP092858_Cinm_parthenoxylon_SCBG
    KU139870_Cinm_parthenoxylon_HQSB
    KU139871_Cinm_parthenoxylon_H201
    KX546421_Cinm_parthenoxylon_CXQ0
    MF110054_Cinm_parthenoxylon_R178
    MF110039_Cinm_camphora_G06_1425
;
end;
begin characters;
  dimensions nchar= 151;
  format missing=? gap=- matchchar=. datatype=nucleotide interleave=yes;
  matrix

[!Domain=Data;]
[
[
111111111112222222222333333333334]
1234567890123456789012345678901234567890]
Cinm_camphora_cf_G061425_NGS2      CGAGCTCCGAACAA---CCCTCTGGGCGCGGCGAGCGCCA
Cinm_camphora_cf_G061425_NGS1      CGAGCTCCGAACAA---CCCTCTGGGCGCGGCGAGCGCCA
AF272260_Cinm_camphora              CGAGCTCCAAACAG---CCCTCTAGGCGCGGAGAGTGCCA
JX242469_Cinm_camphora_CcN          CGAGCTCCAAACAG---CCCTCTAGGCGCGGATAGTGCCA
KP092856_Cinm_camphora_SCBGP173_    CGAGCTCCGAACAA---CCCTCTGGGCGCGGCGAGCGCCA
KP092857_Cinm_camphora_SCBGP173_    CGAGCTCCGAACAACAACCCTCTGGGCGCGGCGAGCGCCA
KP218517_Cinm_camphora_P2           CGAGCTCCGAACAA---CCCTCTGGGCGCGGCGAGCGCCA
KP218518_Cinm_camphora_P2           CGAGCTCCGAACAA---CCCTCTGGGCGCGGCGAGCGCCA
KT248576_Cinm_camphora_iso020       CGAGCTCCGAACAA---CCCTCTGGGCGCGGCGAGCGCCA
KU139826_Cinm_camphora_CXQ265       CGAGCTCCGAACAA---CCCTCTGGGCGCGGCGAGCGCCA
KX509822_Cinm_camphora_Rsn          CGAGCTCCGAACAA---CCCTCTGGGCGCGGCGAGCGCCA
KX546414_Cinm_camphora_CXQ0384      CGAGCTCCGAACAA---CCCTCTGGGCGCGGCGAGCGCCA
KX546537_Cinm_camphora_LJ2006004    CGAGCTCCGAACAA---CCCTCTGGGCGCGGCGAGCGCCA
KX766404_Cinm_camphora_WKUCC65      CGAGCTCCGAACAA---CCCTCTGGGCGCGGCGAGCGCCA

```

MF110040\_Cinm\_camphora\_Lsn CGAGCTCCGAACAA---CCCTCTGGGCGCGGCGAGCGCCA  
KP092858\_Cinm\_parthenoxylon\_SCBG CGAGCTCCGAACAA---CCCTCTGGGCGCGGCGAGCGCCA  
KU139870\_Cinm\_parthenoxylon\_HQSB CGAGCTCCGAACAA---CCCTCTGGGCGCGGCGAGCGCCA  
KU139871\_Cinm\_parthenoxylon\_H201 CGAGCTCCGAACAA---CCCTCTGGGCGCGGCGAGCGCCA  
KX546421\_Cinm\_parthenoxylon\_CXQ0 CGAGCTCCGAACAA---CCCTCTGGGCGCGGCGAGCGCCA  
MF110054\_Cinm\_parthenoxylon\_R178 CGAGCTCCGAACAA---CCCTCTGGGCGCGGCGAGCGCCA  
MF110039\_Cinm\_camphora\_G06\_1425 CGAGCTCCGAACAA---CCCTCTGGGCGCGGCGAGCGCCA

[ 44444444445555555555666666666677777777778]  
[ 1234567890123456789012345678901234567890]  
Cinm\_camphora\_cf\_G061425\_NGS2 AGGAA---TCGAAGCGGAAGGGGCGGCCCGCCCGT  
Cinm\_camphora\_cf\_G061425\_NGS1 AGGAATTATCGAAGCGGAGGGGGCGGCCCGCCCGT  
AF272260\_Cinm\_camphora AGGAA---TCGAAAACAGAAAGGGCAGCCGCTCGCCCTGT  
JX242469\_Cinm\_camphora\_CcN AGGAA---TCGAAAACAGAAAGGGCAGCCGCTCGCCAGT  
KP092856\_Cinm\_camphora\_SCBGP173\_ AGGAATTATCGAAGCGGAGGGGGCGGCCCGCCCGT  
KP092857\_Cinm\_camphora\_SCBGP173\_ AGGAA---TCGAAGCGGAAGGGGCGGCCCGCCCGG  
KP218517\_Cinm\_camphora\_P2 AGGAATTATCGAAGCGGAAGGGGCGGCCCGCCCGT  
KP218518\_Cinm\_camphora\_P2 AGGAATTATCGAAGCGGAAGGGGCGGCCCGCCCGT  
KT248576\_Cinm\_camphora\_iso020 AGGAATTATCGAAGCGGAGGGGGCGGCCCGCCCGT  
KU139826\_Cinm\_camphora\_CXQ265 AGGAATTATCGAAGCGGAGGGGGCGGCCCGCCCGT  
KX509822\_Cinm\_camphora\_Rsn AGGAATTATCGAAGCGGAGGGGGCGGCCCGCCCGT  
KX546414\_Cinm\_camphora\_CXQ0384 AGGAATTATCGAAGCGGAGGGGGCGGCCCGCCCGT  
KX546537\_Cinm\_camphora\_LJ2006004 AGGAATTATCGAAGCGGAGGGGGCGGCCCGCCCGT  
KX766404\_Cinm\_camphora\_WKUCC65 AGGAATTATCGAAGCGGAAGGGGCGGCCCGCCCGT  
MF110040\_Cinm\_camphora\_Lsn AGGAATTATCGAAGCGGAGGGGGCGGCCCGCCCGT  
KP092858\_Cinm\_parthenoxylon\_SCBG AGGAA---TCGAAGCGGAAGGGGCGGCCCGCCCGT  
KU139870\_Cinm\_parthenoxylon\_HQSB AGGAA---TCGAAGCGGAAGGGGCGGCCCGCCCGT  
KU139871\_Cinm\_parthenoxylon\_H201 AGGAA---TCGAAGCGGAAGGGGCGGCCCGCCCGT  
KX546421\_Cinm\_parthenoxylon\_CXQ0 AGGAA---TCGAAGCGGAAGGGGCGGCCCGCCCGT  
MF110054\_Cinm\_parthenoxylon\_R178 AGGAA---TCGAAGCGGAAGGGGCGGCCCGCCCGT  
MF110039\_Cinm\_camphora\_G06\_1425 AGGAATTATCGAAGCGGAGGGGGCGGCCCGCCCGT

[ 111111111111111111111111111111111]  
[ 88888888889999999999000000000011111111112]  
[ 1234567890123456789012345678901234567890]  
Cinm\_camphora\_cf\_G061425\_NGS2 GCG-----GC  
Cinm\_camphora\_cf\_G061425\_NGS1 GCG-----GC  
AF272260\_Cinm\_camphora GCTAGC--ATGCCCCGGCCGGGGATGC--GGCATTGCGGC  
JX242469\_Cinm\_camphora\_CcN GCGAGC--ACGCCCCGGCTAGGGATGC--GGCATTGCGGC  
KP092856\_Cinm\_camphora\_SCBGP173\_ GCG-----GC  
KP092857\_Cinm\_camphora\_SCBGP173\_ GCGAGCGCGCGCCCCGGCCGGGGACGCGCGGCGCCGCGGT  
KP218517\_Cinm\_camphora\_P2 GCG-----GC  
KP218518\_Cinm\_camphora\_P2 GCG-----GC  
KT248576\_Cinm\_camphora\_iso020 GCG-----GC  
KU139826\_Cinm\_camphora\_CXQ265 GCG-----GC  
KX509822\_Cinm\_camphora\_Rsn GCG-----GC  
KX546414\_Cinm\_camphora\_CXQ0384 GCG-----GC  
KX546537\_Cinm\_camphora\_LJ2006004 GCG-----GC  
KX766404\_Cinm\_camphora\_WKUCC65 GCG-----GC  
MF110040\_Cinm\_camphora\_Lsn GCG-----GC  
KP092858\_Cinm\_parthenoxylon\_SCBG GCG-----GC  
KU139870\_Cinm\_parthenoxylon\_HQSB GCG-----GT  
KU139871\_Cinm\_parthenoxylon\_H201 GCG-----GC  
KX546421\_Cinm\_parthenoxylon\_CXQ0 GCG-----GC  
MF110054\_Cinm\_parthenoxylon\_R178 GCG-----GC  
MF110039\_Cinm\_camphora\_G06\_1425 GCG-----GC

[ 111111111111111111111111111111111]  
[ 2222222233333333333444444444455]  
[ 1234567890123456789012345678901]  
Cinm\_camphora\_cf\_G061425\_NGS2 GGGGACCGGCCCGCCCGCCYGTGAAYCTCTTA  
Cinm\_camphora\_cf\_G061425\_NGS1 GGGGACCGGCCCGCCCGCCTGTGAATCTCTTA  
AF272260\_Cinm\_camphora GGGGATCCGCGCCCGTCTGTGAATCTCTTA

