

Table S1. The repeat sequences list of four *Crataegus* species.

| Sample | Repeat A length | Repeat A Start Position | Repeat A Location | Partition 1 | Partition 2 | Repeat B length | Repeat B Start Position | Repeat B Location | Partition 1 | Partition 2 | Repeat Type |
|-------------------------|--------------------|----------------------------|------------------------|----------------|----------------|--------------------|----------------------------|------------------------|----------------|----------------|----------------|
| <i>C. bretschnideri</i> | 34 | 11 | <i>rps19-trnH(GUG)</i> | Spacer | LSC | 34 | 11 | <i>rps19-trnH(GUG)</i> | | LSC | P |
| <i>C. bretschnideri</i> | 31 | 8359 | <i>psbI-trnS(GCU)</i> | Spacer | LSC | 31 | 38037 | <i>psbC-trnS(UGA)</i> | | LSC | F |
| <i>C. bretschnideri</i> | 30 | 8360 | <i>psbI-trnS(GCU)</i> | Spacer | LSC | 30 | 47759 | <i>ycf3-trnS(GGA)</i> | | LSC | P |
| <i>C. bretschnideri</i> | 31 | 10245 | <i>trnR(UCU)-atpA</i> | Spacer | LSC | 31 | 10262 | <i>trnR(UCU)-atpA</i> | | LSC | P |
| <i>C. bretschnideri</i> | 31 | 10250 | <i>trnR(UCU)-atpA</i> | Spacer | LSC | 31 | 10250 | <i>trnR(UCU)-atpA</i> | | LSC | P |
| <i>C. bretschnideri</i> | 33 | 13705 | <i>atpF-atpH</i> | Spacer | LSC | 33 | 13705 | <i>atpF-atpH</i> | | LSC | P |
| <i>C. bretschnideri</i> | 33 | 30899 | <i>petN-psbM</i> | Spacer | LSC | 33 | 71078 | <i>rpl33-rps18</i> | | LSC | R |
| <i>C. bretschnideri</i> | 30 | 31883 | <i>psbM-trnD(GUC)</i> | Spacer | LSC | 30 | 31883 | <i>psbM-trnD(GUC)</i> | | LSC | R |
| <i>C. bretschnideri</i> | 32 | 32148 | <i>psbM-trnD(GUC)</i> | Spacer | LSC | 32 | 32148 | <i>psbM-trnD(GUC)</i> | | LSC | P |
| <i>C. bretschnideri</i> | 30 | 38038 | <i>psbC-trnS(UGA)</i> | Spacer | LSC | 30 | 47759 | <i>ycf3-trnS(GGA)</i> | | LSC | P |
| <i>C. bretschnideri</i> | 32 | 38989 | <i>psbZ-trnG(UCC)</i> | Spacer | LSC | 32 | 38989 | <i>psbZ-trnG(UCC)</i> | | LSC | R |
| <i>C. bretschnideri</i> | 38 | 46291 | <i>ycf3</i> | Intron | LSC | 38 | 125078 | <i>ndhA</i> | Intron | SSC | F |
| <i>C. bretschnideri</i> | 39 | 46291 | <i>ycf3</i> | Intron | LSC | 39 | 102299 | <i>rps12-trnV(GAC)</i> | Spacer | IRa | F |
| <i>C. bretschnideri</i> | 39 | 46291 | <i>ycf3</i> | Intron | LSC | 39 | 144870 | <i>trnV(GAC)-rps12</i> | Spacer | IRb | P |
| <i>C. bretschnideri</i> | 30 | 46303 | <i>ycf3</i> | Intron | LSC | 30 | 102311 | <i>rps12-trnV(GAC)</i> | Spacer | IRa | F |
| <i>C. bretschnideri</i> | 30 | 46303 | <i>ycf3</i> | Intron | LSC | 30 | 144867 | <i>trnV(GAC)-rps12</i> | Spacer | IRb | P |
| <i>C. bretschnideri</i> | 35 | 49210 | <i>trnT(UGU)</i> | Exon | LSC | 35 | 49244 | <i>trnT(UGU)</i> | Exon | LSC | F |
| <i>C. bretschnideri</i> | 63 | 55462 | <i>trnM(CAU)-atpE</i> | Spacer | LSC | 63 | 55462 | <i>trnM(CAU)-atpE</i> | Spacer | LSC | P |
| <i>C. bretschnideri</i> | 33 | 62245 | <i>accD-psaI</i> | Spacer | LSC | 33 | 62269 | <i>accD-psaI</i> | Spacer | LSC | F |
| <i>C. bretschnideri</i> | 30 | 62247 | <i>accD-psaI</i> | Spacer | LSC | 30 | 62320 | | | LSC | F |
| <i>C. bretschnideri</i> | 30 | 62276 | <i>accD-psaI</i> | Spacer | LSC | 30 | 62306 | | | LSC | F |
| <i>C. bretschnideri</i> | 38 | 70019 | <i>trnP(UGG)-psaJ</i> | Spacer | LSC | 38 | 70052 | | | LSC | F |
| <i>C. bretschnideri</i> | 32 | 70433 | <i>psaJ-rpl33</i> | Spacer | LSC | 32 | 70433 | | | LSC | R |

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|--------------------------|----|--------|------------------------|--------|-----|----|--------|------------------------|--------|-----|---|
| <i>C. bretschneideri</i> | 30 | 71710 | <i>rps18-rpl20</i> | Spacer | LSC | 30 | 71734 | | | LSC | F |
| <i>C. bretschneideri</i> | 44 | 77597 | <i>psbT-psbN</i> | Spacer | LSC | 44 | 77597 | <i>psbT-psbN</i> | Spacer | LSC | P |
| <i>C. bretschneideri</i> | 32 | 92533 | <i>ycf2</i> | Exon | IRa | 32 | 92554 | <i>ycf2</i> | Exon | IRa | F |
| <i>C. bretschneideri</i> | 32 | 92533 | <i>ycf2</i> | Exon | IRa | 32 | 154622 | <i>ycf2</i> | Exon | IRb | P |
| <i>C. bretschneideri</i> | 32 | 92554 | <i>ycf2</i> | Exon | IRa | 32 | 154643 | <i>ycf2</i> | Exon | IRb | P |
| <i>C. bretschneideri</i> | 34 | 94955 | <i>ycf2</i> | Exon | IRa | 34 | 94973 | <i>ycf2</i> | Exon | IRa | F |
| <i>C. bretschneideri</i> | 34 | 94955 | <i>ycf2</i> | Exon | IRa | 34 | 152201 | <i>ycf2</i> | Exon | IRb | P |
| <i>C. bretschneideri</i> | 34 | 94973 | <i>ycf2</i> | Exon | IRa | 34 | 152219 | <i>ycf2</i> | Exon | IRb | P |
| <i>C. bretschneideri</i> | 35 | 97965 | <i>trnL(CAA)-ndhB</i> | Spacer | IRa | 35 | 97986 | <i>trnL(CAA)-ndhB</i> | Spacer | IRa | F |
| <i>C. bretschneideri</i> | 35 | 97965 | <i>trnL(CAA)-ndhB</i> | Spacer | IRa | 35 | 149187 | <i>ndhB-trnL(CAA)</i> | Spacer | IRb | P |
| <i>C. bretschneideri</i> | 35 | 97986 | <i>trnL(CAA)-ndhB</i> | Spacer | IRa | 35 | 149208 | <i>ndhB-trnL(CAA)</i> | Spacer | IRb | P |
| <i>C. bretschneideri</i> | 31 | 99654 | <i>ndhB</i> | Exon | IRa | 31 | 99654 | <i>ndhB</i> | Exon | IRa | P |
| <i>C. bretschneideri</i> | 31 | 99654 | <i>ndhB</i> | Exon | IRa | 31 | 147523 | <i>ndhB</i> | Intron | IRb | F |
| <i>C. bretschneideri</i> | 40 | 102297 | <i>rps12-trnV(GAC)</i> | Spacer | IRa | 40 | 125076 | <i>ndhA</i> | Intron | SSC | F |
| <i>C. bretschneideri</i> | 30 | 113483 | <i>ycf1</i> | Exon | IRa | 30 | 113483 | <i>ycf1</i> | Exon | IRa | P |
| <i>C. bretschneideri</i> | 30 | 113483 | <i>ycf1</i> | Exon | IRa | 30 | 133695 | <i>ycf1</i> | Exon | IRb | F |
| <i>C. bretschneideri</i> | 31 | 116608 | <i>ndhF-rpl32</i> | Spacer | SSC | 31 | 116658 | <i>ndhF-rpl32</i> | Spacer | SSC | F |
| <i>C. bretschneideri</i> | 53 | 116612 | <i>ndhF-rpl32</i> | Spacer | SSC | 53 | 116637 | <i>ndhF-rpl32</i> | Spacer | SSC | F |
| <i>C. bretschneideri</i> | 30 | 118670 | <i>rpl32-trnL(UAG)</i> | Spacer | SSC | 30 | 118691 | <i>rpl32-trnL(UAG)</i> | Spacer | SSC | F |
| <i>C. bretschneideri</i> | 31 | 118687 | <i>rpl32-trnL(UAG)</i> | Spacer | SSC | 31 | 118711 | <i>rpl32-trnL(UAG)</i> | Spacer | SSC | F |
| <i>C. bretschneideri</i> | 40 | 125076 | <i>ndhA</i> | Intron | SSC | 40 | 144871 | <i>trnV(GAC)-rps12</i> | Spacer | IRb | P |
| <i>C. bretschneideri</i> | 30 | 133695 | <i>ycf1</i> | Exon | IRb | 30 | 133695 | <i>ycf1</i> | Exon | IRb | P |
| <i>C. bretschneideri</i> | 31 | 147523 | <i>ndhB</i> | Intron | IRb | 31 | 147523 | <i>ndhB</i> | Intron | IRb | P |
| <i>C. bretschneideri</i> | 35 | 149187 | <i>ndhB-trnL(CAA)</i> | Spacer | IRb | 35 | 149208 | <i>ndhB-trnL(CAA)</i> | Spacer | IRb | F |
| <i>C. bretschneideri</i> | 34 | 152201 | <i>ycf2</i> | Exon | IRb | 34 | 152219 | <i>ycf2</i> | Exon | IRb | F |
| <i>C. bretschneideri</i> | 32 | 154622 | <i>ycf2</i> | Exon | IRb | 32 | 154643 | <i>ycf2</i> | Exon | IRb | F |

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|--|----|-------|-----------------------|--------|-----|----|--------|------------------------|--------|-----|---|
| <i>C. pinnatifida</i> var. <i>major</i> | 31 | 186 | <i>trnH(GUG)-psbA</i> | Spacer | LSC | 31 | 186 | <i>trnH(GUG)-psbA</i> | Spacer | LSC | P |
| <i>C. pinnatifida</i> var. <i>major</i> | 31 | 8357 | <i>psbI-trnS(GCU)</i> | Spacer | LSC | 31 | 38084 | <i>trnS(UGA)-psbZ</i> | Spacer | LSC | F |
| <i>C. pinnatifida</i> var. <i>major</i> | 30 | 8358 | <i>psbI-trnS(GCU)</i> | Spacer | LSC | 30 | 47800 | <i>trnS(GGA)-rps4</i> | Spacer | LSC | P |
| <i>C. pinnatifida</i> var. <i>major</i> | 31 | 10214 | <i>trnR(UCU)-atpA</i> | Spacer | LSC | 31 | 10231 | <i>trnR(UCU)-atpA</i> | Spacer | LSC | P |
| <i>C. pinnatifida</i> var. <i>major</i> | 31 | 10219 | <i>trnR(UCU)-atpA</i> | Spacer | LSC | 31 | 10219 | <i>trnR(UCU)-atpA</i> | Spacer | LSC | P |
| <i>C. pinnatifida</i> var. <i>major</i> | 31 | 10569 | <i>trnR(UCU)-atpA</i> | Spacer | LSC | 31 | 10584 | <i>trnR(UCU)-atpA</i> | Spacer | LSC | C |
| <i>C. pinnatifida</i> var. <i>major</i> | 33 | 13717 | <i>atpF-atpH</i> | Spacer | LSC | 33 | 13717 | <i>atpF-atpH</i> | Spacer | LSC | P |
| <i>C. pinnatifida</i> var. <i>major</i> | 31 | 15144 | <i>atpH-atpI</i> | Spacer | LSC | 31 | 15169 | <i>atpH-atpI</i> | Spacer | LSC | F |
| <i>C. pinnatifida</i> var. <i>major</i> | 32 | 32168 | <i>psbM-trnD(GUC)</i> | Spacer | LSC | 32 | 32168 | <i>psbM-trnD(GUC)</i> | Spacer | LSC | P |
| <i>C. pinnatifida</i> var. <i>major</i> | 33 | 34153 | <i>trnT(GGU)-psbD</i> | Spacer | LSC | 33 | 34212 | <i>trnT(GGU)-psbD</i> | Spacer | LSC | F |
| <i>C. pinnatifida</i> var. <i>major</i> | 33 | 34154 | <i>trnT(GGU)-psbD</i> | Spacer | LSC | 33 | 34154 | <i>trnT(GGU)-psbD</i> | Spacer | LSC | R |
| <i>C. pinnatifida</i> var. <i>major</i> | 38 | 34173 | <i>trnT(GGU)-psbD</i> | Spacer | LSC | 38 | 34192 | <i>trnT(GGU)-psbD</i> | Spacer | LSC | F |
| <i>C. pinnatifida</i> var. <i>major</i> | 39 | 46336 | <i>ycf3</i> | Intron | LSC | 39 | 102453 | <i>rps12-trnV(GAC)</i> | Spacer | IRa | F |

