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#NEXUS

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CTGCA--TG-TGACA-GCTTGG-
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CCCTATCCTATCCATTTGGAAATCTTGGTTCAAATCCTTCAAT-GCT-GGATCAAAGAT-GTTCCTTCTT-TGCAT-TTCTTGCGATTGTTT-TTCCACGAATATCATAATTT-GAATAGTCT-GATTACTT-CAAAGAAATCTATTTACGT-CTTTTCAAAAAGAAAGAAAAGATTCTTTTGGTTCCTACATAATTCTTATGTATATGAATTGGAATATCTATTCCTATTTCTTCGTAAACAGTCTTCT-
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GCAATCTTAT-TTTCACTTTTGG-TTTCA-ACCTTATAGGATCCATATAA-AGCAATT-ACCCAACTA-TTCCTTCTCTT-TTCTGGGGTATTT-TTCAAG-TGTACTA-AAAAATCCTTTGGTA-GTAAGAAAT-CAAATGCTAGAGAATTCATTTCTA-AT-AAATACTCTGA--CTAATAAATTAGATACC-ATAGCCCCAGTT-ATTTCTCTTATTGGATCATTGTCGAAAGCTCA-
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```

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C_hookerianum TCGAGA-CCGAAACACATCGAGCGA-TTCGGAGAACTCG-TGAAGCGAGCGGCGGCGGCTGCCGCCGCGGGACGA-CCGTCACG---GCCGTCGCCTCGTCCCCTCCTGGGAGGGGCGCGGGGTGCACGGCC-GGGGACGGATG-AAACACAAACC-GGCGCAGCTCCGCGCCAAGG-GAAAATCGAAAGGCACGGGC----------CCCGC-GTTGGGCTCGGTGG---C-
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C_lancifolium_C3 TCGAGA-CCGAAACACATCGAGCGA-TTCGGAGAACTCG-TGAAGCGAGCGGCGGCGGCTGCCGCCGCGGGACGT-CCGTCCCG---GCCGTCGCCTCGTCCCCTCCTGGGAGGGGCGCGGGGTGCACGGCC-GGGGACGGATG-AACACAAACC-GGCGCAGCTCCGCGCCAAGG--GAAATTGAAAGGCACGGGC----------CCCAC-GTCGGGCTCGGTGG---C-
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GCAATCTTAT-TTTCACTTTGG-TTTCA-ACCTTATAGGATCCATATAA-AGCAATT-ACCCACTA-TTCCTTCTCTT-TTCTGGGGTATTT-TTCAAG-TGTACTA-AAAAATCCTTTGGTA-GTAAGAAAT-CAAATGCTAGAGAATTCATTTATA-AT-AAATACTCTGA--CTAATAAATTAGATACC-ATAGCCCCAGTT-ATTTCTCTTATTGGATCATTGTCGAAAGCTCA-
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TGATATATACATAGGAAAAGCCGTGTGCAATGAAAACTGCAAGCACGGTTTGGGGAGGGATCTTTTGTCTTATATAGCAACAAA
C_gracilis TCGAGA-CCGAAACACATCGAGCGA-TTCGGAGAACTCG-TGAAGCGAGCGGCGGCGGCTGCCGCCGCGGGACGA-CCGTCCCG---GCCGTCGCCTCGTCCCCTCCTGGGAGGGGCGCGGGGTGCACGGCC-GGGGACGGATG-AAACACAAACC-GGCGCAGCTCCGCGCCAAGG-GAAATCGAAAGGCACGGGC----------CCCAC-GTCGGGCTCGGTGG---C-
GTGGAGGCCGCTCG-CGCTCCATGC---GGATGGACACGACTCTCGGCAATGGATATCTCGGCTCTCGCATCGATGAAGAGCGCAGGAATGCGATCGTGGTGCGAATTGCAGAATCC-CGCGAACCATCGAGTCTTTGAACGCAAGTTGCGCCCGAGGCCAGCCGGCCGAGGGCACGTCCGCCTGGGCGTCAAGCGTCACGTC-GCTCCGTGCCAACTCCGT-CCC-
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TCTAACCAAAATGGATTTTGGGGTCACAGGAATTCTTTTTCTCTCATTTTTATTCTCAAATGATATCAGAGGTTTTGGAGTCATTCTGGAAATTCCATTCTCATCACGATTAGTATCTTCCCTTGAAGAAAACAAATACCAAAATCTCAGAATTTACGATCTATTCATTCAATATTTCCCTTTTTAGAGGATAAATTATCACATTTAAATTATGTGTCAGATTCTAAT-AATA-