```

JX242469_Cinm_camphora_CcN      CGGGATCCGCCCGCCCGCTGTGAATCTTTTG
KP092856_Cinm_camphora_SCBGP173_ GGGGACCGGCCCGCCCGCTGTGAATCTTTTA
KP092857_Cinm_camphora_SCBGP173_ GGGGATCCGCCCGCCCGCTGTGAATCTTTTA
KP218517_Cinm_camphora_P2      GGGGACCGGCCCGCCCGCTGTGAATCTTTTA
KP218518_Cinm_camphora_P2      GGGGACCGGCCCGCCCGCTGTGAATCTTTTA
KT248576_Cinm_camphora_iso020   GGGGACCGGCCCGCCCGCTGTGAATCTCTTA
KU139826_Cinm_camphora_CXQ265   GGGGACCGGCCCGCCCGCTGTGAATCTYTTA
KX509822_Cinm_camphora_Rsn      GGGGACCGGCCCGCCCGCTGTGAATCTTTTA
KX546414_Cinm_camphora_CXQ0384  GGGGACCGGCCCGCCCGCTGTGAATCTTTTA
KX546537_Cinm_camphora_LJ2006004 GGGGACCGGCCCGCCCGCTGTGAATCTYTTA
KX766404_Cinm_camphora_WKUCC65  GGGGACCGGCCCGCCCGCTGTGAATCTTTTA
MF110040_Cinm_camphora_Lsn      GGGGACCGGCCCGCCCGCTGTGAATCTTTTA
KP092858_Cinm_parthenoxylon_SCBG GGGGACCGGCCCGCCCGCTGTGAATCTCTTA
KU139870_Cinm_parthenoxylon_HQSB GGGGACCGGCCCGCCCGTCTGTGAATATTTTA
KU139871_Cinm_parthenoxylon_H201 GGGGACCGGCCCGCCCGCTGTGAATCTCTTA
KX546421_Cinm_parthenoxylon_CXQ0 GGGGACCGGCCCGCCCGCTGTGAATCTCTTA
MF110054_Cinm_parthenoxylon_R178 GGGGACCGGCCCGCCCGTCTGTGAATCTTTTA
MF110039_Cinm_camphora_G06_1425 GGGGACCGGCCCGCCCGCTGTGAATCTCTTA
;
end;

```

```

begin traits;
  Dimensions NTraits=3;
  Format labels=yes separator=Comma;
  TraitLabels camphora parthenoxylon questionable;

```

```

matrix
Cinm_camphora_cf_G061425_NGS2    0, 0, 1
Cinm_camphora_cf_G061425_NGS1    0, 0, 1
AF272260_Cinm_camphora           1, 0, 0
JX242469_Cinm_camphora_CcN       1, 0, 0
KP092856_Cinm_camphora_SCBGP173_ 1, 0, 0
KP092857_Cinm_camphora_SCBGP173_ 1, 0, 0
KP218517_Cinm_camphora_P2        1, 0, 0
KP218518_Cinm_camphora_P2        1, 0, 0
KT248576_Cinm_camphora_iso020    1, 0, 0
KU139826_Cinm_camphora_CXQ265    1, 0, 0
KX509822_Cinm_camphora_Rsn       1, 0, 0
KX546414_Cinm_camphora_CXQ0384   1, 0, 0
KX546537_Cinm_camphora_LJ2006004 1, 0, 0
KX766404_Cinm_camphora_WKUCC65   1, 0, 0
MF110040_Cinm_camphora_Lsn       1, 0, 0
KP092858_Cinm_parthenoxylon_SCBG 0, 1, 0
KU139870_Cinm_parthenoxylon_HQSB 0, 1, 0
KU139871_Cinm_parthenoxylon_H201 0, 1, 0
KX546421_Cinm_parthenoxylon_CXQ0 0, 1, 0
MF110054_Cinm_parthenoxylon_R178 0, 1, 0
MF110039_Cinm_camphora_G06_1425 0, 0, 1
;
end;

```

## Nexus file of ITS-2 data used for haplotype analysis

```

#NEXUS
[ Title ]
begin taxa;
  dimensions ntax= 30;
  taxlabels
    Cinm_camphora_cf_G061425_NGS2
    Cinm_camphora_cf_G061425_NGS1
    MF096119_Cinm_camphora_KPS0050A0
    MF096120_Cinm_camphora_KPS0050A0
    MF096121_Cinm_camphora_KPS0050A0

```

```

KX546586_Cinm_camphora_CXQ0384
KX546756_Cinm_camphora_LJ2006004
KP096040_Cinm_parthenoxylon_SCBG
KU139869_Cinm_parthenoxylon_CXQ2
KX546594_Cinm_parthenoxylon_CXQ0
KX546593_Cinm_parthenoxylon_CXQ0
AF272260_Cinm_camphora
JX242469_Cinm_camphora_CcN
KP092856_Cinm_camphora_SCBGP173_
KP092857_Cinm_camphora_SCBGP173_
KP218517_Cinm_camphora_P2
KP218518_Cinm_camphora_P2
KT248576_Cinm_camphora_iso020
KU139826_Cinm_camphora_CXQ265
KX509822_Cinm_camphora_Rsn
KX546414_Cinm_camphora_CXQ0384
KX546537_Cinm_camphora_LJ2006004
KX766404_Cinm_camphora_WKUCC65
MF110040_Cinm_camphora_Lsn
KP092858_Cinm_parthenoxylon_SCBG
KU139870_Cinm_parthenoxylon_HQSB
KU139871_Cinm_parthenoxylon_H201
KX546421_Cinm_parthenoxylon_CXQ0
MF110054_Cinm_parthenoxylon_R178
MF110039_Cinm_camphora_G06_1425
;
end;
begin characters;
  dimensions nchar= 220;
  format missing=? gap=- matchchar=. datatype=nucleotide interleave=yes;
  matrix