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|--|----|-------|----------------------------|--------|-----|----|--------|----------------------------|--------|-----|---|
| <i>C. pinnatifida</i> var. <i>major</i> | 39 | 46336 | <i>ycf3</i> | Intron | LSC | 39 | 144913 | <i>trnV(GAC)-rps12</i> | Spacer | IRb | P |
| <i>C. pinnatifida</i> var. <i>major</i> | 38 | 46336 | <i>ycf3</i> | Intron | LSC | 38 | 125093 | <i>ndhA</i> | Intron | SSC | F |
| <i>C. pinnatifida</i> var. <i>major</i> | 35 | 49288 | <i>trnT(UGU)-trnL(UAA)</i> | Spacer | LSC | 35 | 49322 | <i>trnT(UGU)-trnL(UAA)</i> | Spacer | LSC | F |
| <i>C. pinnatifida</i> var. <i>major</i> | 30 | 54031 | <i>ndhC-trnV(UAC)</i> | Spacer | LSC | 30 | 54057 | <i>ndhC-trnV(UAC)</i> | Spacer | LSC | F |
| <i>C. pinnatifida</i> var. <i>major</i> | 63 | 55505 | <i>trnM(CAU)-atpE</i> | Spacer | LSC | 63 | 55505 | <i>trnM(CAU)-atpE</i> | Spacer | LSC | P |
| <i>C. pinnatifida</i> var. <i>major</i> | 34 | 62323 | <i>accD-psaI</i> | Spacer | LSC | 34 | 62347 | <i>accD-psaI</i> | Spacer | LSC | F |
| <i>C. pinnatifida</i> var. <i>major</i> | 47 | 66655 | <i>petA-psbJ</i> | Spacer | LSC | 47 | 66671 | <i>petA-psbJ</i> | Spacer | LSC | F |
| <i>C. pinnatifida</i> var. <i>major</i> | 31 | 66655 | <i>petA-psbJ</i> | Spacer | LSC | 31 | 66687 | <i>petA-psbJ</i> | Spacer | LSC | F |
| <i>C. pinnatifida</i> var. <i>major</i> | 31 | 67313 | <i>psbL</i> | Exon | LSC | 31 | 67344 | <i>psbL</i> | | LSC | F |
| <i>C. pinnatifida</i> var. <i>major</i> | 32 | 70553 | <i>psaJ-rpl33</i> | Spacer | LSC | 32 | 70553 | <i>psaJ-rpl33</i> | Spacer | LSC | R |
| <i>C. pinnatifida</i> var. <i>major</i> | 44 | 77696 | <i>psbN</i> | Exon | LSC | 44 | 77696 | <i>psbN</i> | Exon | LSC | P |
| <i>C. pinnatifida</i> var. <i>major</i> | 31 | 82946 | <i>rpl36</i> | Exon | LSC | 31 | 82946 | <i>rpl36</i> | Exon | LSC | R |
| <i>C. pinnatifida</i> var. <i>major</i> | 32 | 92687 | <i>ycf2</i> | Exon | IRa | 32 | 92708 | <i>ycf2</i> | Exon | LSC | F |

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|--|----|--------|------------------------|--------|-----|----|--------|-----------------------|--------|-----|---|
| <i>C. pinnatifida</i> var. <i>major</i> | 32 | 92687 | <i>ycf2</i> | Exon | IRa | 32 | 154665 | <i>ycf2</i> | Exon | IRb | P |
| <i>C. pinnatifida</i> var. <i>major</i> | 32 | 92708 | <i>ycf2</i> | Exon | IRa | 32 | 154686 | <i>ycf2</i> | Exon | IRb | P |
| <i>C. pinnatifida</i> var. <i>major</i> | 34 | 95109 | <i>ycf2</i> | Exon | IRa | 34 | 95127 | <i>ycf2</i> | Exon | IRa | F |
| <i>C. pinnatifida</i> var. <i>major</i> | 34 | 95109 | <i>ycf2</i> | Exon | IRa | 34 | 152244 | <i>ycf2</i> | Exon | IRb | P |
| <i>C. pinnatifida</i> var. <i>major</i> | 34 | 95127 | <i>ycf2</i> | Exon | IRa | 34 | 152262 | <i>ycf2</i> | Exon | IRb | P |
| <i>C. pinnatifida</i> var. <i>major</i> | 35 | 98119 | <i>trnL(CAA)-ndhB</i> | Spacer | IRa | 35 | 98140 | <i>trnL(CAA)-ndhB</i> | Spacer | IRa | F |
| <i>C. pinnatifida</i> var. <i>major</i> | 35 | 98119 | <i>trnL(CAA)-ndhB</i> | Spacer | IRa | 35 | 149230 | <i>ndhB-trnL(CAA)</i> | Spacer | IRb | P |
| <i>C. pinnatifida</i> var. <i>major</i> | 35 | 98140 | <i>trnL(CAA)-ndhB</i> | Spacer | IRa | 35 | 149251 | <i>ndhB-trnL(CAA)</i> | Spacer | IRb | P |
| <i>C. pinnatifida</i> var. <i>major</i> | 31 | 99808 | <i>ndhB</i> | Intron | IRa | 31 | 99808 | <i>ndhB</i> | Intron | IRa | P |
| <i>C. pinnatifida</i> var. <i>major</i> | 31 | 99808 | <i>ndhB</i> | Intron | IRa | 31 | 147566 | <i>ndhB</i> | Intron | IRb | F |
| <i>C. pinnatifida</i> var. <i>major</i> | 40 | 102451 | <i>rps12-trnV(GAC)</i> | Spacer | IRa | 40 | 125091 | <i>ndhA</i> | Intron | SSC | F |
| <i>C. pinnatifida</i> var. <i>major</i> | 33 | 111401 | <i>rrn4.5-rrn5</i> | Spacer | IRa | 33 | 111432 | <i>rrn5</i> | Exon | IRa | F |
| <i>C. pinnatifida</i> var. <i>major</i> | 33 | 111401 | <i>rrn4.5-rrn5</i> | Spacer | IRa | 33 | 135940 | <i>rrn5-rrn4.5</i> | Spacer | IRb | P |

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|--|----|--------|-----------------------|--------|-----|----|--------|------------------------|--------|-----|---|
| <i>C. pinnatifida</i> var. <i>major</i> | 33 | 111432 | <i>rrn5</i> | Exon | IRa | 33 | 135971 | <i>rrn5-rrn4.5</i> | Spacer | IRb | P |
| <i>C. pinnatifida</i> var. <i>major</i> | 30 | 113668 | <i>ycf1</i> | Exon | IRa | 30 | 113668 | <i>ycf1</i> | Exon | IRa | P |
| <i>C. pinnatifida</i> var. <i>major</i> | 30 | 113668 | <i>ycf1</i> | Exon | IRa | 30 | 133707 | <i>ycf1</i> | Exon | IRb | F |
| <i>C. pinnatifida</i> var. <i>major</i> | 40 | 125091 | <i>ndhA</i> | Intron | SSC | 40 | 144914 | <i>trnV(GAC)-rps12</i> | Spacer | IRb | P |
| <i>C. pinnatifida</i> var. <i>major</i> | 30 | 133707 | <i>ycf1</i> | Exon | IRb | 30 | 133707 | <i>ycf1</i> | Exon | IRb | P |
| <i>C. pinnatifida</i> var. <i>major</i> | 33 | 135940 | <i>rrn5-rrn4.5</i> | Spacer | IRb | 33 | 135971 | <i>rrn5-rrn4.5</i> | Spacer | IRb | F |
| <i>C. pinnatifida</i> var. <i>major</i> | 31 | 147566 | <i>ndhB</i> | Intron | IRb | 31 | 147566 | <i>ndhB</i> | Intron | IRb | P |
| <i>C. pinnatifida</i> var. <i>major</i> | 35 | 149230 | <i>ndhB-trnL(CAA)</i> | Spacer | IRb | 35 | 149251 | <i>ndhB-trnL(CAA)</i> | Spacer | IRb | F |
| <i>C. pinnatifida</i> var. <i>major</i> | 34 | 152244 | <i>ycf2</i> | Exon | IRb | 34 | 152262 | <i>ycf2</i> | Exon | IRb | F |
| <i>C. pinnatifida</i> var. <i>major</i> | 32 | 154665 | <i>ycf2</i> | Exon | IRb | 32 | 154686 | <i>ycf2</i> | Exon | IRb | F |
| <i>C. pinnatifida</i> | 31 | 186 | <i>trnH(GUG)-psbA</i> | Spacer | LSC | 31 | 186 | <i>trnH(GUG)-psbA</i> | Spacer | LSC | P |
| <i>C. pinnatifida</i> | 31 | 8357 | <i>psbI-trnS(GCU)</i> | Spacer | LSC | 31 | 38095 | <i>trnS(UGA)</i> | Exon | LSC | F |
| <i>C. pinnatifida</i> | 30 | 8358 | <i>psbI-trnS(GCU)</i> | Spacer | LSC | 30 | 47811 | <i>trnS(GGA)-rps4</i> | Spacer | LSC | P |
| <i>C. pinnatifida</i> | 31 | 10214 | <i>trnR(UCU)-atpA</i> | Spacer | LSC | 31 | 10231 | <i>trnR(UCU)-atpA</i> | Spacer | LSC | P |
| <i>C. pinnatifida</i> | 31 | 10219 | <i>trnR(UCU)-atpA</i> | Spacer | LSC | 31 | 10219 | <i>trnR(UCU)-atpA</i> | Spacer | LSC | P |
| <i>C. pinnatifida</i> | 31 | 10278 | <i>trnR(UCU)-atpA</i> | Spacer | LSC | 31 | 10303 | <i>trnR(UCU)-atpA</i> | Spacer | LSC | F |