CCCCATCCTATCCATTTGGAGCTCTTGGTTCAAATCCTTCAAT-GCT-GGATCAAAGAT-GTTCTTTCTT-TGCAT-TTCTTGCGATTGTTT-TTCCACGAATATCATAATTT-GAATAGTAT-GATTACTT-CAAATAAATCTATTTACGT-CTTTTCAAAAGAAAGAAAAGATTCTTTTGGTTCCTACATAATTCTTATGTATATGATTGAATATCTATTCCTATTTCTTCGTAAAAGCTTTCT
TATTTACG-ATCAATATCTTCTGGAGTCTTTATT-GAGC-GAACAC---TTTTCTATGGAAA-AATAG-AATA-TCTTATGGT-CGT-GTG-TTGTAATTCTT-TTCAGAGGATCC-TATGGTTCC-TCAAAGATACTTTC-AT-ACAT-TATGTT-CGATATAAA--GGAAAAGCG-ATTTCTGGCTTC--AAAAGGAA-CTCTTTTCT-GATGAAG-AA-ATGGAAA---TTTCATCTTGT-TAATTTTG-
GCAATCTTAT-TTTCACTTTGG-TTTCA-ACCTTATAGGATCCATATAA-AGCAATT-ACCCACTA-TTCCTTCTCTT-TTCTGGGGTATTT-TTCAAG-TGTACTA-AAAAATCCTTTGGTA-GTAAGAAAT-CAAATGCTAGAGAATTCATTTATA-AT-AAATACTCTGA--CTAATAAATTAGATACC-ATAGCCCCAGTT-ATTTCTCTTATTGGATCATTGTCGAAAGCTCA-
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GTTCATGATACTTTTTCATT-TTTATGAAAAAAGATTCATGAATTTGTATAATTTGTATTCTGAAATGCTCATATATCATGATATATCATATATATCATCATATTCGTGGTAAGGTTGTCAAAATTCTTAGACTTCTTTCTCAATATGTAATATATGTAATTCTTTTTTATTTTTTATTG-----
TGATATATACATAGGAAAAGCCGTGTGCAATGAAAACTGCAAGCACGGTTTGGGGAGGGATCTTTTGTCTTATATAGCAACAAA
C_fluviatilis TCGAGA-CCGAAACACATCGAGCGA-TTCGGAGAACTCG-TGAAGCGAGCGGCGGCGGCTGCCGCCGCGGGACGA-CCGTCCCG---GCCGTCGCCTCGTCCCCTCCTGGGAGGGGCGCGGGGTGCACGGCC-GGGGACGGATG-AAACACAAACC-GGCGCAGCTCCGCGCCAAGG--GAAATTGAAAGGCACGGGC----------CCCAC-GTCGGGCTCGGTGG---C-
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ATTTTGTACTGTATTGGGTAATCCTATAAGTAAACCGA-TCTGGACCG-ATTTATCGGATTCTGATATTATTGATCGATTTTGT-CGGATATGTAGAAATCTTTGTC-ATTATCACAGTGGATCCTCAAAGAAGCA-
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CCCCATCCTATCCATTTGGAGCTCTTGGTTCAAATCCTTCAAT-GCT-GGATCAAAGAT-GTTCCTTCTT-TGCAT-TTCTTGCGATTGTTT-TTCCACGAATATCATAATTT-GAATAGTCT-GATTACTT-CAAAGAAATCTATTTACGT-CTTTTCAAAAAGAAAGAAAAAGATTCTTTTGGTTCCTACATAATTCTTATGTATATGAATTTGAATATCTATTCCTATTTCTTCGTAAAAAGTCTTCT-
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GCAATCTTAT-TTTCACTTTTGG-TTTCA-ACCTTATAGGATCCATATAA-AGCAATT-ACCCGACTA-TTCCTTCTCTT-TTATGGGGTATTT-TTCAAG-TGTACTA-AAAAATCCTTTGGTA-GTAAGAAAT-CAAATGCTAGATAATTCATTTCTA-AT-ACATACTCTGA--CTAATAAATTAGATACC-ATAGCCCCAGTT-ATTTCTCTTATTGGATCATTGTCGAAAGCTCA-
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TGATAATTGATATATACATAAGGAAAGCCGTGTGCAATGAAAACTGCAAGCACGGTTTGGGGAGGGATCTTTTTCTTATAAGCAACAA-
C_bicolor_strongCAM   TCGAGA-CCGAAACACATCGAGCGA-TTCGGAGAACTCG-TGAAGCGAGCGGCGGCGGCTGTCGCCGCGGGACGA-CCGTCCCG---GCCGTCGCCTCGTCCCCTCCCGGGAGGGGCGCGGGGTCCACGGCC-GGGGACGGATG-AAACACAAACC-GGCGCAGCTCCGCGCCAAGG-GAAAATCGAAAGGCACGGGC----------CCCGC-GTCGGGCTCGGTGG---