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[
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Cinm_camphora_cf_G061425_NGS2 CGCCACCCATCGCCCCC----ACCCCGCGGCATTTCCCAT
Cinm_camphora_cf_G061425_NGS1 CGCCACCCRTCGCCCCC----GCCCCC-----CAC
MF096119_Cinm_camphora_KPS0050A0 TGCCACCCATCGCCCCCTCCTGACCCCCGCGGCATTTCCCAT
MF096120_Cinm_camphora_KPS0050A0 TGCCACCCATCGCCCCCTCCTGACCCCCGCGGCATTTCCCAT
MF096121_Cinm_camphora_KPS0050A0 TGCCACCCATCGCCCCCTCCTGACCCCCGCGGCATTTCCCAT
KX546586_Cinm_camphora_CXQ0384 CGCCACCCGTGCGCCCCC----GCCCCC-----CAC
KX546756_Cinm_camphora_LJ2006004 CGCCACCCATCGCCCCC----GCCCCC-----CAC
KP096040_Cinm_parthenoxylon_SCBG CGCCACCCATCGCCCCC----GCCCCC-----CAC
KU139869_Cinm_parthenoxylon_CXQ2 CGCCACCCATCGCCCCC----GCCCCC-----CAC
KX546594_Cinm_parthenoxylon_CXQ0 CGCCACCCATCGCCCCC----ACCCCGCGGCATTTCCCAT
KX546593_Cinm_parthenoxylon_CXQ0 CGCCACCCATCGCCCCC----ACCCCGCGGCATTTCCCAT
AF272260_Cinm_camphora CGCCACCCATCGCCCCC----GCCCCC-----CAC
JX242469_Cinm_camphora_CcN TGCCACCCATCGCCCCCCTGACCCCCGCGGCATTTCCCAT
KP092856_Cinm_camphora_SCBGP173_ CGCCACCCATCGCCCCC----GCCCCC-----CAC
KP092857_Cinm_camphora_SCBGP173_ CGCCACCCATCGCCCCC-----CGCGCGGCATTTCCCAT
KP218517_Cinm_camphora_P2 CGCCACCCGTGCGCCCCC----ACCCCC-----CAC
KP218518_Cinm_camphora_P2 CGCCACCCGTGCGCCCCC----ACCCCC-----CAC
KT248576_Cinm_camphora_iso020 CGCCACCCATCGCCCCC----GCCCCC-----CAC
KU139826_Cinm_camphora_CXQ265 CGCCACCCRTCGCCCCC----GCCCCC-----CAC
KX509822_Cinm_camphora_Rsn CGCCACCCATCGCCCCC----GCCCCC-----CAC
KX546414_Cinm_camphora_CXQ0384 CGCCACCCGTGCGCCCCC----GCCCCC-----CAC
KX546537_Cinm_camphora_LJ2006004 CGCCACCCATCGCCCCC----GCCCCC-----CAC
KX766404_Cinm_camphora_WKUCC65 CGCCACCCGTGCGCCCCC----ACCCCC-----CAC
MF110040_Cinm_camphora_Lsn CGCCACCCATCGCCCCC----GCCCCC-----CAC
KP092858_Cinm_parthenoxylon_SCBG CGCCACCCATCGCCCCC----ACCCCGCGGCATTTCCCAT
KU139870_Cinm_parthenoxylon_HQSB CGCCACCCATCGCCCCC----ACCCCGCGGCATTTCCCAT
KU139871_Cinm_parthenoxylon_H201 CGCCACCCATCGCCCCC----ACCCCGCGGCATTTCCCAT
KX546421_Cinm_parthenoxylon_CXQ0 CGCCACCCATCGCCCCC----ACCCCGCGGCATTTCCCAT

```

MF110054\_Cinm\_parthenoxylon\_R178 CGCCACCCATCGCCCC---GCCCCGCGGCAT'TCCCAT  
MF110039\_Cinm\_camphora\_G06\_1425 CGCCACCCRTCGCCCC---GCCCC-----CAC

[ 444444444555555555566666666667777777778]  
[ 1234567890123456789012345678901234567890]  
Cinm\_camphora\_cf\_G061425\_NGS2 GCCCGGGGCGGGGAGCGGAGAATGGCCGTCCGTGCCCGAG  
Cinm\_camphora\_cf\_G061425\_NGS1 GCCCGGGGCGGGGAGCGGAGAATGGCCGTCCGTGCCCGAG  
MF096119\_Cinm\_camphora\_KPS0050A0 GCCCC-GCTGGGGAGCGGAGAATGGTCATTCGTACCCAAG  
MF096120\_Cinm\_camphora\_KPS0050A0 GCCCC-GCTGGGGAGCGGAGAATGGTCATTCGTACCCAAG  
MF096121\_Cinm\_camphora\_KPS0050A0 GCCCC-GCTGGGGAGCGGAGAATGGTCATTCGTACCCAAG  
KX546586\_Cinm\_camphora\_CXQ0384 GCCCGGGGCGGGGAGCGGAGAATGGCCGTCCGTGCCCGAG  
KX546756\_Cinm\_camphora\_LJ2006004 GCCCGGGGCGGGGAGCGGAGAATGGCCGTCCGTGCCCGAG  
KP096040\_Cinm\_parthenoxylon\_SCBG GCCCGGGGCGGGGAGCGGAGAATGGCCGTCCGTGCCCGAG  
KU139869\_Cinm\_parthenoxylon\_CXQ2 GCCCGGGGCGGGGAGCGGAGAATGGCCGTCCGTGCCCGAG  
KX546594\_Cinm\_parthenoxylon\_CXQ0 GCCCGGGGCGGGGAGCGGAGAATGGCCGTCCGTGCCCGAG  
KX546593\_Cinm\_parthenoxylon\_CXQ0 GCCCGGGGCGGGGAGCGGAGAATGGCCGTCCGTGCCCGAG  
AF272260\_Cinm\_camphora GCCCGGGGCGGGGAGCGGAGAATGGCCGTCCGTGCCCGAG  
JX242469\_Cinm\_camphora\_CcN GCCCC-ACTGGGGAGCGGAGAATGGTCATTCGTGCCAAG  