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|-----------------------|----|-------|----------------------------|--------|-----|----|--------|----------------------------|--------|-----|---|
| <i>C. pinnatifida</i> | 31 | 10578 | <i>trnR(UCU)-atpA</i> | Spacer | LSC | 31 | 10593 | <i>trnR(UCU)-atpA</i> | Spacer | LSC | C |
| <i>C. pinnatifida</i> | 33 | 13726 | <i>atpF-atpH</i> | Spacer | LSC | 33 | 13726 | <i>atpF-atpH</i> | Spacer | LSC | P |
| <i>C. pinnatifida</i> | 31 | 15155 | <i>atpH-atpI</i> | Spacer | LSC | 31 | 15180 | <i>atpH-atpI</i> | Spacer | LSC | F |
| <i>C. pinnatifida</i> | 32 | 32179 | <i>psbM-trnD(GUC)</i> | Spacer | LSC | 32 | 32179 | <i>psbM-trnD(GUC)</i> | Spacer | LSC | P |
| <i>C. pinnatifida</i> | 33 | 34164 | <i>trnT(GGU)-psbD</i> | Spacer | LSC | 33 | 34223 | <i>trnT(GGU)-psbD</i> | Spacer | LSC | F |
| <i>C. pinnatifida</i> | 33 | 34165 | <i>trnT(GGU)-psbD</i> | Spacer | LSC | 33 | 34165 | <i>trnT(GGU)-psbD</i> | Spacer | LSC | R |
| <i>C. pinnatifida</i> | 38 | 34184 | <i>trnT(GGU)-psbD</i> | Spacer | LSC | 38 | 34203 | <i>trnT(GGU)-psbD</i> | Spacer | LSC | F |
| <i>C. pinnatifida</i> | 39 | 46347 | <i>ycf3</i> | Intron | LSC | 39 | 102448 | <i>rps12-trnV(GAC)</i> | Spacer | IRa | F |
| <i>C. pinnatifida</i> | 39 | 46347 | <i>ycf3</i> | Intron | LSC | 39 | 144933 | <i>trnV(GAC)-rps12</i> | Spacer | IRb | P |
| <i>C. pinnatifida</i> | 38 | 46347 | <i>ycf3</i> | Intron | LSC | 38 | 125089 | <i>ndhA</i> | Intron | SSC | F |
| <i>C. pinnatifida</i> | 35 | 49299 | <i>trnT(UGU)-trnL(UAA)</i> | Spacer | LSC | 35 | 49333 | <i>trnT(UGU)-trnL(UAA)</i> | Spacer | LSC | F |
| <i>C. pinnatifida</i> | 30 | 54047 | <i>ndhC-trnV(UAC)</i> | Spacer | LSC | 30 | 54073 | <i>ndhC-trnV(UAC)</i> | Spacer | LSC | F |
| <i>C. pinnatifida</i> | 63 | 55484 | <i>trnM(CAU)-atpE</i> | Spacer | LSC | 63 | 55484 | <i>trnM(CAU)-atpE</i> | Spacer | LSC | P |
| <i>C. pinnatifida</i> | 34 | 62302 | <i>accD-psaI</i> | Spacer | LSC | 34 | 62326 | <i>accD-psaI</i> | Spacer | LSC | F |
| <i>C. pinnatifida</i> | 63 | 66634 | <i>petA-psbJ</i> | Spacer | LSC | 63 | 66650 | <i>petA-psbJ</i> | Spacer | LSC | F |
| <i>C. pinnatifida</i> | 47 | 66634 | <i>petA-psbJ</i> | Spacer | LSC | 47 | 66666 | <i>petA-psbJ</i> | Spacer | LSC | F |
| <i>C. pinnatifida</i> | 31 | 66634 | <i>petA-psbJ</i> | Spacer | LSC | 31 | 66682 | <i>petA-psbJ</i> | Spacer | LSC | F |
| <i>C. pinnatifida</i> | 31 | 67308 | <i>psbL</i> | Exon | LSC | 31 | 67339 | <i>psbL</i> | Exon | LSC | F |
| <i>C. pinnatifida</i> | 32 | 70548 | <i>psaJ-rpl33</i> | Spacer | LSC | 32 | 70548 | <i>psaJ-rpl33</i> | Spacer | LSC | R |
| <i>C. pinnatifida</i> | 44 | 77692 | <i>psbN</i> | Exon | LSC | 44 | 77692 | <i>psbN</i> | Exon | LSC | P |
| <i>C. pinnatifida</i> | 31 | 82942 | <i>rpl36</i> | Exon | LSC | 31 | 82942 | <i>rpl36</i> | Exon | LSC | R |
| <i>C. pinnatifida</i> | 32 | 92682 | <i>ycf2</i> | Exon | IRa | 32 | 92703 | <i>ycf2</i> | Exon | IRa | F |
| <i>C. pinnatifida</i> | 32 | 92682 | <i>ycf2</i> | Exon | IRa | 32 | 154685 | <i>ycf2</i> | Exon | IRb | P |
| <i>C. pinnatifida</i> | 32 | 92703 | <i>ycf2</i> | Exon | IRa | 32 | 154706 | <i>ycf2</i> | Exon | IRb | P |
| <i>C. pinnatifida</i> | 34 | 95104 | <i>ycf2</i> | Exon | IRa | 34 | 95122 | <i>ycf2</i> | Exon | IRa | F |
| <i>C. pinnatifida</i> | 34 | 95104 | <i>ycf2</i> | Exon | IRa | 34 | 152264 | <i>ycf2</i> | Exon | IRb | P |

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|------------------------|----|--------|----------------------------|--------|-----|----|--------|----------------------------|--------|-----|---|
| <i>C. pinnatifida</i> | 34 | 95122 | <i>ycf2</i> | Exon | IRa | 34 | 152282 | <i>ycf2</i> | Exon | IRb | P |
| <i>C. pinnatifida</i> | 35 | 98114 | <i>trnL(CAA)-ndhB</i> | Spacer | IRa | 35 | 98135 | <i>trnL(CAA)-ndhB</i> | Spacer | IRa | F |
| <i>C. pinnatifida</i> | 35 | 98114 | <i>trnL(CAA)-ndhB</i> | Spacer | IRa | 35 | 149250 | <i>ndhB-trnL(CAA)</i> | Spacer | IRb | P |
| <i>C. pinnatifida</i> | 35 | 98135 | <i>trnL(CAA)-ndhB</i> | Spacer | IRa | 35 | 149271 | <i>ndhB-trnL(CAA)</i> | Spacer | IRb | P |
| <i>C. pinnatifida</i> | 31 | 99803 | <i>ndhB</i> | Intron | IRa | 31 | 99803 | <i>ndhB</i> | Intron | IRa | P |
| <i>C. pinnatifida</i> | 40 | 102446 | <i>rps12-trnV(GAC)</i> | Spacer | IRa | 40 | 125087 | <i>ndhA</i> | Intron | SSC | F |
| <i>C. pinnatifida</i> | 33 | 111396 | <i>rrn4.5-rrn5</i> | Spacer | IRa | 33 | 111427 | <i>rrn5</i> | Exon | IRa | F |
| <i>C. pinnatifida</i> | 33 | 111396 | <i>rrn4.5-rrn5</i> | Spacer | IRa | 33 | 135960 | <i>rrn5-rrn4.5</i> | Spacer | IRb | P |
| <i>C. pinnatifida</i> | 33 | 111427 | <i>rrn5</i> | Exon | IRa | 33 | 135991 | <i>rrn5-rrn4.5</i> | Spacer | IRb | P |
| <i>C. pinnatifida</i> | 30 | 113663 | <i>ycf1</i> | Exon | IRa | 30 | 113663 | <i>ycf1</i> | Exon | IRa | P |
| <i>C. pinnatifida</i> | 30 | 113663 | <i>ycf1</i> | Exon | IRa | 30 | 133727 | <i>ycf1</i> | Exon | IRb | F |
| <i>C. pinnatifida</i> | 40 | 125087 | <i>ndhA</i> | Intron | SSC | 40 | 144934 | <i>trnV(GAC)-rps12</i> | Spacer | IRb | P |
| <i>C. pinnatifida</i> | 30 | 133727 | <i>ycf1</i> | Exon | IRb | 30 | 133727 | <i>ycf1</i> | Exon | IRb | P |
| <i>C. pinnatifida</i> | 33 | 135960 | <i>rrn5-rrn4.5</i> | Spacer | IRb | 33 | 135991 | <i>rrn5-rrn4.5</i> | Spacer | IRb | F |
| <i>C. pinnatifida</i> | 35 | 149250 | <i>ndhB-trnL(CAA)</i> | Spacer | IRb | 35 | 149271 | <i>ndhB-trnL(CAA)</i> | Spacer | IRb | F |
| <i>C. pinnatifida</i> | 34 | 152264 | <i>ycf2</i> | Exon | IRb | 34 | 152282 | <i>ycf2</i> | Exon | IRb | F |
| <i>C. pinnatifida</i> | 32 | 154685 | <i>ycf2</i> | Exon | IRb | 32 | 154706 | <i>ycf2</i> | Exon | IRb | F |
| <i>C. maximowiczii</i> | 31 | 233 | <i>trnH(GUG)-psbA</i> | Spacer | LSC | 31 | 242 | <i>trnH(GUG)-psbA</i> | Spacer | LSC | F |
| <i>C. maximowiczii</i> | 30 | 8369 | <i>psbI-trnS(GCU)</i> | Spacer | LSC | 30 | 47871 | <i>trnS(GGA)-rps4</i> | Spacer | LSC | P |
| <i>C. maximowiczii</i> | 48 | 10233 | <i>trnR(UCU)-atpA</i> | Spacer | LSC | 48 | 10233 | <i>trnR(UCU)-atpA</i> | Spacer | LSC | P |
| <i>C. maximowiczii</i> | 35 | 10641 | <i>trnR(UCU)-atpA</i> | Spacer | LSC | 35 | 10668 | <i>trnR(UCU)-atpA</i> | Spacer | LSC | F |
| <i>C. maximowiczii</i> | 33 | 13751 | <i>atpF-atpH</i> | Spacer | LSC | 33 | 13751 | <i>atpF-atpH</i> | Spacer | LSC | P |
| <i>C. maximowiczii</i> | 33 | 30926 | <i>psbM-trnD(GUC)</i> | Spacer | LSC | 33 | 71305 | <i>rps18</i> | Exon | LSC | R |
| <i>C. maximowiczii</i> | 30 | 31901 | <i>psbM-trnD(GUC)</i> | Spacer | LSC | 30 | 31901 | <i>psbM-trnD(GUC)</i> | Spacer | LSC | R |
| <i>C. maximowiczii</i> | 32 | 32163 | <i>psbM-trnD(GUC)</i> | Spacer | LSC | 32 | 32163 | <i>psbM-trnD(GUC)</i> | Spacer | LSC | P |
| <i>C. maximowiczii</i> | 30 | 33495 | <i>trnE(UUC)-trnT(GGU)</i> | Spacer | LSC | 30 | 33509 | <i>trnE(UUC)-trnT(GGU)</i> | Spacer | LSC | F |

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|------------------------|----|-------|----------------------------|--------|-----|----|--------|----------------------------|--------|-----|---|
| <i>C. maximowiczii</i> | 30 | 39039 | <i>psbZ-trnG(UCC)</i> | Spacer | LSC | 30 | 39040 | <i>psbZ-trnG(UCC)</i> | Spacer | LSC | F |
| <i>C. maximowiczii</i> | 39 | 46403 | <i>ycf3</i> | Intron | LSC | 39 | 102578 | <i>rps12</i> | Exon | IRa | F |
| <i>C. maximowiczii</i> | 39 | 46403 | <i>ycf3</i> | Intron | LSC | 39 | 145132 | <i>rps12</i> | Exon | IRb | P |
| <i>C. maximowiczii</i> | 38 | 46403 | <i>ycf3</i> | Intron | LSC | 38 | 125332 | <i>ndhA</i> | Intron | SSC | F |
| <i>C. maximowiczii</i> | 30 | 46415 | <i>ycf3</i> | Intron | LSC | 30 | 102590 | <i>rps12</i> | Exon | IRa | F |
| <i>C. maximowiczii</i> | 30 | 46415 | <i>ycf3</i> | Intron | LSC | 30 | 145129 | <i>rps12</i> | Exon | IRb | P |
| <i>C. maximowiczii</i> | 35 | 49322 | <i>trnT(UGU)-trnL(UAA)</i> | Spacer | LSC | 35 | 49356 | <i>trnT(UGU)-trnL(UAA)</i> | Spacer | LSC | F |
| <i>C. maximowiczii</i> | 30 | 49773 | <i>trnT(UGU)-trnL(UAA)</i> | Spacer | LSC | 30 | 49797 | <i>trnT(UGU)-trnL(UAA)</i> | Spacer | LSC | F |
| <i>C. maximowiczii</i> | 30 | 49874 | <i>trnT(UGU)-trnL(UAA)</i> | Spacer | LSC | 30 | 49903 | <i>trnT(UGU)-trnL(UAA)</i> | Spacer | LSC | F |
| <i>C. maximowiczii</i> | 41 | 49875 | <i>trnT(UGU)-trnL(UAA)</i> | Spacer | LSC | 41 | 49892 | <i>trnT(UGU)-trnL(UAA)</i> | Spacer | LSC | P |
| <i>C. maximowiczii</i> | 36 | 54444 | <i>trnV(UAC)</i> | Intron | LSC | 36 | 54462 | <i>trnV(UAC)</i> | Intron | LSC | F |
| <i>C. maximowiczii</i> | 33 | 54552 | <i>trnV(UAC)</i> | Intron | LSC | 33 | 83118 | <i>rpl36-infA</i> | Spacer | LSC | F |
| <i>C. maximowiczii</i> | 63 | 55733 | <i>atpE</i> | Exon | LSC | 63 | 55733 | <i>atpE</i> | Exon | LSC | P |
| <i>C. maximowiczii</i> | 38 | 70242 | <i>psaJ</i> | Exon | LSC | 38 | 70275 | <i>psaJ</i> | Exon | LSC | F |
| <i>C. maximowiczii</i> | 32 | 70656 | <i>psaJ-rpl33</i> | Spacer | LSC | 32 | 70656 | <i>psaJ-rpl33</i> | Spacer | LSC | R |
| <i>C. maximowiczii</i> | 44 | 77820 | <i>psbN-psbH</i> | Spacer | LSC | 44 | 77820 | <i>psbN-psbH</i> | Spacer | LSC | P |
| <i>C. maximowiczii</i> | 52 | 81456 | <i>rpoA</i> | Exon | LSC | 52 | 81507 | <i>rpoA</i> | Exon | LSC | F |
| <i>C. maximowiczii</i> | 32 | 83110 | <i>rpl36-infA</i> | Spacer | LSC | 32 | 83110 | <i>rpl36-infA</i> | Spacer | LSC | R |
| <i>C. maximowiczii</i> | 32 | 92812 | <i>ycf2</i> | Exon | IRa | 32 | 92833 | <i>ycf2</i> | Exon | IRa | F |
| <i>C. maximowiczii</i> | 32 | 92812 | <i>ycf2</i> | Exon | IRa | 32 | 154884 | <i>ycf2</i> | Exon | IRb | P |
| <i>C. maximowiczii</i> | 32 | 92833 | <i>ycf2</i> | Exon | IRa | 32 | 154905 | <i>ycf2</i> | Exon | IRb | P |
| <i>C. maximowiczii</i> | 34 | 95234 | <i>ycf2</i> | Exon | IRa | 34 | 95252 | <i>ycf2</i> | Exon | IRa | F |
| <i>C. maximowiczii</i> | 34 | 95234 | <i>ycf2</i> | Exon | IRa | 34 | 152463 | <i>ycf2</i> | Exon | IRb | P |
| <i>C. maximowiczii</i> | 34 | 95252 | <i>ycf2</i> | Exon | IRa | 34 | 152481 | <i>ycf2</i> | Exon | IRb | P |
| <i>C. maximowiczii</i> | 35 | 98244 | <i>trnL(CAA)-ndhB</i> | Spacer | IRa | 35 | 98265 | <i>trnL(CAA)-ndhB</i> | Spacer | IRa | F |
| <i>C. maximowiczii</i> | 35 | 98244 | <i>trnL(CAA)-ndhB</i> | Spacer | IRa | 35 | 149449 | <i>trnL(CAA)</i> | Exon | IRb | P |