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AAT------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------
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ATCCCATACATTTGGAAATCTTGGTTCAAATCCTTCAAT-GCT-GGATCAAAGAT-GTTCCTTCTT-TGCAT-TTCTTGCGATTGTTT-TTCCACGAATATCATAATTT-GAATAGTCT-GATTACTT-CAAAGAAATCTATTTACGT-CTTTTCAAAAAGAAATAAAAGATTCTTTTGGTTCCTACATAATTCTTATGTATATGAATTTGAATATCTATTCTTATTTCTTCGTAAACAGTCTTCT-
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TTTGTATCGTA--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------
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ATCCCATACATTTGGAAATCTTGGTTCAAATCCTTCAAT-GCT-GGATCAAAGAT-GTTCCTTCTT-TGCAT-TTCTTGCGATTGTTT-TTCCACGAATATCATAATTT-GAATAGTCT-GATTACTT-CAAAGAAATCTATTTACGT-CTTTTCAAAAAGAAATAAAAGATTCTTTTGGTTCCTACATAATTCTTATGTATATGAATTTGAATATCTATTCTTATTTCTTCGTAAACAGTCTTCT-
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ATTTTGTACTGTATTGGGTAATCCTATAAGTAAACCGA-TCTGGACCG-ATTTATCGGATTCTGATATTATTGATCGATTTTGTCCGGATATGTTGAAATCTTTGTC-ATTATCACAGCGGATCCTCAAAGAAGCA-G--
TTTGTATCGTA--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------
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C_cyperifolium   TCGAGA-CCGAAACACATCGAGCGA-TTCGGAGAATCCG-TGAAGCGAGCGGTGGCGGTTGCCGCCGCGGGACGA-CCGTCCCG---GCCGTCGCCTCGTCCCTCCTGGGAGGGGCGCGGGGGGCACGGCC-GGCGACGGATG-AAACACAAACC-GGCGCAGCTCCGCGCCAAGG-GAAAATCGAAAGGCACGGGC----------CCCAC-ATCGGGCTCGGTGG---C-
GTGGAGCGCCGTCG-CGCTCCATGC---GGATGGACACGACTCTCGGCAATGGATATCTCGGCTCTCGCATCGATGAAGAGCGCAGCGAAATGCGATACGTGGTGCGAATTGCAGAATCC-CGCGAACCATCGAGTCTTTGAACGCAAGTTGCGCCCGAGGCCAGCCGGCCGAGGGCACGTCTGCCTGGGCGTCAAGCATCACGTC-GCTCCGTGCCAACTCCGT-CGC-
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C_tigrinum_weakCAM   TCGAGA-CCGAAACACATCGAGCGA-TTCAGAGAACTCG-TGAAGCGAGCGGCGGCGGATGCTGCCGCGGGACGA-CCGTCCCGGTCGTCGTCGCCTCGTCCCCTCCTGGGAGGGGTGCGGGGGGCACGACC-GGTGACGGATG-AAACACAAACC-GGCGCAGCTCCGCGCCAAGG-GAAAATCGAAAGGCACGGGC----------CCCGC-GTCGGGCTCGGTGG---C-
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AAT------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------
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CCCCATCCTATCCATTTGGAAATCTTGGTTCAAATCCTTCAAT-GCT-GGATCAAAGAT-GTTCCTTCTTTAGCAT-TTCTTGCGATTGTTT-TTCCACGAATATCATTATTTGGAATAGTCT-TATTACTTACAAATAAATCTATTTACGT-
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TTTGTATCGA---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------