KP092856\_Cinm\_camphora\_SCBGP173\_ GCCCGGGGCGGGGAGCGGAGAATGGCCGTCCGTGCCCGAG  
KP092857\_Cinm\_camphora\_SCBGP173\_ GCCCC-GCCGGGGAGCGGAGACTGGCCGTCCGTGCCCGAG  
KP218517\_Cinm\_camphora\_P2 GCCCGGGGCGGGGAGCGGAGAATGGCCGTCCGTGCCCGAG  
KP218518\_Cinm\_camphora\_P2 GCCCGGGGCGGGGAGCGGAGAATGGCCGTCCGTGCCCGAG  
KT248576\_Cinm\_camphora\_iso020 GCCCGGGGCGGGGAGCGGAGAATGGCCGTCCGTGCCCGAG  
KU139826\_Cinm\_camphora\_CXQ265 GCCCGGGGCGGGGAGCGGAGAATGGCCGTCCGTGCCCGAG  
KX509822\_Cinm\_camphora\_Rsn GCCCGGGGCGGGGAGCGGAGAATGGCCGTCCGTGCCCGAG  
KX546414\_Cinm\_camphora\_CXQ0384 GCCCGGGGCGGGGAGCGGAGAATGGCCGTCCGTGCCCGAG  
KX546537\_Cinm\_camphora\_LJ2006004 GCCCGGGGCGGGGAGCGGAGAATGGCCGTCCGTGCCCGAG  
KX766404\_Cinm\_camphora\_WKUCC65 GCCCGGGGCGGGGAGCGGAGAATGGCCGTCCGTGCCCGAG  
MF110040\_Cinm\_camphora\_Lsn GCCCGGGGCGGGGAGCGGAGAATGGCCGTCCGTGCCCGAG  
KP092858\_Cinm\_parthenoxylon\_SCBG GCCCGGGGCGGGGAGCGGAGAATGGCCGTCCGTGCCCGAG  
KU139870\_Cinm\_parthenoxylon\_HQSB GCCCGGGGCGGGGAGCGGAGAATGGCCGTCCGTGCCCGAG  
KU139871\_Cinm\_parthenoxylon\_H201 GCCCGGGGCGGGGAGCGGAGAATGGCCGTCCGTGCCCGAG  
KX546421\_Cinm\_parthenoxylon\_CXQ0 GCCCGGGGCGGGGAGCGGAGAATGGCCGTCCGTGCCCGAG  
MF110054\_Cinm\_parthenoxylon\_R178 GCCCGGGGCGGGGAGCGGAGAATGGCCGTCCGTGCCCGAG  
MF110039\_Cinm\_camphora\_G06\_1425 GCCCGGGGCGGGGAGCGGAGAATGGCCGTCCGTGCCCGAG

[ 11111111111111111111]  
[ 888888888999999999900000000011111111112]  
[ 1234567890123456789012345678901234567890]  
Cinm\_camphora\_cf\_G061425\_NGS2 CCCTCGGCGCGCGGTTCGGCGGAAAAAGGAGGACACCGTGC  
Cinm\_camphora\_cf\_G061425\_NGS1 CCCTCGGCGCGCGGTTCGGCGGAAAAAGGAGGACACCGTGC  
MF096119\_Cinm\_camphora\_KPS0050A0 TCCTCAG-GCGCGTTTAGCAGAAAA-GGAGAACACCGTGC  
MF096120\_Cinm\_camphora\_KPS0050A0 TCCTCAG-GCGCGTTTAGCAGAAAA-GGAGAACACCGTGC  
MF096121\_Cinm\_camphora\_KPS0050A0 TCCTCAG-GCGCGTTTAGCAGAAAA-GGAGAACACCGTGC  
KX546586\_Cinm\_camphora\_CXQ0384 CCCTCGGCGCGCGGTTCGGCGGAAAAAGGAGGACACCGTGC  
KX546756\_Cinm\_camphora\_LJ2006004 CCCTCGGCGCGCGGTTCGGCGGAAAAAGGAGGACACCGTGC  
KP096040\_Cinm\_parthenoxylon\_SCBG CCCTCGGCGCGCGGTTCGGCGGAAAAAGGAGGACACCGTGC  
KU139869\_Cinm\_parthenoxylon\_CXQ2 CCCTCGGCGCGCGGTTCGGCGGAAAAAGGAGGACACCGTGC  
KX546594\_Cinm\_parthenoxylon\_CXQ0 CCCTCGGCGCGCGGTTCGGCGGAAAAAGGAGGACACCGTGC  
KX546593\_Cinm\_parthenoxylon\_CXQ0 CCCTCGGCGCGCGGTTCGGCGGAAAAAGGAGGACACCGTGC  
AF272260\_Cinm\_camphora CCCTCGGCGCGCGGTTCGGCGGAAAAAGGAGGACACCGTGC  
JX242469\_Cinm\_camphora\_CcN TCCTTGG-GCGCGTTCAGCAGAAAA-GGAGAACACCGTGC  
KP092856\_Cinm\_camphora\_SCBGP173\_ CCCTCGGCGCGCGGTTCGGCGGAAAAAGGAGGACACCGTGC  
KP092857\_Cinm\_camphora\_SCBGP173\_ CGATCGGCGCGCGGTTCGGCAGAAAA-GGAGGACACCGTGC  
KP218517\_Cinm\_camphora\_P2 CCCTCGGCGCGCGGTTCGGCGGAAAAAGGAGGACACCGTGC  
KP218518\_Cinm\_camphora\_P2 CCCTCGGCGCGCGGTTCGGCGGAAAAAGGAGGACACCGTGC  
KT248576\_Cinm\_camphora\_iso020 CCCTCGGCGCGCGGTTCGGCGGAAAAAGGAGGACACCGTGC  
KU139826\_Cinm\_camphora\_CXQ265 CCCTCGGCGCGCGGTTCGGCGGAAAAAGGAGGACACCGTGC  
KX509822\_Cinm\_camphora\_Rsn CCCTCGGCGCGCGGTTCGGCGGAAAAAGGAGGACACCGTGC  
KX546414\_Cinm\_camphora\_CXQ0384 CCCTCGGCGCGCGGTTCGGCGGAAAAAGGAGGACACCGTGC  
KX546537\_Cinm\_camphora\_LJ2006004 CCCTCGGCGCGCGGTTCGGCGGAAAAAGGAGGACACCGTGC  
KX766404\_Cinm\_camphora\_WKUCC65 CCCTCGGCGCGCGGTTCGGCGGAAAAAGGAGGACACCGTGC  
MF110040\_Cinm\_camphora\_Lsn CCCTCGGCGCGCGGTTCGGCGGAAAAAGGAGGACACCGTGC