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|------------------------|----|--------|-----------------------|--------|-----|----|--------|-----------------------|--------|-----|---|
| <i>C. maximowiczii</i> | 35 | 98265 | <i>trnL(CAA)-ndhB</i> | Spacer | IRa | 35 | 149470 | <i>trnL(CAA)</i> | Exon | IRb | P |
| <i>C. maximowiczii</i> | 40 | 102576 | <i>rps12</i> | Exon | IRa | 40 | 125330 | <i>ndhA</i> | Intron | SSC | F |
| <i>C. maximowiczii</i> | 33 | 111526 | <i>rrn5</i> | Exon | IRa | 33 | 111557 | <i>rrn5-trnR(ACG)</i> | Spacer | IRa | F |
| <i>C. maximowiczii</i> | 33 | 111526 | <i>rrn5</i> | Exon | IRa | 33 | 136159 | <i>rrn4.5-rrn23</i> | Spacer | IRb | P |
| <i>C. maximowiczii</i> | 33 | 111557 | <i>rrn5-trnR(ACG)</i> | Spacer | IRa | 33 | 136190 | <i>rrn4.5-rrn23</i> | Spacer | IRb | P |
| <i>C. maximowiczii</i> | 30 | 113793 | <i>ycf1</i> | Exon | IRa | 30 | 113793 | <i>ycf1</i> | Exon | IRa | P |
| <i>C. maximowiczii</i> | 30 | 113793 | <i>ycf1</i> | Exon | IRa | 30 | 133926 | <i>ycf1</i> | Exon | IRb | F |
| <i>C. maximowiczii</i> | 30 | 116918 | <i>ndhF-rpl32</i> | Spacer | SSC | 30 | 116943 | <i>ndhF-rpl32</i> | Spacer | SSC | F |
| <i>C. maximowiczii</i> | 40 | 125330 | <i>ndhA</i> | Intron | SSC | 40 | 145133 | <i>rps12</i> | Exon | IRb | P |
| <i>C. maximowiczii</i> | 30 | 133926 | <i>ycf1</i> | Exon | IRb | 30 | 133926 | <i>ycf1</i> | Exon | IRb | P |
| <i>C. maximowiczii</i> | 33 | 136159 | <i>rrn4.5-rrn23</i> | Spacer | IRb | 33 | 136190 | <i>rrn4.5-rrn23</i> | Spacer | IRb | F |
| <i>C. maximowiczii</i> | 35 | 149449 | <i>trnL(CAA)</i> | Exon | IRb | 35 | 149470 | <i>trnL(CAA)</i> | Exon | IRb | F |
| <i>C. maximowiczii</i> | 34 | 152463 | <i>ycf2</i> | Exon | IRb | 34 | 152481 | <i>ycf2</i> | Exon | IRb | F |
| <i>C. maximowiczii</i> | 32 | 154884 | <i>ycf2</i> | Exon | IRb | 32 | 154905 | <i>ycf2</i> | Exon | IRb | F |

Table S2. The simple sequence repeats (SSRs) of four *Crataegus* species.

| Name | StartPos | EndPos | Location | Partition1 | Partition2 | Repetitions | Motif | Base |
|-------------------------|----------|--------|------------------------|------------|------------|-------------|-------|------|
| <i>C. bretschnideri</i> | 16 | 25 | <i>rps19-trnH(GUG)</i> | spacer | LSC | 5 | AT | 2 |
| <i>C. bretschnideri</i> | 32 | 41 | <i>rps19-trnH(GUG)</i> | spacer | LSC | 5 | AT | 2 |
| <i>C. bretschnideri</i> | 230 | 244 | <i>psba</i> | exon | LSC | 15 | T | 1 |
| <i>C. bretschnideri</i> | 248 | 260 | <i>psba</i> | exon | LSC | 13 | A | 1 |
| <i>C. bretschnideri</i> | 2834 | 2844 | <i>matK</i> | exon | LSC | 11 | T | 1 |
| <i>C. bretschnideri</i> | 2989 | 2999 | <i>matK</i> | exon | LSC | 11 | A | 1 |
| <i>C. bretschnideri</i> | 4367 | 4376 | <i>trnK(UUU)-rps16</i> | spacer | LSC | 10 | A | 1 |
| <i>C. bretschnideri</i> | 4860 | 4871 | <i>trnK(UUU)-rps16</i> | spacer | LSC | 12 | A | 1 |
| <i>C. bretschnideri</i> | 5579 | 5588 | <i>rps16</i> | intron | LSC | 10 | C | 1 |
| <i>C. bretschnideri</i> | 5735 | 5746 | <i>rps16</i> | intron | LSC | 12 | C | 1 |
| <i>C. bretschnideri</i> | 5748 | 5757 | <i>rps16</i> | intron | LSC | 10 | A | 1 |
| <i>C. bretschnideri</i> | 6634 | 6645 | <i>rps16-trnQ(UUG)</i> | spacer | LSC | 12 | T | 1 |
| <i>C. bretschnideri</i> | 7084 | 7095 | <i>rps16-trnQ(UUG)</i> | spacer | LSC | 4 | TAA | 3 |
| <i>C. bretschnideri</i> | 7095 | 7109 | <i>rps16-trnQ(UUG)</i> | spacer | LSC | 13 | A | 1 |
| <i>C. bretschnideri</i> | 7987 | 7999 | <i>psbk-psbI</i> | spacer | LSC | 13 | A | 1 |
| <i>C. bretschnideri</i> | 9428 | 9438 | <i>trnG(GCC)</i> | intron | LSC | 11 | T | 1 |
| <i>C. bretschnideri</i> | 9792 | 9801 | <i>trnG(GCC)</i> | intron | LSC | 10 | T | 1 |
| <i>C. bretschnideri</i> | 13496 | 13509 | <i>atpF</i> | intron | LSC | 14 | T | 1 |
| <i>C. bretschnideri</i> | 14472 | 14482 | <i>atpH-atpI</i> | spacer | LSC | 10 | A | 1 |
| <i>C. bretschnideri</i> | 15012 | 15023 | <i>atpH-atpI</i> | spacer | LSC | 12 | C | 1 |
| <i>C. bretschnideri</i> | 15227 | 15236 | <i>atpH-atpI</i> | spacer | LSC | 10 | A | 1 |
| <i>C. bretschnideri</i> | 15505 | 15523 | <i>atpH-atpI</i> | spacer | LSC | 19 | T | 1 |
| <i>C. bretschnideri</i> | 17354 | 17363 | <i>rps2-rpoC2</i> | spacer | LSC | 10 | T | 1 |
| <i>C. bretschnideri</i> | 17367 | 17376 | <i>rps2-rpoC2</i> | spacer | LSC | 10 | A | 1 |

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|--------------------------|-------|-------|----------------------------|--------|-----|----|-------|---|
| <i>C. bretschneideri</i> | 19605 | 19615 | <i>rpoC2</i> | exon | LSC | 11 | T | 1 |
| <i>C. bretschneideri</i> | 20986 | 20995 | <i>rpoC2</i> | exon | LSC | 5 | TA | 2 |
| <i>C. bretschneideri</i> | 24060 | 24069 | <i>rpoC1</i> | intron | LSC | 10 | T | 1 |
| <i>C. bretschneideri</i> | 27308 | 27317 | <i>rpoB</i> | exon | LSC | 10 | T | 1 |
| <i>C. bretschneideri</i> | 27953 | 27962 | <i>rpoB</i> | exon | LSC | 10 | T | 1 |
| <i>C. bretschneideri</i> | 28269 | 28283 | <i>rpoB-trnC(GCA)</i> | spacer | LSC | 3 | TCCAA | 5 |
| <i>C. bretschneideri</i> | 28389 | 28399 | <i>rpoB-trnC(GCA)</i> | spacer | LSC | 11 | A | 1 |
| <i>C. bretschneideri</i> | 31204 | 31217 | <i>petN-psbM</i> | spacer | LSC | 7 | TA | 2 |
| <i>C. bretschneideri</i> | 31836 | 31847 | <i>psbM-trnD(GUC)</i> | spacer | LSC | 3 | TTTA | 4 |
| <i>C. bretschneideri</i> | 32113 | 32124 | <i>psbM-trnD(GUC)</i> | spacer | LSC | 12 | T | 1 |
| <i>C. bretschneideri</i> | 32193 | | <i>psbM-trnD(GUC)</i> | spacer | LSC | 13 | A | 1 |
| <i>C. bretschneideri</i> | 33119 | 33132 | <i>trnD(GUC)-trnY(GUA)</i> | spacer | LSC | 14 | T | 1 |
| <i>C. bretschneideri</i> | 38634 | 38643 | <i>trnS(UGA)-psbZ</i> | spacer | LSC | 5 | TA | 2 |
| <i>C. bretschneideri</i> | 38685 | 38699 | <i>trnS(UGA)-psbZ</i> | spacer | LSC | 15 | A | 1 |
| <i>C. bretschneideri</i> | 38731 | 38741 | <i>trnS(UGA)-psbZ</i> | spacer | LSC | 11 | T | 1 |
| <i>C. bretschneideri</i> | 39305 | 39316 | <i>psbZ-trnG(UCC)</i> | spacer | LSC | 4 | ATA | 3 |
| <i>C. bretschneideri</i> | 45338 | 45350 | <i>psaA-ycf3</i> | spacer | LSC | 13 | A | 1 |
| <i>C. bretschneideri</i> | 45862 | 45872 | <i>ycf3</i> | intron | LSC | 11 | T | 1 |
| <i>C. bretschneideri</i> | 47693 | 47709 | <i>ycf3-trnS(GGA)</i> | spacer | LSC | 17 | A | 1 |
| <i>C. bretschneideri</i> | 50020 | 50029 | <i>trnT(UGU)-trnL(UAA)</i> | spacer | LSC | 5 | AT | 2 |
| <i>C. bretschneideri</i> | 50587 | 50600 | <i>trnT(UGU)-trnL(UAA)</i> | spacer | LSC | 14 | A | 1 |
| <i>C. bretschneideri</i> | 52591 | 52601 | <i>trnF(GAA)-ndhJ</i> | spacer | LSC | 11 | T | 1 |
| <i>C. bretschneideri</i> | 52634 | 52646 | <i>trnF(GAA)-ndhJ</i> | spacer | LSC | 13 | A | 1 |
| <i>C. bretschneideri</i> | 54057 | 54072 | <i>ndhK-ndhC</i> | spacer | LSC | 16 | T | 1 |
| <i>C. bretschneideri</i> | 54925 | 54934 | <i>ndhC-trnV(UAC)</i> | spacer | LSC | 5 | TA | 2 |
| <i>C. bretschneideri</i> | 55063 | 55072 | <i>ndhC-trnV(UAC)</i> | spacer | LSC | 5 | TA | 2 |