```
KX509822_Cinm_camphora_Rsn CGCCGATCGTACGCCGCGCCCGCATTCGCCGCGCGGATC
KX546414_Cinm_camphora_CXQ0384 CGCCGATCGTACGCCGCGCCCGCATTCGCCGCGCGGATC
KX546537_Cinm_camphora_LJ2006004 CGCCGATCGTACGCCGCGCCCGCATTCGCCGCGCGGATC
KX766404_Cinm_camphora_WKUCC65 CGCCGATCGTACGCCGCGCCCGCATTCGCCGCGCGGATC
MF110040_Cinm_camphora_Lsn CGCCGATCGTACGCCGCGCCCGCATTCGCCGCGCGGATC
KP092858_Cinm_parthenoxylon_SCBG CGCCGATCGTACGTCGCGCCCGCATTCGCCGCGCGGATC
KU139870_Cinm_parthenoxylon_HQSB CGCCGATCGTACGTCGCGCCCGCATTCGCCGCGCGGATC
KU139871_Cinm_parthenoxylon_H201 CGCCGATCGTACGTCGCGCCCGCATTCGCCGCGCGGATC
KX546421_Cinm_parthenoxylon_CXQ0 CGCCGATCGTACGTCGCGCCCGCATTCGCCGCGCGGATC
MF110054_Cinm_parthenoxylon_R178 CGCCGATCGTACGTCGCGCCCGCATTCGCCGCGCGGATC
MF110039_Cinm_camphora_G06_1425 CGCCGATCGTACGCCGCGCCCGCATTCGCCGCGCGGATC
```

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[ 0000000011111111112]
[ 12345678901234567890]
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Cinm_camphora_cf_G061425_NGS2 CG-CCCGCGGGACCAGACCC
Cinm_camphora_cf_G061425_NGS1 CA-CCCGCGGGACCAGACCC
MF096119_Cinm_camphora_KPS0050A0 CA-CTCATGGGACCAAACCTC
MF096120_Cinm_camphora_KPS0050A0 CA-CTCATGGGACCAAACCTC
MF096121_Cinm_camphora_KPS0050A0 CA-CTCATGGGACCAAACCTC
KX546586_Cinm_camphora_CXQ0384 CA-CCCGCGGGACCAGACCC
KX546756_Cinm_camphora_LJ2006004 CA-CCCGCGGGACCAGACCC
KP096040_Cinm_parthenoxylon_SCBG CR-CCCGCGGGACCAGACCC
KU139869_Cinm_parthenoxylon_CXQ2 CA-CCCGCGGGACCAGACCC
KX546594_Cinm_parthenoxylon_CXQ0 CA-CCCGCGGGACCAGACCC
KX546593_Cinm_parthenoxylon_CXQ0 CG-CCCGCGGGACCAGACCC
AF272260_Cinm_camphora CA-CCCGCGGGACCAGACCC
JX242469_Cinm_camphora_CcN CA-CTCATGGAACCAAACCTC
KP092856_Cinm_camphora_SCBGP173 CA-CCCGCGGGACCAGACCC
KP092857_Cinm_camphora_SCBGP173 CA-CCCGTGGGACCATAACCC
KP218517_Cinm_camphora_P2 CA-CCGGCGGGACCAGACCC
KP218518_Cinm_camphora_P2 CA-CCGGCGGGACCAGACCC
KT248576_Cinm_camphora_iso020 CA-CCCGCGGGACCAGACCC
KU139826_Cinm_camphora_CXQ265 CA-CCCGCGGGACCAGACCC
KX509822_Cinm_camphora_Rsn CA-CCCGCGGGACCAGACCC
KX546414_Cinm_camphora_CXQ0384 CA-CCCGCGGGACCAGACCC
KX546537_Cinm_camphora_LJ2006004 CA-CCCGCGGGACCAGACCC
KX766404_Cinm_camphora_WKUCC65 CA-CCGGCGGGACCAGACCC
MF110040_Cinm_camphora_Lsn CA-CCCGCGGGACCAGACCC
KP092858_Cinm_parthenoxylon_SCBG CG-CCCGCGGGACCAGACCC
KU139870_Cinm_parthenoxylon_HQSB CA-CCCGCGGGACCAGACCC
KU139871_Cinm_parthenoxylon_H201 CAACCCGCGGGACCAGACCC
KX546421_Cinm_parthenoxylon_CXQ0 CG-CCCGCGGGACCAGACCC
MF110054_Cinm_parthenoxylon_R178 CA-CCCGCGGGACCAGACCC
MF110039_Cinm_camphora_G06_1425 CA-CCCGCGGGACCAGACCC
```

```
;
```

```
begin traits;
  Dimensions NTraits=3;
  Format labels=yes separator=Comma;
  TraitLabels camphora parthenoxylon questionable;
```

```
matrix
  Cinm_camphora_cf_G061425_NGS2 0, 0, 1
  Cinm_camphora_cf_G061425_NGS1 0, 0, 1
  MF096119_Cinm_camphora_KPS0050A0 1, 0, 0
  MF096120_Cinm_camphora_KPS0050A0 1, 0, 0
  MF096121_Cinm_camphora_KPS0050A0 1, 0, 0
  KX546586_Cinm_camphora_CXQ0384 1, 0, 0
  KX546756_Cinm_camphora_LJ2006004 1, 0, 0
  KP096040_Cinm_parthenoxylon_SCBG 0, 1, 0
  KU139869_Cinm_parthenoxylon_CXQ2 0, 1, 0
```

```

KX546594_Cinm_parthenoxylon_CXQ0 0, 1, 0
KX546593_Cinm_parthenoxylon_CXQ0 0, 1, 0
AF272260_Cinm_camphora 1, 0, 0
JX242469_Cinm_camphora_CcN 1, 0, 0
KP092856_Cinm_camphora_SCBGP173_ 1, 0, 0
KP092857_Cinm_camphora_SCBGP173_ 1, 0, 0
KP218517_Cinm_camphora_P2 1, 0, 0
KP218518_Cinm_camphora_P2 1, 0, 0
KT248576_Cinm_camphora_iso020 1, 0, 0
KU139826_Cinm_camphora_CXQ265 1, 0, 0
KX509822_Cinm_camphora_Rsn 1, 0, 0
KX546414_Cinm_camphora_CXQ0384 1, 0, 0
KX546537_Cinm_camphora_LJ2006004 1, 0, 0
KX766404_Cinm_camphora_WKUCC65 1, 0, 0
MF110040_Cinm_camphora_Lsn 1, 0, 0
KP092858_Cinm_parthenoxylon_SCBG 0, 1, 0
KU139870_Cinm_parthenoxylon_HQSB 0, 1, 0
KU139871_Cinm_parthenoxylon_H201 0, 1, 0
KX546421_Cinm_parthenoxylon_CXQ0 0, 1, 0
MF110054_Cinm_parthenoxylon_R178 0, 1, 0
MF110039_Cinm_camphora_G06_1425 0, 0, 1
;
end;

```

### **Nexus file of total ITS data used for maximum likelihood analysis**

```

#NEXUS
[ Title Cinm_ITS]
begin taxa;
  dimensions ntax= 61;
  taxlabels
    Aiou_costaricensis_G8241
    Aiou_saligna_M3165
    Anib_firmula_M3356
    C_cam_AF272260
    C_cam_JN115020
    C_cam_JX242469
    C_cam_KP092856
    C_cam_KP092857
    C_cam_KP218517
    C_cam_KT248576
    C_cam_KU139826
    C_cam_KX546414
    C_cam_KX546537
    C_cam_KX766404
    C_cam_MF096119
    C_cam_MF096120
    C_cam_MF096121
    C_cam_MF110040
    C_par_KP092858
    C_par_KU139871
    C_par_KX546421
    C_par_MF110054
    C_por_d_MF110039
    Aiou_alainii_EH11506
    Aiou_amoena_R1072
    Cinm_burmannii_LR2010_10
    Cinm_camphora_cf_G061425_NGS2
    Cinm_chekiangense_LWB462
    Cinm_daphnoides_Lsn
    Cinm_dictyoneuron_L885
    Cinm_glanduliferum_Nsn
    Aiou_hammeliana_H14091

```

```

Cinm_iners_L31089
Cinm_insularimontanum_Rsn
Cinm_loureiroi_Lsn
Cinm_osmophloeum_Dsn
Cinm_paiei_C1237
Cinm_pittosporoides_LR2010_11
Cinm_polderi_cf_B1574
Cinm_tamala_H12882
Cinm_verum_L41050
Cinm_wilsonii_LR2010_06
Damb_coriacea_Hsn
Endl_glomerata_M3187
Laur_nobilis_HBG
Lica_crassifolia_C8248
Lind_benzoin_HBG
Mach_grijsii_HBG
Nect_psammophila_M3540
Neol_sericea_HBG
Ocot_aciphylla_M3210
Ocot_foetens_Fsn
Ocot_gabonensis_cf_W654
Ocot_indecora_M3548
Ocot_pedalifolia_D9514
Ocot_porosa_M3375
Ocot_pulchella_M3154
Ocot_quixos_N9487
Ocot_salvadorensis_R1414
Pers_americana_HBG
Phoe_sheareri_HBG
;
end;
begin characters;
    dimensions nchar= 870;
    format missing=? gap=- matchchar=. datatype=nucleotide interleave=yes;
    matrix

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[
    1234567890123456789012345678901234567890]
Aiou_costaricensis_G8241    GTCCACTGAACCTTATCATTTAGAGGAAGGAGAAGTCGTA
Aiou_saligna_M3165         GTCCACTGAACCTTATCATTTAGAGGAAGGAGAAGTCGTA
Anib_firmula_M3356         GTCCACTGAACCTTATCATTTAGAGGAAGGAGAAGTCGTA
C_cam_AF272260              -----
C_cam_JN115020              -----
C_cam_JX242469              -----
C_cam_KP092856              -----
C_cam_KP092857              -----
C_cam_KP218517              -----
C_cam_KT248576              -----
C_cam_KU139826              -----
C_cam_KX546414              -----
C_cam_KX546537              -----
C_cam_KX766404              -----
C_cam_MF096119              -----
C_cam_MF096120              -----
C_cam_MF096121              -----
C_cam_MF110040              -----
C_par_KP092858              -----
C_par_KU139871              -----
C_par_KX546421              -----
C_par_MF110054              -----
C_por_d_MF110039            -----
Aiou_alainii_EH11506       GTCCACTGAACCTTATCATTTAGAGGAAGGAGAAGTCGTA

```

Aiou_amoena_R1072	GTCCACTGAACCTTATCATTTAGAGGAAGGAGAAGTCGTA
Cinm_burmannii_LR2010_10	GTCCACTGAACCTTATCATTTAGAGGAAGGAGAAGTCGTA
Cinm_camphora_cf_G061425_NGS2	-----
Cinm_chekiangense_LWB462	GTCCACTGAACCTTATCATTTAGAGGAAGGAGAAGTCGTA
Cinm_daphnoides_Lsn	-----ACCTTATCATTTAGAGGAAGGAGAAGTCGTA
Cinm_dictyoneuron_L885	-----AACCTTATCATTTAGAGGAAGGAGAAGTCGTA
Cinm_glanduliferum_Nsn	-----AACCTTATCATTTAGAGGAAGGAGAAGTCGTA
Aiou_hammeliana_H14091	-----AGTCGTA
Cinm_iners_L31089	GTCCACTGAACCTTATCATTTAGAGGAAGGAGAAGTCGTA
Cinm_insularimontanum_Rsn	GTCCACTGAACCTTATCATTTAGAGGAAGGAGAAGTCGTA
Cinm_loureiroi_Lsn	GTCCACTGAACCTTATCATTTAGAGGAAGGAGAAGTCGTA
Cinm_osmophloeum_Dsn	GTCCACTGAACCTTATCATTTAGAGGAAGGAGAAGTCGTA
Cinm_paiei_C1237	GTCCACTGAACCTTATCATTTAGAGGAAGGAGAAGTCGTA
Cinm_pittosporoides_LR2010_11	GTCCACTGAACCTTATCATTTAGAGGAAGGAGAAGTCGTA
Cinm_polderi_cf_B1574	GTCCACTGAACCTTATCATTTAGAGGAAGGAGAAGTCGTA
Cinm_tamala_H12882	GTCCACTGACCCTTATCATTTAGAGGAAGGAGAAGTCGTA
Cinm_verum_L41050	GTCCACTGAACCTTATCATTTAGAGGAAGGAGAAGTCGTA
Cinm_wilsonii_LR2010_06	-----AACCTTATCATTTAGAGGAAGGAGAAGTCGTA
Damb_coriacea_Hsn	GTCCACTGAACCTTATCATTTAGAGGAAGGAGAAGTCGTA
Endl_glomerata_M3187	GTCCACTGAACCTTATCATTTAGAGGAAGGAGAAGTCGTA
Laur_nobilis_HBG	-----
Lica_crassifolia_C8248	GTCCACTGAACCTTATCATTTAGAGGAAGGAGAAGTCGTA
Lind_benzoin_HBG	GTCCACTGAACCTTATCATTTAGAGGAAGGAGAAGTCGTA
Mach_grijsii_HBG	-----CGTA
Nect_psammophila_M3540	-----
Neol_sericea_HBG	GTCCACTGAACCTTATCATTTAGAGGAAGGAGAAGTCGTA
Ocot_aciphylla_M3210	-----AACCTTATCATTTAGAGGAAGGAGAAGTCGTA
Ocot_foetens_Fsn	-----A
Ocot_gabonensis_cf_W654	GTCCACTGAACCTTATCATTTAGAGGAAGGAGAAGTCGTA
Ocot_indecora_M3548	GTCCACTGAACCTTATCATTTAGAGGAAGGAGAAGTCGTA
Ocot_pedalifolia_D9514	GTCCACTGAACCTTATCATTTAGAGGAAGGAGAAGTCGTA
Ocot_porosa_M3375	GTCCACTGAACCTTATCATTTAGAGGAAGGAGAAGTCGTA
Ocot_pulchella_M3154	GTCCACTGAACCTTATCATTTAGAGGAAGGAGAAGTCGTA
Ocot_quixos_N9487	-----
Ocot_salvadorensis_R1414	GTCCACTGAACCTTATCATTTAGAGGAAGGAGAAGTCGTA
Pers_americana_HBG	GTCCACTGAACCTTATCATTTAGAGGAAGGAGAAGTCGTA
Phoe_sheareri_HBG	-----AACCTTATCATTTAGAGGAAGGAGAAGTCGTA

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[	1234567890123456789012345678901234567890]
Aiou_costaricensis_G8241	ACAAGGTTTCCGTAGGTGAACCTGCGGAAGGATCATTTG--
Aiou_saligna_M3165	ACAAGGTTTCCGTAGGTGAACCTGCGGAAGGATCATTTG--
Anib_firmula_M3356	ACAAGGTTTCCGTAGGTGAACCTGCGGAAGGATCATTTG--
C_cam_AF272260	-----
C_cam_JN115020	-----
C_cam_JX242469	-----
C_cam_KP092856	-----
C_cam_KP092857	-----
C_cam_KP218517	-----
C_cam_KT248576	-----
C_cam_KU139826	-----
C_cam_KX546414	-----
C_cam_KX546537	-----
C_cam_KX766404	-----
C_cam_MF096119	-----
C_cam_MF096120	-----
C_cam_MF096121	-----
C_cam_MF110040	-----
C_par_KP092858	-----
C_par_KU139871	-----
C_par_KX546421	-----
C_par_MF110054	-----
C_por_d_MF110039	-----