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|--------------------------|--------|--------|----------------------------|--------|-----|----|------|---|
| <i>C. bretschneideri</i> | 55074 | 55085 | <i>ndhC-trnV(UAC)</i> | spacer | LSC | 6 | AT | 2 |
| <i>C. bretschneideri</i> | 58129 | 58138 | <i>atpB</i> | exon | LSC | 10 | T | 1 |
| <i>C. bretschneideri</i> | 60838 | 60850 | <i>rbcL-accD</i> | spacer | LSC | 13 | T | 1 |
| <i>C. bretschneideri</i> | 62960 | 62973 | <i>accD-psaI</i> | spacer | LSC | 7 | TA | 2 |
| <i>C. bretschneideri</i> | 63188 | 63197 | <i>accD-psaI</i> | spacer | LSC | 5 | TA | 2 |
| <i>C. bretschneideri</i> | 63477 | 63490 | <i>psaI-ycf4</i> | spacer | LSC | 7 | TA | 2 |
| <i>C. bretschneideri</i> | 65032 | 65041 | <i>cemA</i> | exon | LSC | 5 | TC | 2 |
| <i>C. bretschneideri</i> | 67296 | 67305 | <i>petA-psbJ</i> | spacer | LSC | 5 | TA | 2 |
| <i>C. bretschneideri</i> | 67751 | 67760 | <i>petA-psbJ</i> | spacer | LSC | 10 | A | 1 |
| <i>C. bretschneideri</i> | 69131 | 69144 | <i>psbE-petL</i> | spacer | LSC | 14 | T | 1 |
| <i>C. bretschneideri</i> | 69460 | 69469 | <i>psbE-petL</i> | spacer | LSC | 10 | A | 1 |
| <i>C. bretschneideri</i> | 70559 | 70568 | <i>trnW(CCA)-trnP(UGG)</i> | spacer | LSC | 5 | AT | 2 |
| <i>C. bretschneideri</i> | 71446 | 71459 | <i>psaJ-rpl33</i> | spacer | LSC | 14 | A | 1 |
| <i>C. bretschneideri</i> | 72078 | 72087 | <i>rpl33-rps18</i> | spacer | LSC | 5 | AT | 2 |
| <i>C. bretschneideri</i> | 74794 | 74805 | <i>clpP</i> | intron | LSC | 12 | T | 1 |
| <i>C. bretschneideri</i> | 75476 | 75487 | <i>clpP</i> | intron | LSC | 12 | A | 1 |
| <i>C. bretschneideri</i> | 75522 | 75539 | <i>clpP</i> | intron | LSC | 18 | T | 1 |
| <i>C. bretschneideri</i> | 76482 | 76491 | <i>clpP-psbB</i> | spacer | LSC | 5 | AT | 2 |
| <i>C. bretschneideri</i> | 83901 | 83914 | <i>rps11-rpl36</i> | spacer | LSC | 14 | T | 1 |
| <i>C. bretschneideri</i> | 83917 | 83928 | <i>rps11-rpl36</i> | spacer | LSC | 3 | TTAT | 4 |
| <i>C. bretschneideri</i> | 85544 | 85557 | <i>rpl14-rpl16</i> | spacer | LSC | 14 | T | 1 |
| <i>C. bretschneideri</i> | 86903 | 86920 | <i>rpl16</i> | intron | LSC | 18 | T | 1 |
| <i>C. bretschneideri</i> | 87164 | 87174 | <i>rpl16-rps3</i> | spacer | LSC | 11 | T | 1 |
| <i>C. bretschneideri</i> | 87970 | 87979 | <i>rps3-rpl22</i> | spacer | LSC | 10 | T | 1 |
| <i>C. bretschneideri</i> | 104735 | 104744 | <i>rps12-trnV(GAC)</i> | spacer | Ira | 10 | T | 1 |
| <i>C. bretschneideri</i> | 112719 | 112728 | <i>rrn5-trnR(ACG)</i> | spacer | Ira | 10 | A | 1 |

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|--------------------------|--------|--------|----------------------------|--------|-----|----|------|---|
| <i>C. bretschneideri</i> | 113128 | 113139 | <i>trnR(ACG)-trnN(GUU)</i> | spacer | Ira | 3 | TTTA | 4 |
| <i>C. bretschneideri</i> | 113930 | 113939 | <i>trnN(GUU)-ycfI</i> | spacer | Ira | 5 | TA | 2 |
| <i>C. bretschneideri</i> | 117336 | 117357 | <i>ndhF-rpl32</i> | spacer | SSC | 22 | A | 1 |
| <i>C. bretschneideri</i> | 117563 | 117574 | <i>ndhF-rpl32</i> | spacer | SSC | 12 | A | 1 |
| <i>C. bretschneideri</i> | 118241 | 118250 | <i>ndhF-rpl32</i> | spacer | SSC | 10 | T | 1 |
| <i>C. bretschneideri</i> | 118336 | 118345 | <i>ndhF-rpl32</i> | spacer | SSC | 10 | C | 1 |
| <i>C. bretschneideri</i> | 118828 | 118837 | <i>rpl32-trnL(UAG)</i> | spacer | SSC | 10 | A | 1 |
| <i>C. bretschneideri</i> | 119391 | 119400 | <i>rpl32-trnL(UAG)</i> | spacer | SSC | 5 | TA | 2 |
| <i>C. bretschneideri</i> | 121382 | 121393 | <i>ccsA-ndhD</i> | spacer | SSC | 3 | ATTT | 4 |
| <i>C. bretschneideri</i> | 124098 | 124109 | <i>ndhE-ndhG</i> | spacer | SSC | 3 | TTAA | 4 |
| <i>C. bretschneideri</i> | 125631 | 125640 | <i>ndhI-ndhA</i> | spacer | SSC | 5 | AT | 2 |
| <i>C. bretschneideri</i> | 126739 | 126753 | <i>ndhA</i> | intron | SSC | 15 | T | 1 |
| <i>C. bretschneideri</i> | 132681 | 132690 | <i>ycfI</i> | exon | SSC | 10 | T | 1 |
| <i>C. bretschneideri</i> | 133318 | 133327 | <i>ycfI</i> | exon | SSC | 10 | A | 1 |
| <i>C. bretschneideri</i> | 135660 | 135669 | <i>ycfI-trnN(GUU)</i> | spacer | Irb | 5 | AT | 2 |
| <i>C. bretschneideri</i> | 136459 | 136470 | <i>trnN(GUU)-trnR(ACG)</i> | spacer | Irb | 3 | AATA | 4 |
| <i>C. bretschneideri</i> | 136872 | 136881 | <i>trnR(ACG)-rrn5</i> | spacer | Irb | 10 | T | 1 |
| <i>C. bretschneideri</i> | 144856 | 144865 | <i>trnV(GAC)-rps12</i> | spacer | Irb | 10 | A | 1 |
| <i>C. maximowiczii</i> | 16 | 25 | <i>rps19-trnH(GUG)</i> | spacer | LSC | 5 | AT | 2 |
| <i>C. maximowiczii</i> | 230 | 245 | <i>psba</i> | exon | LSC | 16 | T | 1 |
| <i>C. maximowiczii</i> | 249 | 260 | <i>psba</i> | exon | LSC | 12 | A | 1 |
| <i>C. maximowiczii</i> | 2834 | 2844 | <i>matK</i> | exon | LSC | 11 | T | 1 |
| <i>C. maximowiczii</i> | 2989 | 2999 | <i>matK</i> | exon | LSC | 11 | A | 1 |
| <i>C. maximowiczii</i> | 4366 | 4376 | <i>trnK(UUU)-rps16</i> | spacer | LSC | 11 | A | 1 |
| <i>C. maximowiczii</i> | 4862 | 4871 | <i>trnK(UUU)-rps16</i> | spacer | LSC | 10 | A | 1 |
| <i>C. maximowiczii</i> | 5578 | 5588 | <i>rps16</i> | intron | LSC | 11 | C | 1 |

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|------------------------|-------|-------|------------------------|--------|-----|----|-------|---|
| <i>C. maximowiczii</i> | 5735 | 5744 | <i>rps16</i> | intron | LSC | 10 | C | 1 |
| <i>C. maximowiczii</i> | 5748 | | <i>rps16</i> | intron | LSC | 12 | A | 1 |
| <i>C. maximowiczii</i> | 6636 | 6645 | <i>rps16-trnQ(UUG)</i> | spacer | LSC | 10 | T | 1 |
| <i>C. maximowiczii</i> | 7084 | 7095 | <i>rps16-trnQ(UUG)</i> | spacer | LSC | 4 | TAA | 3 |
| <i>C. maximowiczii</i> | 7094 | 7109 | <i>rps16-trnQ(UUG)</i> | spacer | LSC | 14 | A | 1 |
| <i>C. maximowiczii</i> | 7987 | 7999 | <i>psbk-psbI</i> | spacer | LSC | 13 | A | 1 |
| <i>C. maximowiczii</i> | 9428 | 9438 | <i>trnG(GCC)</i> | intron | LSC | 11 | T | 1 |
| <i>C. maximowiczii</i> | 9792 | 9801 | <i>trnG(GCC)</i> | intron | LSC | 10 | T | 1 |
| <i>C. maximowiczii</i> | 12420 | 12429 | <i>atpA-atpF</i> | spacer | LSC | 10 | T | 1 |
| <i>C. maximowiczii</i> | 13494 | 13509 | <i>atpF</i> | intron | LSC | 16 | T | 1 |
| <i>C. maximowiczii</i> | 14472 | 14482 | <i>atpH-atpI</i> | spacer | LSC | 10 | A | 1 |
| <i>C. maximowiczii</i> | 15013 | 15023 | <i>atpH-atpI</i> | spacer | LSC | 11 | C | 1 |
| <i>C. maximowiczii</i> | 15227 | 15236 | <i>atpH-atpI</i> | spacer | LSC | 10 | A | 1 |
| <i>C. maximowiczii</i> | 15510 | 15523 | <i>atpH-atpI</i> | spacer | LSC | 14 | T | 1 |
| <i>C. maximowiczii</i> | 17354 | 17363 | <i>rps2-rpoC2</i> | spacer | LSC | 10 | T | 1 |
| <i>C. maximowiczii</i> | 17367 | 17376 | <i>rps2-rpoC2</i> | spacer | LSC | 10 | A | 1 |
| <i>C. maximowiczii</i> | 19605 | 19615 | <i>rpoC2</i> | exon | LSC | 11 | T | 1 |
| <i>C. maximowiczii</i> | 20986 | 20995 | <i>rpoC2</i> | exon | LSC | 5 | TA | 2 |
| <i>C. maximowiczii</i> | 24060 | 24069 | <i>rpoC1</i> | intron | LSC | 10 | T | 1 |
| <i>C. maximowiczii</i> | 27308 | 27317 | <i>rpoB</i> | exon | LSC | 10 | T | 1 |
| <i>C. maximowiczii</i> | 27953 | 27962 | <i>rpoB</i> | exon | LSC | 10 | T | 1 |
| <i>C. maximowiczii</i> | 28269 | 28283 | <i>rpoB-trnC(GCA)</i> | spacer | LSC | 3 | TCCAA | 5 |
| <i>C. maximowiczii</i> | 28388 | 28399 | <i>rpoB-trnC(GCA)</i> | spacer | LSC | 12 | A | 1 |
| <i>C. maximowiczii</i> | 31204 | 31213 | <i>petN-psbM</i> | spacer | LSC | 5 | TA | 2 |
| <i>C. maximowiczii</i> | 31836 | 31847 | <i>psbM-trnD(GUC)</i> | spacer | LSC | 3 | TTTA | 4 |
| <i>C. maximowiczii</i> | 32193 | | <i>psbM-trnD(GUC)</i> | spacer | LSC | 10 | A | 1 |

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|------------------------|-------|-------|----------------------------|--------|-----|----|------|---|
| <i>C. maximowiczii</i> | 38634 | 38643 | <i>trnS(UGA)-psbZ</i> | spacer | LSC | 5 | TA | 2 |
| <i>C. maximowiczii</i> | 38685 | 38699 | <i>trnS(UGA)-psbZ</i> | spacer | LSC | 15 | A | 1 |
| <i>C. maximowiczii</i> | 38731 | 38741 | <i>trnS(UGA)-psbZ</i> | spacer | LSC | 11 | T | 1 |
| <i>C. maximowiczii</i> | 39305 | 39316 | <i>psbZ-trnG(UCC)</i> | spacer | LSC | 4 | ATA | 3 |
| <i>C. maximowiczii</i> | 39357 | 39369 | <i>psbZ-trnG(UCC)</i> | spacer | LSC | 13 | A | 1 |
| <i>C. maximowiczii</i> | 39372 | 39387 | <i>psbZ-trnG(UCC)</i> | spacer | LSC | 16 | A | 1 |
| <i>C. maximowiczii</i> | 39394 | 39405 | <i>psbZ-trnG(UCC)</i> | spacer | LSC | 3 | TTTA | 4 |
| <i>C. maximowiczii</i> | 45339 | 45350 | <i>psaA-ycf3</i> | spacer | LSC | 12 | A | 1 |
| <i>C. maximowiczii</i> | 47693 | 47709 | <i>ycf3-trnS(GGA)</i> | spacer | LSC | 17 | A | 1 |
| <i>C. maximowiczii</i> | 50020 | 50029 | <i>trnT(UGU)-trnL(UAA)</i> | spacer | LSC | 5 | AT | 2 |
| <i>C. maximowiczii</i> | 50585 | 50600 | <i>trnT(UGU)-trnL(UAA)</i> | spacer | LSC | 16 | A | 1 |
| <i>C. maximowiczii</i> | 52157 | 52166 | <i>trnF(GAA)-ndhJ</i> | spacer | LSC | 5 | TA | 2 |
| <i>C. maximowiczii</i> | 52590 | 52601 | <i>trnF(GAA)-ndhJ</i> | spacer | LSC | 12 | T | 1 |
| <i>C. maximowiczii</i> | 52634 | 52643 | <i>trnF(GAA)-ndhJ</i> | spacer | LSC | 10 | A | 1 |
| <i>C. maximowiczii</i> | 54060 | 54072 | <i>ndhK-ndhC</i> | spacer | LSC | 13 | T | 1 |
| <i>C. maximowiczii</i> | 55025 | 55034 | <i>ndhC-trnV(UAC)</i> | spacer | LSC | 10 | T | 1 |
| <i>C. maximowiczii</i> | 55063 | 55072 | <i>ndhC-trnV(UAC)</i> | spacer | LSC | 5 | TA | 2 |
| <i>C. maximowiczii</i> | 55074 | 55085 | <i>ndhC-trnV(UAC)</i> | spacer | LSC | 6 | AT | 2 |
| <i>C. maximowiczii</i> | 58129 | 58138 | <i>atpB</i> | exon | LSC | 10 | T | 1 |
| <i>C. maximowiczii</i> | 60836 | 60850 | <i>rbcL-accD</i> | spacer | LSC | 15 | T | 1 |
| <i>C. maximowiczii</i> | 62964 | 62973 | <i>accD-psaI</i> | spacer | LSC | 5 | TA | 2 |
| <i>C. maximowiczii</i> | 63188 | 63197 | <i>accD-psaI</i> | spacer | LSC | 5 | TA | 2 |
| <i>C. maximowiczii</i> | 63477 | 63490 | <i>psaI-ycf4</i> | spacer | LSC | 7 | TA | 2 |
| <i>C. maximowiczii</i> | 64706 | 64715 | <i>ycf4-cemA</i> | spacer | LSC | 10 | T | 1 |
| <i>C. maximowiczii</i> | 65032 | 65041 | <i>cemA</i> | exon | LSC | 5 | TC | 2 |
| <i>C. maximowiczii</i> | 67277 | 67286 | <i>petA-psbJ</i> | spacer | LSC | 10 | T | 1 |

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|------------------------|--------|--------|----------------------------|--------|-----|----|------|---|
| <i>C. maximowiczii</i> | 67292 | 67305 | <i>petA-psbJ</i> | spacer | LSC | 7 | TA | 2 |
| <i>C. maximowiczii</i> | 67751 | 67760 | <i>petA-psbJ</i> | spacer | LSC | 10 | A | 1 |
| <i>C. maximowiczii</i> | 68705 | 68714 | <i>psbE-petL</i> | spacer | LSC | 10 | G | 1 |
| <i>C. maximowiczii</i> | 69131 | 69144 | <i>psbE-petL</i> | spacer | LSC | 14 | T | 1 |
| <i>C. maximowiczii</i> | 69427 | 69437 | <i>psbE-petL</i> | spacer | LSC | 11 | A | 1 |
| <i>C. maximowiczii</i> | 69459 | 69469 | <i>psbE-petL</i> | spacer | LSC | 11 | A | 1 |
| <i>C. maximowiczii</i> | 70559 | 70568 | <i>trnW(CCA)-trnP(UGG)</i> | spacer | LSC | 5 | AT | 2 |
| <i>C. maximowiczii</i> | 71442 | 71459 | <i>psaJ-rpl33</i> | spacer | LSC | 18 | A | 1 |
| <i>C. maximowiczii</i> | 72078 | 72087 | <i>rpl33-rps18</i> | spacer | LSC | 5 | AT | 2 |
| <i>C. maximowiczii</i> | 74791 | 74805 | <i>clpP</i> | intron | LSC | 15 | T | 1 |
| <i>C. maximowiczii</i> | 75477 | 75487 | <i>clpP</i> | intron | LSC | 11 | A | 1 |
| <i>C. maximowiczii</i> | 75523 | 75539 | <i>clpP</i> | intron | LSC | 17 | T | 1 |
| <i>C. maximowiczii</i> | 76482 | 76491 | <i>clpP-psbB</i> | spacer | LSC | 5 | AT | 2 |
| <i>C. maximowiczii</i> | 83896 | 83914 | <i>rps11-rpl36</i> | spacer | LSC | 19 | T | 1 |
| <i>C. maximowiczii</i> | 83917 | 83928 | <i>rps11-rpl36</i> | spacer | LSC | 3 | TTAT | 4 |
| <i>C. maximowiczii</i> | 85547 | 85557 | <i>rpl14-rpl16</i> | spacer | LSC | 11 | T | 1 |
| <i>C. maximowiczii</i> | 86904 | 86916 | <i>rpl16</i> | intron | LSC | 13 | T | 1 |
| <i>C. maximowiczii</i> | 87163 | 87177 | <i>rpl16-rps3</i> | spacer | LSC | 15 | T | 1 |
| <i>C. maximowiczii</i> | 87970 | 87979 | <i>rps3-rpl22</i> | spacer | LSC | 10 | T | 1 |
| <i>C. maximowiczii</i> | 104735 | 104744 | <i>rps12-trnV(GAC)</i> | spacer | Ira | 10 | T | 1 |
| <i>C. maximowiczii</i> | 112719 | 112728 | <i>rrn5-trnR(ACG)</i> | spacer | Ira | 10 | A | 1 |
| <i>C. maximowiczii</i> | 113128 | 113139 | <i>trnR(ACG)-trnN(GUU)</i> | spacer | Ira | 3 | TTTA | 4 |
| <i>C. maximowiczii</i> | 113930 | 113939 | <i>trnN(GUU)-yefI</i> | spacer | Ira | 5 | TA | 2 |
| <i>C. maximowiczii</i> | 117338 | 117357 | <i>ndhF-rpl32</i> | spacer | SSC | 20 | A | 1 |
| <i>C. maximowiczii</i> | 117563 | 117574 | <i>ndhF-rpl32</i> | spacer | SSC | 12 | A | 1 |
| <i>C. maximowiczii</i> | 118827 | 118841 | <i>rpl32-trnL(UAG)</i> | spacer | SSC | 15 | A | 1 |

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|------------------------|--------|--------|----------------------------|--------|-----|----|------|---|
| <i>C. maximowiczii</i> | 121382 | 121393 | <i>ccsA-ndhD</i> | spacer | SSC | 3 | ATTT | 4 |
| <i>C. maximowiczii</i> | 124098 | 124109 | <i>ndhE-ndhG</i> | spacer | SSC | 3 | TTAA | 4 |
| <i>C. maximowiczii</i> | 125631 | 125640 | <i>ndhI-ndhA</i> | spacer | SSC | 5 | AT | 2 |
| <i>C. maximowiczii</i> | 126741 | 126753 | <i>ndhA</i> | intron | SSC | 13 | T | 1 |
| <i>C. maximowiczii</i> | 132681 | 132690 | <i>ycfI</i> | exon | SSC | 10 | T | 1 |
| <i>C. maximowiczii</i> | 133318 | 133327 | <i>ycfI</i> | exon | SSC | 10 | A | 1 |
| <i>C. maximowiczii</i> | 135660 | 135669 | <i>ycfI-trnN(GUU)</i> | spacer | Irb | 5 | AT | 2 |
| <i>C. maximowiczii</i> | 136459 | 136470 | <i>trnN(GUU)-trnR(ACG)</i> | spacer | Irb | 3 | AATA | 4 |
| <i>C. maximowiczii</i> | 136872 | 136881 | <i>trnR(ACG)-rrn5</i> | spacer | Irb | 10 | T | 1 |
| <i>C. maximowiczii</i> | 144856 | 144865 | <i>trnV(GAC)-rps12</i> | spacer | Irb | 10 | A | 1 |
| <i>C. pinnatifida</i> | 230 | 243 | <i>psba</i> | exon | LSC | 14 | T | 1 |
| <i>C. pinnatifida</i> | 249 | 260 | <i>psba</i> | exon | LSC | 12 | A | 1 |
| <i>C. pinnatifida</i> | 2834 | 2844 | <i>matK</i> | exon | LSC | 11 | T | 1 |
| <i>C. pinnatifida</i> | 4367 | 4376 | <i>trnK(UUU)-rps16</i> | spacer | LSC | 10 | A | 1 |
| <i>C. pinnatifida</i> | 4854 | 4871 | <i>trnK(UUU)-rps16</i> | spacer | LSC | 18 | A | 1 |
| <i>C. pinnatifida</i> | 5579 | 5588 | <i>rps16</i> | intron | LSC | 10 | C | 1 |
| <i>C. pinnatifida</i> | 5735 | 5747 | <i>rps16</i> | intron | LSC | 13 | C | 1 |
| <i>C. pinnatifida</i> | 6634 | 6644 | <i>rps16-trnQ(UUG)</i> | spacer | LSC | 11 | T | 1 |
| <i>C. pinnatifida</i> | 6932 | 6941 | <i>rps16-trnQ(UUG)</i> | spacer | LSC | 10 | A | 1 |
| <i>C. pinnatifida</i> | 7084 | 7095 | <i>rps16-trnQ(UUG)</i> | spacer | LSC | 4 | TAA | 3 |
| <i>C. pinnatifida</i> | 7988 | 7999 | <i>psbk-psbI</i> | spacer | LSC | 12 | A | 1 |
| <i>C. pinnatifida</i> | 9427 | 9438 | <i>trnG(GCC)</i> | intron | LSC | 12 | T | 1 |
| <i>C. pinnatifida</i> | 9792 | 9801 | <i>trnG(GCC)</i> | intron | LSC | 10 | T | 1 |
| <i>C. pinnatifida</i> | 13140 | 13152 | <i>atpF</i> | intron | LSC | 13 | T | 1 |
| <i>C. pinnatifida</i> | 13497 | 13509 | <i>atpF</i> | intron | LSC | 13 | T | 1 |
| <i>C. pinnatifida</i> | 13888 | 13897 | <i>atpF-atpH</i> | spacer | LSC | 10 | T | 1 |

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|-----------------------|-------|-------|----------------------------|--------|-----|----|-------|---|
| <i>C. pinnatifida</i> | 14472 | 14482 | <i>atpH-atpI</i> | spacer | LSC | 11 | A | 1 |
| <i>C. pinnatifida</i> | 15007 | 15020 | <i>atpH-atpI</i> | spacer | LSC | 14 | C | 1 |
| <i>C. pinnatifida</i> | 15021 | 15031 | <i>atpH-atpI</i> | spacer | LSC | 11 | T | 1 |
| <i>C. pinnatifida</i> | 15227 | 15236 | <i>atpH-atpI</i> | spacer | LSC | 10 | A | 1 |
| <i>C. pinnatifida</i> | 15512 | 15523 | <i>atpH-atpI</i> | spacer | LSC | 12 | T | 1 |
| <i>C. pinnatifida</i> | 17354 | 17363 | <i>rps2-rpoC2</i> | spacer | LSC | 10 | T | 1 |
| <i>C. pinnatifida</i> | 17367 | 17376 | <i>rps2-rpoC2</i> | spacer | LSC | 10 | A | 1 |
| <i>C. pinnatifida</i> | 19605 | 19615 | <i>rpoC2</i> | exon | LSC | 11 | T | 1 |
| <i>C. pinnatifida</i> | 20986 | 20995 | <i>rpoC2</i> | exon | LSC | 5 | TA | 2 |
| <i>C. pinnatifida</i> | 27308 | 27317 | <i>rpoB</i> | exon | LSC | 10 | T | 1 |
| <i>C. pinnatifida</i> | 28269 | 28283 | <i>rpoB-trnC(GCA)</i> | spacer | LSC | 3 | TCCAA | 5 |
| <i>C. pinnatifida</i> | 28384 | 28399 | <i>rpoB-trnC(GCA)</i> | spacer | LSC | 16 | A | 1 |
| <i>C. pinnatifida</i> | 31204 | 31213 | <i>petN-psbM</i> | spacer | LSC | 5 | TA | 2 |
| <i>C. pinnatifida</i> | 31836 | 31847 | <i>psbM-trnD(GUC)</i> | spacer | LSC | 3 | TTTA | 4 |
| <i>C. pinnatifida</i> | 32193 | 32206 | <i>psbM-trnD(GUC)</i> | spacer | LSC | 14 | A | 1 |
| <i>C. pinnatifida</i> | 38634 | 38643 | <i>trnS(UGA)-psbZ</i> | spacer | LSC | 5 | TA | 2 |
| <i>C. pinnatifida</i> | 38687 | 38699 | <i>trnS(UGA)-psbZ</i> | spacer | LSC | 13 | A | 1 |
| <i>C. pinnatifida</i> | 38732 | 38741 | <i>trnS(UGA)-psbZ</i> | spacer | LSC | 10 | T | 1 |
| <i>C. pinnatifida</i> | 39377 | 39387 | <i>psbZ-trnG(UCC)</i> | spacer | LSC | 11 | A | 1 |
| <i>C. pinnatifida</i> | 45341 | 45350 | <i>psaA-yef3</i> | spacer | LSC | 10 | A | 1 |
| <i>C. pinnatifida</i> | 45863 | 45872 | <i>yef3</i> | intron | LSC | 10 | T | 1 |
| <i>C. pinnatifida</i> | 47697 | 47709 | <i>yef3-trnS(GGA)</i> | spacer | LSC | 13 | A | 1 |
| <i>C. pinnatifida</i> | 50020 | 50029 | <i>trnT(UGU)-trnL(UAA)</i> | spacer | LSC | 5 | AT | 2 |
| <i>C. pinnatifida</i> | 50591 | 50600 | <i>trnT(UGU)-trnL(UAA)</i> | spacer | LSC | 10 | A | 1 |
| <i>C. pinnatifida</i> | 52591 | 52601 | <i>trnF(GAA)-ndhJ</i> | spacer | LSC | 11 | T | 1 |
| <i>C. pinnatifida</i> | 54062 | 54072 | <i>ndhK-ndhC</i> | spacer | LSC | 11 | T | 1 |