Aiou_alainii_EH11506	ACAAGGTTTTCCGTAGGTGAACCTGCGGAAGGATCATTG--
Aiou_amoena_R1072	ACAAGGTTTTCCGTAGGTGAACCTGCGGAAGGATCATTG--
Cinm_burmannii_LR2010_10	ACAAGGTTTTCCGTAGGTGAACCTGCGGAAGGATCATTG--
Cinm_camphora_cf_G061425_NGS2	-----
Cinm_chekiangense_LWB462	ACAAGGTTTTCCGTAGGTGAACCTGCGGAAGGATCATTG--
Cinm_daphnoides_Lsn	ACAAGGTTTTCCGTAGGTGAACCTGCGGAAGGATCATTG--
Cinm_dictyoneuron_L885	ACAAGGTTTTCCGTAGGTGAACCTGCGGAAGGATCATTGTC
Cinm_glanduliferum_Nsn	ACAAGGTTTTCCGTAGGTGAACCTGCGGAAGGATCATTG--
Aiou_hammeliana_H14091	ACAAGGTTTTCCGTAGGTGAACCTGCGGAAGGATCATTG--
Cinm_iners_L31089	ACAAGGTTTTCCGTAGGTGAACCTGCGGAAGGATCATTG--
Cinm_insularimontanum_Rsn	ACAAGGTTTTCCGTAGGTGAACCTGCGGAAGGATCATTG--
Cinm_loureiroi_Lsn	ACAAGGTTTTCCGTAGGTGAACCTGCGGAAGGATCATTG--
Cinm_osmophloeum_Dsn	ACAAGGTTTTCCGTAGGTGAACCTGCGGAAGGATCATTG--
Cinm_paiei_C1237	ACAAGGTTTTCCGTAGGTGAACCTGCGGAAGGATCATTGTC
Cinm_pittosporoides_LR2010_11	ACAAGGTTTTCCGTAGGTGAACCTGCGGAAGGATCATTG--
Cinm_polderi_cf_B1574	ACAAGGTTTTCCGTAGGTGAACCTGCGGAAGGATCATTG--
Cinm_tamala_H12882	ACAAGGTTTTCCGTAGGTGAACCTGCGGAAGGATCATTG--
Cinm_verum_L41050	ACAAGGTTTTCCGTAGGTGAACCTGCGGAAGGATCATTGCC
Cinm_wilsonii_LR2010_06	ACAAGGTTTTCCGTAGGTGAACCTGCGGAAGGATCATTG--
Damb_coriacea_Hsn	ACAAGGTTTTCCGTAGGTGAACCTGCGGAAGGATCATTG--
Endl_glomerata_M3187	ACAAGGTTTTCCGTAGGTGAACCTGCGGAAGGATCATTG--
Laur_nobilis_HBG	-----
Lica_crassifolia_C8248	ACAAGGTTTTCCGTAGGTGAACCTGCGGAAGGATCATTG--
Lind_benzoin_HBG	ACAAGGTTTTCCGTAGGTGAACCTGCGGAAGGATCATTG--
Mach_grijsii_HBG	ACAAGGTTTTCCGTAGGTGAACCTGCGGAAGGATCATTG--
Nect_psammophila_M3540	-----
Neol_sericea_HBG	ACAAGGTTTTCCGTAGGTGAACCTGCGGAAGGATCATTG--
Ocot_aciphylla_M3210	ACAAGGTTTTCCGTAGGTGAACCTGCGGAAGGATCATTG--
Ocot_foetens_Fsn	ACAAGGTTTTCCGTAGGTGAACCTGCGGAAGGATCATTG--
Ocot_gabonensis_cf_W654	ACAAGGTTTTCCGTAGGTGAACCTGCGGAAGGATCATTG--
Ocot_indecora_M3548	ACAAGGTTTTCCGTAGGTGAACCTGCGGAAGGATCATTG--
Ocot_pedalifolia_D9514	ACAAGGTTTTCCGTAGGTGAACCTGCGGAAGGATCATTG--
Ocot_porosa_M3375	ACAAGGTTTTCCGTAGGTGAACCTGCGGAAGGATCATTG--
Ocot_pulchella_M3154	ACAAGGTTTTCCGTAGGTGAACCTGCGGAAGGATCATTG--
Ocot_quixos_N9487	-----
Ocot_salvadorensis_R1414	ACAAGGTTTTCCGTAGGTGAACCTGCGGAAGGATCATTG--
Pers_americana_HBG	ACAAGGTTTTCCGTAGGTGAACCTGCGGAAGGATCATTG--
Phoe_sheareri_HBG	ACAAGGTTTTCCGTAGGTGAACCTGCGGAAGGATCATTG--
[	11111111111111111111]
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[	1234567890123456789012345678901234567890]
Aiou_costaricensis_G8241	--CCGTCTCCGGAACGA-C--CACC GGCGAACC--AGTCC
Aiou_saligna_M3165	--TCGTCCCTGGAACCA-C--CACC GGCGAACC--AGTCC
Anib_firmula_M3356	--CCGTCTCTGGAACCA-C--CACC GGCGAACC--AGTCC
C_cam_AF272260	-----ACCA-C--CACC GGCGAACC--AGTCC
C_cam_JN115020	-----
C_cam_JX242469	-----ACCC GGCGAACC--AGTCC
C_cam_KP092856	-----
C_cam_KP092857	-----
C_cam_KP218517	-----ACCA-C--CACC GGCGAACC--AGTCC
C_cam_KT248576	-----
C_cam_KU139826	-----GAACC--AGTCC
C_cam_KX546414	-----CGAACC--AGTCC
C_cam_KX546537	-----CGAACC--AGTCC
C_cam_KX766404	-----ACCA-C--CACC GGCGAACC--AGTCC
C_cam_MF096119	-----
C_cam_MF096120	-----
C_cam_MF096121	-----
C_cam_MF110040	-----ACCA-C--CACC GGCGAACC--AGTCC
C_par_KP092858	-----
C_par_KU139871	-----GAACC--AGTCC
C_par_KX546421	-----CGAACC--AGTCC



