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|-----------------------|-------|-------|----------------------------|--------|-----|----|----|---|
| <i>C. pinnatifida</i> | 54898 | 54907 | <i>ndhC-trnV(UAC)</i> | spacer | LSC | 5 | TA | 2 |
| <i>C. pinnatifida</i> | 54925 | 54934 | <i>ndhC-trnV(UAC)</i> | spacer | LSC | 5 | TA | 2 |
| <i>C. pinnatifida</i> | 55063 | 55072 | <i>ndhC-trnV(UAC)</i> | spacer | LSC | 5 | TA | 2 |
| <i>C. pinnatifida</i> | 55076 | 55085 | <i>ndhC-trnV(UAC)</i> | spacer | LSC | 5 | AT | 2 |
| <i>C. pinnatifida</i> | 58129 | 58138 | <i>atpB</i> | exon | LSC | 10 | T | 1 |
| <i>C. pinnatifida</i> | 60839 | 60850 | <i>rbcL-accD</i> | spacer | LSC | 12 | T | 1 |
| <i>C. pinnatifida</i> | 62964 | 62973 | <i>accD-psaI</i> | spacer | LSC | 5 | TA | 2 |
| <i>C. pinnatifida</i> | 63188 | 63197 | <i>accD-psaI</i> | spacer | LSC | 5 | TA | 2 |
| <i>C. pinnatifida</i> | 63477 | 63486 | <i>psaI-ycf4</i> | spacer | LSC | 5 | TA | 2 |
| <i>C. pinnatifida</i> | 63816 | 63827 | <i>psaI-ycf4</i> | spacer | LSC | 12 | A | 1 |
| <i>C. pinnatifida</i> | 64706 | 64715 | <i>ycf4-cemA</i> | spacer | LSC | 10 | T | 1 |
| <i>C. pinnatifida</i> | 65032 | 65041 | <i>cemA</i> | exon | LSC | 5 | TC | 2 |
| <i>C. pinnatifida</i> | 67277 | 67296 | <i>petA-psbJ</i> | spacer | LSC | 20 | T | 1 |
| <i>C. pinnatifida</i> | 67751 | 67760 | <i>petA-psbJ</i> | spacer | LSC | 10 | A | 1 |
| <i>C. pinnatifida</i> | 68703 | 68714 | <i>psbE-petL</i> | spacer | LSC | 12 | G | 1 |
| <i>C. pinnatifida</i> | 69135 | 69144 | <i>psbE-petL</i> | spacer | LSC | 10 | T | 1 |
| <i>C. pinnatifida</i> | 69428 | 69437 | <i>psbE-petL</i> | spacer | LSC | 10 | A | 1 |
| <i>C. pinnatifida</i> | 69459 | 69469 | <i>psbE-petL</i> | spacer | LSC | 11 | A | 1 |
| <i>C. pinnatifida</i> | 70537 | 70546 | <i>trnW(CCA)-trnP(UGG)</i> | spacer | LSC | 5 | AT | 2 |
| <i>C. pinnatifida</i> | 70559 | 70568 | <i>trnW(CCA)-trnP(UGG)</i> | spacer | LSC | 5 | AT | 2 |
| <i>C. pinnatifida</i> | 71444 | 71459 | <i>psaJ-rpl33</i> | spacer | LSC | 16 | A | 1 |
| <i>C. pinnatifida</i> | 72078 | 72087 | <i>rpl33-rps18</i> | spacer | LSC | 5 | AT | 2 |
| <i>C. pinnatifida</i> | 72599 | 72610 | <i>rps18-rpl20</i> | spacer | LSC | 12 | T | 1 |
| <i>C. pinnatifida</i> | 73344 | 73357 | <i>rpl20-rps12</i> | spacer | LSC | 14 | T | 1 |
| <i>C. pinnatifida</i> | 74546 | 74555 | <i>clpP</i> | intron | LSC | 5 | AT | 2 |
| <i>C. pinnatifida</i> | 74716 | 74726 | <i>clpP</i> | intron | LSC | 11 | A | 1 |

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|-----------------------|--------|--------|----------------------------|--------|-----|----|------|---|
| <i>C. pinnatifida</i> | 74793 | 74805 | <i>clpP</i> | intron | LSC | 13 | T | 1 |
| <i>C. pinnatifida</i> | 75475 | 75487 | <i>clpP</i> | intron | LSC | 13 | A | 1 |
| <i>C. pinnatifida</i> | 75524 | 75539 | <i>clpP</i> | intron | LSC | 16 | T | 1 |
| <i>C. pinnatifida</i> | 76482 | 76491 | <i>clpP-psbB</i> | spacer | LSC | 5 | AT | 2 |
| <i>C. pinnatifida</i> | 80767 | 80778 | <i>petB-petD</i> | spacer | LSC | 12 | A | 1 |
| <i>C. pinnatifida</i> | 83897 | 83914 | <i>rps11-rpl36</i> | spacer | LSC | 18 | T | 1 |
| <i>C. pinnatifida</i> | 83917 | 83928 | <i>rps11-rpl36</i> | spacer | LSC | 3 | TTAT | 4 |
| <i>C. pinnatifida</i> | 85054 | 85066 | <i>infA-rps8</i> | spacer | LSC | 13 | T | 1 |
| <i>C. pinnatifida</i> | 85547 | 85557 | <i>rpl14-rpl16</i> | spacer | LSC | 11 | T | 1 |
| <i>C. pinnatifida</i> | 86906 | 86920 | <i>rpl16</i> | intron | LSC | 15 | T | 1 |
| <i>C. pinnatifida</i> | 87161 | 87174 | <i>rpl16-rps3</i> | spacer | LSC | 14 | T | 1 |
| <i>C. pinnatifida</i> | 87970 | 87979 | <i>rps3-rpl22</i> | spacer | LSC | 10 | T | 1 |
| <i>C. pinnatifida</i> | 104735 | 104744 | <i>rps12-trnV(GAC)</i> | spacer | Ira | 10 | T | 1 |
| <i>C. pinnatifida</i> | 112719 | 112728 | <i>rrn5-trnR(ACG)</i> | spacer | Ira | 10 | A | 1 |
| <i>C. pinnatifida</i> | 113128 | 113139 | <i>trnR(ACG)-trnN(GUU)</i> | spacer | Ira | 3 | TTTA | 4 |
| <i>C. pinnatifida</i> | 113930 | 113939 | <i>trnN(GUU)-ycfI</i> | spacer | Ira | 5 | TA | 2 |
| <i>C. pinnatifida</i> | 117337 | 117356 | <i>ndhF-rpl32</i> | spacer | SSC | 20 | A | 1 |
| <i>C. pinnatifida</i> | 117562 | 117574 | <i>ndhF-rpl32</i> | spacer | SSC | 13 | A | 1 |
| <i>C. pinnatifida</i> | 118335 | 118345 | <i>ndhF-rpl32</i> | spacer | SSC | 11 | C | 1 |
| <i>C. pinnatifida</i> | 119120 | 119130 | <i>rpl32-trnL(UAG)</i> | spacer | SSC | 11 | T | 1 |
| <i>C. pinnatifida</i> | 119390 | 119401 | <i>rpl32-trnL(UAG)</i> | spacer | SSC | 6 | AT | 2 |
| <i>C. pinnatifida</i> | 124775 | 124784 | <i>ndhG-ndhI</i> | spacer | SSC | 10 | T | 1 |
| <i>C. pinnatifida</i> | 125631 | 125640 | <i>ndhI-ndhA</i> | spacer | SSC | 5 | AT | 2 |
| <i>C. pinnatifida</i> | 126742 | 126753 | <i>ndhA</i> | intron | SSC | 12 | T | 1 |
| <i>C. pinnatifida</i> | 132681 | 132690 | <i>ycfI</i> | exon | SSC | 10 | T | 1 |
| <i>C. pinnatifida</i> | 133312 | 133327 | <i>ycfI</i> | exon | SSC | 16 | A | 1 |

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|---|--------|--------|----------------------------|--------|-----|----|------|---|
| <i>C. pinnatifida</i> | 135660 | 135669 | <i>ycf1-trnN(GUU)</i> | spacer | Irb | 5 | AT | 2 |
| <i>C. pinnatifida</i> | 136459 | 136470 | <i>trnN(GUU)-trnR(ACG)</i> | spacer | Irb | 3 | AATA | 4 |
| <i>C. pinnatifida</i> | 136872 | 136881 | <i>trnR(ACG)-rrn5</i> | spacer | Irb | 10 | T | 1 |
| <i>C. pinnatifida</i> | 144856 | 144865 | <i>trnV(GAC)-rps12</i> | spacer | Irb | 10 | A | 1 |
| <i>C. pinnatifida</i> var. <i>major</i> | 230 | 243 | <i>psba</i> | exon | LSC | 14 | T | 1 |
| <i>C. pinnatifida</i> var. <i>major</i> | 249 | 260 | <i>psba</i> | exon | LSC | 12 | A | 1 |
| <i>C. pinnatifida</i> var. <i>major</i> | 2834 | 2844 | <i>matK</i> | exon | LSC | 11 | T | 1 |
| <i>C. pinnatifida</i> var. <i>major</i> | 4367 | 4376 | <i>trnK(UUU)-rps16</i> | spacer | LSC | 10 | A | 1 |
| <i>C. pinnatifida</i> var. <i>major</i> | 4855 | 4871 | <i>trnK(UUU)-rps16</i> | spacer | LSC | 17 | A | 1 |
| <i>C. pinnatifida</i> var. <i>major</i> | 5579 | 5588 | <i>rps16</i> | intron | LSC | 10 | C | 1 |
| <i>C. pinnatifida</i> var. <i>major</i> | 5735 | 5747 | <i>rps16</i> | intron | LSC | 13 | C | 1 |
| <i>C. pinnatifida</i> var. <i>major</i> | 5748 | 5757 | <i>rps16</i> | intron | LSC | 10 | A | 1 |
| <i>C. pinnatifida</i> var. <i>major</i> | 6634 | 6644 | <i>rps16-trnQ(UUG)</i> | spacer | LSC | 11 | T | 1 |
| <i>C. pinnatifida</i> var. <i>major</i> | 6932 | 6941 | <i>rps16-trnQ(UUG)</i> | spacer | LSC | 10 | A | 1 |
| <i>C. pinnatifida</i> var. <i>major</i> | 7084 | 7095 | <i>rps16-trnQ(UUG)</i> | spacer | LSC | 4 | TAA | 3 |
| <i>C. pinnatifida</i> var. <i>major</i> | 7988 | 7999 | <i>psbk-psbI</i> | spacer | LSC | 12 | A | 1 |
| <i>C. pinnatifida</i> var. <i>major</i> | 9427 | 9438 | <i>trnG(GCC)</i> | intron | LSC | 12 | T | 1 |
| <i>C. pinnatifida</i> var. <i>major</i> | 9792 | 9801 | <i>trnG(GCC)</i> | intron | LSC | 10 | T | 1 |
| <i>C. pinnatifida</i> var. <i>major</i> | 13140 | 13152 | <i>atpF</i> | intron | LSC | 13 | T | 1 |
| <i>C. pinnatifida</i> var. <i>major</i> | 13497 | 13509 | <i>atpF</i> | intron | LSC | 13 | T | 1 |
| <i>C. pinnatifida</i> var. <i>major</i> | 13888 | 13897 | <i>atpF-atpH</i> | spacer | LSC | 10 | T | 1 |
| <i>C. pinnatifida</i> var. <i>major</i> | 14472 | 14482 | <i>atpH-atpI</i> | spacer | LSC | 11 | A | 1 |
| <i>C. pinnatifida</i> var. <i>major</i> | 15009 | 15020 | <i>atpH-atpI</i> | spacer | LSC | 12 | C | 1 |
| <i>C. pinnatifida</i> var. <i>major</i> | 15021 | 15031 | <i>atpH-atpI</i> | spacer | LSC | 11 | T | 1 |
| <i>C. pinnatifida</i> var. <i>major</i> | 15227 | 15236 | <i>atpH-atpI</i> | spacer | LSC | 10 | A | 1 |
| <i>C. pinnatifida</i> var. <i>major</i> | 15512 | 15523 | <i>atpH-atpI</i> | spacer | LSC | 12 | T | 1 |