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Aiou_costaricensis_G8241	T-CGGCCGAGGGCACGCCTGCCTGGGCGTCACGCCACCCA
Aiou_saligna_M3165	T-CGGCCGAGGGCACGCCTGCCTGGGCGTCACGCCACCCA
Anib_firmula_M3356	T-CGGCCGAGGGCACGCCTGCCTGGGCGTCACGCCACCCA
C_cam_AF272260	T-CGGCCGAGGGCACGCCTGCCTGGGCGTCACGCCACCCA
C_cam_JN115020	T-CAGCCGAGGGCACGCCTGCCTGGGCGTCATGCCAGCCC
C_cam_JX242469	T-CAGCCGAGGGCACGCCTGCCTGGGCGTCATGCCACCCA
C_cam_KP092856	T-CGGCCGAGGGCACGCCTGCCTGGGCGTCACGCCACCCA
C_cam_KP092857	C-CGGCCGAGGGCACGCCTGCCTGGGCGTCACGCCACCCA
C_cam_KP218517	T-CGGCCGAGGGCACGCCTGCCTGGGCGTCACGCCACCCCG
C_cam_KT248576	T-CGGCCGAGGGCACGCCTGCCTGGGCGTCACGCCACCCA
C_cam_KU139826	T-CGGCCGAGGGCACGCCTGCCTGGGCGTCACGCCACCCR
C_cam_KX546414	T-CGGCCGAGGGCACGCCTGCCTGGGCGTCACGCCACCCCG
C_cam_KX546537	T-CGGCCGAGGGCACGCCTGCCTGGGCGTCACGCCACCCA
C_cam_KX766404	T-CGGCCGAGGGCACGCCTGCCTGGGCGTCACGCCACCCCG
C_cam_MF096119	-----GCCACCCA
C_cam_MF096120	-----GCCACCCA
C_cam_MF096121	-----GCCACCCA
C_cam_MF110040	T-CGGCCGAGGGCACGCCTGCCTGGGCGTCACGCCACCCA
C_par_KP092858	T-CGGCCGAGGGCACGCCTGCCTGGGCGTCACGCCACCCA
C_par_KU139871	T-CGGCCGAGGGCACGCCTGCCTGGGCGTCACGCCACCCA
C_par_KX546421	T-CGGCCGAGGGCACGCCTGCCTGGGCGTCACGCCACCCA
C_par_MF110054	T-CGGCCGAGGGCACGCCTGCCTGGGCGTCACGCCACCCA
C_por_d_MF110039	T-CGGCCGAGGGCACGCCTGCCTGGGCGTCACGCCACCCR
Aiou_alainii_EH11506	T-CGGCCGAGGGCACGCCTGCCTGGGCGTCACGCCACCCA
Aiou_amoena_R1072	T-CGGCCGAGGGCACGCCTGCCTGGGCGTCACGCCACCCA
Cinm_burmannii_LR2010_10	C-CGGCCGAGGGCACGCCTGCCTGGGCGTCACGCCACCCA
Cinm_camphora_cf_G061425_NGS2	T-CGGCCGAGGGCACGCCTGCCTGGGCGTCACGCCACCCA
Cinm_chekiangense_LWB462	T-CGGCCGAGGGCACGCCTGCCTGGGCGTCACGCCACCCA
Cinm_daphnoides_Lsn	T-CGGCCGAGGGCACGCCTGCCTGGGCGTCACGCCACCCA
Cinm_dictyoneuron_L885	T-CGGCCGAGGGCACGCCTGCCTGGGCGTCACGCCACCCA
Cinm_glanduliferum_Nsn	T-CGGCCGAGGGCACGCCTGCCTGGGCGTCACGCCACCCA
Aiou_hammeliana_H14091	T-CGGCCGAGGGCACGCCTGCCTGGGCGTCACGCCACCCA
Cinm_iners_L31089	T-CGGCCGAGGGCACGCCTGCCTGGGCGTCACGCCACCCA
Cinm_insularimontanum_Rsn	T-CGGCCGAGGGCACGCCTGCCTGGGCGTCACGCCACCCA
Cinm_loureiroy_Lsn	T-CGGCCGAGGGCACGCCTGCCTGGGCGTCACGCCACCCA
Cinm_osmophloeum_Dsn	T-CGGCCGAGGGCACGCCTGCCTGGGCGTCACGCCACCCA
Cinm_paiei_C1237	T-CGGCCGAGGGCACGCCTGCCTGGGCGTCACGCCACCCA
Cinm_pittosporoides_LR2010_11	T-CGGCCGAGGGCACGCCTGCCTGGGCGTCACGCCACCCA
Cinm_polderi_cf_B1574	C-CGGCCGAGGGCACGCCTGCCTGGGCGTCACGCCACCCA
Cinm_tamala_H12882	T-CGGCCGAGGGCACGCCTGCCTGGGCGTCACGCCACCCA
Cinm_verum_L41050	T-CGGCCGAGGGCACGCCTGCCTGGGCGTCACGCCACCCA
Cinm_wilsoniani_LR2010_06	T-CGGCCGAGGGCACGCCTGCCTGGGCGTCACGCCACCCA
Damb_coriacea_Hsn	T-CGGCCGAGGGCACGCCTGCCTGGGCGTCACGCCACCCA
Endl_glomerata_M3187	T-CGGCCGAGGGCACGCCTGCCTGGGCGTCACGCCACCCCG
Laur_nobilis_HBG	T-CGGCCGAGGGCACGCCTGCCTGGGCGTCACGCCACCCA
Lica_crassifolia_C8248	T-CGGCCGAGGGCACGCCTGCCTGGGCGTCACGCCACCCCG
Lind_benzoin_HBG	T-CGGCCGAGGGCACGCCTGCCTGGGCGTCACGCCACCCA
Mach_grijsii_HBG	T-CGGCCGAGGGCACGCCTGCCTGGGCGTCACGCCACCCA
Nect_psammophila_M3540	T-CGGCCGAGGGCACGCCTGCCTGGGGGTCACGCCACCCC
Neol_sericea_HBG	T-CGGCCGAGGGCACGCCTGCCTGGGCGTCACGCCACCCA
Ocot_aciphylla_M3210	T-CGGCCGAGGGCACGCCTGCCTGGGCGTCACGCCACCCA
Ocot_foetens_Fsn	T-CGGCCGAGGGCACGCCTGCCTGGGCGTCACGCCACCCA
Ocot_gabonensis_cf_W654	T-CGGCCGAGGGCACGCCTGCCTGGGCGTCACGCCACCCA
Ocot_indecora_M3548	T-CGGCCGAGGGCACGCCTGCCTGGGCGTCACGCCACCCA
Ocot_pedalifolia_D9514	T-CGGCCGAGGGCACGCCTGCCTGGGCGTCACGCCACCCA
Ocot_porosa_M3375	C-CGGCCGAGGGCACGCCTGCCTGGGCGTCACGCCACCCA
Ocot_pulchella_M3154	T-CGGCCGAGGGCACGCCTGCCTGGGCGTCACGCCACCCA
Ocot_quixos_N9487	C-CGGCCGAGGGCACGCCTGCCTGGGCGTCACGCCACCCCG
Ocot_salvadorensis_R1414	T-CGGCCGAGGGCACGCCTGCCTGGGCGTCACGCCACCCA
Pers_americana_HBG	T-CGGCCGAGGGCACGCCTGCCTGGGCGTCACGCCACCCA
Phoe_sheareri_HBG	T-CGGCCGAGGGCACGCCTGCCTGGGCGTCACGCCACCCA



















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Lind_benzoin_HBG          CTGAATTTAAGCATATC-----
Mach_grijsii_HBG         CTGAATTTAAGCATATCAATAAG-----
Nect_psammophila_M3540   -----
Neol_sericea_HBG         CTGAATTTAAGCATATCAATAAGCGGAGGA
Ocot_aciphylla_M3210     CTGAATTTAAGCATATCAATAAGCGGAGGA
Ocot_foetens_Fsn        CTGAATTTAAGCATATCAATAAGCGGAGGA
Ocot_gabonensis_cf_W654 CTGAATTTAAGCATATC-----
Ocot_indecora_M3548      CTGAATTTAAGCATATCAATAAGCGGAGGA
Ocot_pedalifolia_D9514  CTGAATTTAAGCATATCAATAAGCGGAGGA
Ocot_porosa_M3375        CTGAATTTAAGCATATCAATAAGCGGAGGA
Ocot_pulchella_M3154    CTGAATTTAAGCATATCAATAAGCGGAGGA
Ocot_quixos_N9487        CTGAATTTAAGCATATCAATAAGCGGAGGA
Ocot_salvadorensis_R1414 CTGAATTTAAGCATATCAATAAGCGGAGGA
Pers_americana_HBG       CTGAATTTAAGCATATCAATAAGCGGAGGA
Phoe_sheareri_HBG       CTGAATTTAAGCATATCAATAAGCGGAGGA
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end;
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