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|---|-------|-------|----------------------------|--------|-----|----|-------|---|
| <i>C. pinnatifida</i> var. <i>major</i> | 17354 | 17363 | <i>rps2-rpoC2</i> | spacer | LSC | 10 | T | 1 |
| <i>C. pinnatifida</i> var. <i>major</i> | 17367 | 17376 | <i>rps2-rpoC2</i> | spacer | LSC | 10 | A | 1 |
| <i>C. pinnatifida</i> var. <i>major</i> | 19605 | 19615 | <i>rpoC2</i> | exon | LSC | 11 | T | 1 |
| <i>C. pinnatifida</i> var. <i>major</i> | 20986 | 20995 | <i>rpoC2</i> | exon | LSC | 5 | TA | 2 |
| <i>C. pinnatifida</i> var. <i>major</i> | 27308 | 27317 | <i>rpoB</i> | exon | LSC | 10 | T | 1 |
| <i>C. pinnatifida</i> var. <i>major</i> | 28269 | 28283 | <i>rpoB-trnC(GCA)</i> | spacer | LSC | 3 | TCCAA | 5 |
| <i>C. pinnatifida</i> var. <i>major</i> | 28384 | 28399 | <i>rpoB-trnC(GCA)</i> | spacer | LSC | 16 | A | 1 |
| <i>C. pinnatifida</i> var. <i>major</i> | 31204 | 31213 | <i>petN-psbM</i> | spacer | LSC | 5 | TA | 2 |
| <i>C. pinnatifida</i> var. <i>major</i> | 31836 | 31847 | <i>psbM-trnD(GUC)</i> | spacer | LSC | 3 | TTTA | 4 |
| <i>C. pinnatifida</i> var. <i>major</i> | 32193 | 32206 | <i>psbM-trnD(GUC)</i> | spacer | LSC | 14 | A | 1 |
| <i>C. pinnatifida</i> var. <i>major</i> | 38634 | 38643 | <i>trnS(UGA)-psbZ</i> | spacer | LSC | 5 | TA | 2 |
| <i>C. pinnatifida</i> var. <i>major</i> | 38687 | 38699 | <i>trnS(UGA)-psbZ</i> | spacer | LSC | 13 | A | 1 |
| <i>C. pinnatifida</i> var. <i>major</i> | 38732 | 38741 | <i>trnS(UGA)-psbZ</i> | spacer | LSC | 10 | T | 1 |
| <i>C. pinnatifida</i> var. <i>major</i> | 39377 | 39387 | <i>psbZ-trnG(UCC)</i> | spacer | LSC | 11 | A | 1 |
| <i>C. pinnatifida</i> var. <i>major</i> | 45341 | 45350 | <i>psaA-ycf3</i> | spacer | LSC | 10 | A | 1 |
| <i>C. pinnatifida</i> var. <i>major</i> | 45863 | 45872 | <i>ycf3</i> | intron | LSC | 10 | T | 1 |
| <i>C. pinnatifida</i> var. <i>major</i> | 47697 | 47709 | <i>ycf3-trnS(GGA)</i> | spacer | LSC | 13 | A | 1 |
| <i>C. pinnatifida</i> var. <i>major</i> | 50020 | 50029 | <i>trnT(UGU)-trnL(UAA)</i> | spacer | LSC | 5 | AT | 2 |
| <i>C. pinnatifida</i> var. <i>major</i> | 50591 | 50600 | <i>trnT(UGU)-trnL(UAA)</i> | spacer | LSC | 10 | A | 1 |
| <i>C. pinnatifida</i> var. <i>major</i> | 52591 | 52601 | <i>trnF(GAA)-ndhJ</i> | spacer | LSC | 11 | T | 1 |
| <i>C. pinnatifida</i> var. <i>major</i> | 54062 | 54072 | <i>ndhK-ndhC</i> | spacer | LSC | 11 | T | 1 |
| <i>C. pinnatifida</i> var. <i>major</i> | 54925 | 54934 | <i>ndhC-trnV(UAC)</i> | spacer | LSC | 5 | TA | 2 |
| <i>C. pinnatifida</i> var. <i>major</i> | 55063 | 55072 | <i>ndhC-trnV(UAC)</i> | spacer | LSC | 5 | TA | 2 |
| <i>C. pinnatifida</i> var. <i>major</i> | 55076 | 55085 | <i>ndhC-trnV(UAC)</i> | spacer | LSC | 5 | AT | 2 |
| <i>C. pinnatifida</i> var. <i>major</i> | 58129 | 58138 | <i>atpB</i> | exon | LSC | 10 | T | 1 |
| <i>C. pinnatifida</i> var. <i>major</i> | 60839 | 60850 | <i>rbcL-accD</i> | spacer | LSC | 12 | T | 1 |

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|---|-------|-------|----------------------------|--------|-----|----|----|---|
| <i>C. pinnatifida</i> var. <i>major</i> | 62964 | 62973 | <i>accD-psaI</i> | spacer | LSC | 5 | TA | 2 |
| <i>C. pinnatifida</i> var. <i>major</i> | 63188 | 63197 | <i>accD-psaI</i> | spacer | LSC | 5 | TA | 2 |
| <i>C. pinnatifida</i> var. <i>major</i> | 63477 | 63486 | <i>psaI-ycf4</i> | spacer | LSC | 5 | TA | 2 |
| <i>C. pinnatifida</i> var. <i>major</i> | 63816 | 63827 | <i>psaI-ycf4</i> | spacer | LSC | 12 | A | 1 |
| <i>C. pinnatifida</i> var. <i>major</i> | 64706 | 64715 | <i>ycf4-cemA</i> | spacer | LSC | 10 | T | 1 |
| <i>C. pinnatifida</i> var. <i>major</i> | 65032 | 65041 | <i>cemA</i> | exon | LSC | 5 | TC | 2 |
| <i>C. pinnatifida</i> var. <i>major</i> | 67277 | 67296 | <i>petA-psbJ</i> | spacer | LSC | 20 | T | 1 |
| <i>C. pinnatifida</i> var. <i>major</i> | 67751 | 67760 | <i>petA-psbJ</i> | spacer | LSC | 10 | A | 1 |
| <i>C. pinnatifida</i> var. <i>major</i> | 68703 | 68714 | <i>psbE-petL</i> | spacer | LSC | 12 | G | 1 |
| <i>C. pinnatifida</i> var. <i>major</i> | 69135 | 69144 | <i>psbE-petL</i> | spacer | LSC | 10 | T | 1 |
| <i>C. pinnatifida</i> var. <i>major</i> | 69428 | 69437 | <i>psbE-petL</i> | spacer | LSC | 10 | A | 1 |
| <i>C. pinnatifida</i> var. <i>major</i> | 69459 | 69469 | <i>psbE-petL</i> | spacer | LSC | 11 | A | 1 |
| <i>C. pinnatifida</i> var. <i>major</i> | 70537 | 70546 | <i>trnW(CCA)-trnP(UGG)</i> | spacer | LSC | 5 | AT | 2 |
| <i>C. pinnatifida</i> var. <i>major</i> | 70559 | 70568 | <i>trnW(CCA)-trnP(UGG)</i> | spacer | LSC | 5 | AT | 2 |
| <i>C. pinnatifida</i> var. <i>major</i> | 71444 | 71459 | <i>psaJ-rpl33</i> | spacer | LSC | 16 | A | 1 |
| <i>C. pinnatifida</i> var. <i>major</i> | 72078 | 72087 | <i>rpl33-rps18</i> | spacer | LSC | 5 | AT | 2 |
| <i>C. pinnatifida</i> var. <i>major</i> | 72599 | 72610 | <i>rps18-rpl20</i> | spacer | LSC | 12 | T | 1 |
| <i>C. pinnatifida</i> var. <i>major</i> | 73344 | 73357 | <i>rpl20-rps12</i> | spacer | LSC | 14 | T | 1 |
| <i>C. pinnatifida</i> var. <i>major</i> | 74546 | 74555 | <i>clpP</i> | intron | LSC | 5 | AT | 2 |
| <i>C. pinnatifida</i> var. <i>major</i> | 74716 | 74726 | <i>clpP</i> | intron | LSC | 11 | A | 1 |
| <i>C. pinnatifida</i> var. <i>major</i> | 74793 | 74805 | <i>clpP</i> | intron | LSC | 13 | T | 1 |
| <i>C. pinnatifida</i> var. <i>major</i> | 75476 | 75487 | <i>clpP</i> | intron | LSC | 12 | A | 1 |
| <i>C. pinnatifida</i> var. <i>major</i> | 75524 | 75539 | <i>clpP</i> | intron | LSC | 16 | T | 1 |
| <i>C. pinnatifida</i> var. <i>major</i> | 76482 | 76491 | <i>clpP-psbB</i> | spacer | LSC | 5 | AT | 2 |
| <i>C. pinnatifida</i> var. <i>major</i> | 80767 | 80778 | <i>petB-petD</i> | spacer | LSC | 12 | A | 1 |
| <i>C. pinnatifida</i> var. <i>major</i> | 83897 | 83914 | <i>rps11-rpl36</i> | spacer | LSC | 18 | T | 1 |

| | | | | | | | | |
|---|--------|--------|----------------------------|--------|-----|----|------|---|
| <i>C. pinnatifida</i> var. <i>major</i> | 83917 | 83928 | <i>rps11-rpl36</i> | spacer | LSC | 3 | TTAT | 4 |
| <i>C. pinnatifida</i> var. <i>major</i> | 85054 | 85066 | <i>infA-rps8</i> | spacer | LSC | 13 | T | 1 |
| <i>C. pinnatifida</i> var. <i>major</i> | 85547 | 85557 | <i>rpl14-rpl16</i> | spacer | LSC | 11 | T | 1 |
| <i>C. pinnatifida</i> var. <i>major</i> | 86906 | 86920 | <i>rpl16</i> | intron | LSC | 15 | T | 1 |
| <i>C. pinnatifida</i> var. <i>major</i> | 87161 | 87174 | <i>rpl16-rps3</i> | spacer | LSC | 14 | T | 1 |
| <i>C. pinnatifida</i> var. <i>major</i> | 87970 | 87979 | <i>rps3-rpl22</i> | spacer | LSC | 10 | T | 1 |
| <i>C. pinnatifida</i> var. <i>major</i> | 104735 | 104744 | <i>rps12-trnV(GAC)</i> | spacer | Ira | 10 | T | 1 |
| <i>C. pinnatifida</i> var. <i>major</i> | 112719 | 112728 | <i>rrn5-trnR(ACG)</i> | spacer | Ira | 10 | A | 1 |
| <i>C. pinnatifida</i> var. <i>major</i> | 113128 | 113139 | <i>trnR(ACG)-trnN(GUU)</i> | spacer | Ira | 3 | TTTA | 4 |
| <i>C. pinnatifida</i> var. <i>major</i> | 113930 | 113939 | <i>trnN(GUU)-ycfI</i> | spacer | Ira | 5 | TA | 2 |
| <i>C. pinnatifida</i> var. <i>major</i> | 117337 | 117356 | <i>ndhF-rpl32</i> | spacer | SSC | 20 | A | 1 |
| <i>C. pinnatifida</i> var. <i>major</i> | 117562 | 117574 | <i>ndhF-rpl32</i> | spacer | SSC | 13 | A | 1 |
| <i>C. pinnatifida</i> var. <i>major</i> | 118336 | 118345 | <i>ndhF-rpl32</i> | spacer | SSC | 10 | C | 1 |
| <i>C. pinnatifida</i> var. <i>major</i> | 119120 | 119130 | <i>rpl32-trnL(UAG)</i> | spacer | SSC | 11 | T | 1 |
| <i>C. pinnatifida</i> var. <i>major</i> | 119390 | 119401 | <i>rpl32-trnL(UAG)</i> | spacer | SSC | 6 | AT | 2 |
| <i>C. pinnatifida</i> var. <i>major</i> | 124775 | 124784 | <i>ndhG-ndhI</i> | spacer | SSC | 10 | T | 1 |
| <i>C. pinnatifida</i> var. <i>major</i> | 125631 | 125640 | <i>ndhI-ndhA</i> | spacer | SSC | 5 | AT | 2 |
| <i>C. pinnatifida</i> var. <i>major</i> | 126742 | 126753 | <i>ndhA</i> | intron | SSC | 12 | T | 1 |
| <i>C. pinnatifida</i> var. <i>major</i> | 132681 | 132690 | <i>ycfI</i> | exon | SSC | 10 | T | 1 |
| <i>C. pinnatifida</i> var. <i>major</i> | 133312 | 133327 | <i>ycfI</i> | exon | SSC | 16 | A | 1 |
| <i>C. pinnatifida</i> var. <i>major</i> | 135660 | 135669 | <i>ycfI-trnN(GUU)</i> | spacer | Irb | 5 | AT | 2 |
| <i>C. pinnatifida</i> var. <i>major</i> | 136459 | 136470 | <i>trnN(GUU)-trnR(ACG)</i> | spacer | Irb | 3 | AATA | 4 |
| <i>C. pinnatifida</i> var. <i>major</i> | 136872 | 136881 | <i>trnR(ACG)-rrn5</i> | spacer | Irb | 10 | T | 1 |
| <i>C. pinnatifida</i> var. <i>major</i> | 144856 | 144865 | <i>trnV(GAC)-rps12</i> | spacer | Irb | 10 | A | 1 |