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CCCCATCCTATCCATTTGGAAATCTTGGTTCAAATCCTTCAAT-GCT-GGATCAAAGAT-GTTCCTTCTTTAGCAT-TTCTTGCGATTGTTT-TTCCACGAATATCATTATTTGGAATAGTCT-TATTACTTACAAATAAATCTATTTACGT-
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TTTGTATCGA---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------
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C_wilsoni   TCGAGA-CCGAAACACATCGAGCGA-TTCGGAGAACTCG-TGAAGCGAGCGGCGGCGGCTGCCGCCGCGGGACGA-CCGTCACG---GCCGTCGCCTCGTCCCCTCCTGGGAGGGGCGCGGGGTGCACGGCC-GGGGACGGATG-AAACACAAACC-GGCGCAGCTCCGCGCCAAGG-GAAAATCGAAAGGCACGGGC----------CCCGC-GTTGGGCTCGGTGG---C-
GTGGAGCGCCGTCG-CGCTCCATGC---GGATGGACACGACTCTCGGCAATGGATATCTCGGCTCTCGCATCGATGAAGAGCGCAGCGAAATGCGATACGTGGTGCGAATTGCAGAATCC-CGCGAACCATCGAGTCTTTGAACGCAAGTTGCGCCCGAGGCCAGCCGGCCGAGGGCACGTCCGCCTGGGCGTCAAGCGTCACGTC-GCTCCGTGCCAACTCCGT-CCC-CTCGATGGGTG--------
CCGAGGC-ACGGACGCGCAGGGTGGCCCCTCGTGCCCTTGGGCGCGGCGGGCTGAAGAGCCGGTCGTCGTCTCGCTGGCTGCG----GGCAACGAGTGGTGGGTGAAA-GCTGTGAGCAC-AGCCCGCG---TTGTCCC---GTG-----CGGAGCCT-GAGAGAAGGACGGTGCC-CCCGAGGC-GATCCCGACCCACGCGCCGAT-----CTGCA--TG-CGGCG-GCTTGG-
AAT------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------
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C_erythraeum_C3   TCGAGA-CCGAAACACATCGAGCGA-TTCGGAGAACTCG-TGAAGCGAGCGGCGGCGGATGCCGCCGCGGGACGA-CCGTCACG---GCCGTCGCCTCGTCCCCTCCTGGGAGGGGCGCGGGGTGCACGGCC-GGGGACGGATGAAAACACAAACC-GGCGCAGCTCCGCGCCAAGG-GAAAATCGAAAGGCACGGGC----------CCCGC-GTTGGGCTCGGTGG---C-
GTGGAGCGCCGTCG-CGCTCCATGC---GGATGGACACGACTCTCGGCAATGGATATCTCGGCTCTCGCATCGATGAAGAGCGCAGCGAAATGCGATACGTGGTGCGAATTGCAGAATCC-CGCGAACCATCGAGTCTTTGAACGCAAGTTGCGCCCGAGGCCAGCCGGCCGAGGGCACGTCCGCCTGGGCGTCAAGCGTCACGTC-GCTCCGTGCCAACTCCGT-CCC-CTCGATGGGTG--------
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GCAATCTTAT-TTTCACTTTTGG-TTTCA-ACCTTATAGGATCCATATAA-AGCAATT-ACCCAACTA-TTCCTTCTCTT-TTCTGGGGTATTT-TTCAAG-TGTACTA-AAAAATCCTTTGGTA-GTAAGAAAT-CAAATGCTAGAGAATTCATTTATA-AT-AAATACTCTGA--CTAATAAATTAGATACC-ATAGCCCCAGTT-ATTTCTCTTATTGGATCATTGTCGAAAGCTCA-
ATTTTGTACTGTATTGGGTAATCCTATAAGTAAACCGA-TCTGGACCG-ATTTATCGGATTCTGATATTATTGATCGATTTTGT-CGGATATGTAGAAATCTTTGTC-ATTATCACAGTGGATCCTCAAAGAAGAA-
GGTTTTGTATCGTATAAAGTATATACTTCGACTTTCGTGTGCTAGAACTTTGGCTCGTAAACATAAAAGTACAGTACGCACTTTTATGCGAAAATTAGGTTCGGGATTCTTAGAAGAATTTTTTTTGGAAGAAGAACAATCTCTTTCTTTAATCTTCCTCCAAAAAATCCCTTTTATTTTACACCGATTACATAGAGAACGTATTTGGTATTTGGACATTATCCGTATCAATGATCTGGTGGATCATTCATGATT
GTTCATGATACTTTTCATT-TTTATGAAAAAAGATTCATGAATTTGTATAATTTGTATTCTGAAATGCTCATATATCATGATATATCATATATATCATCATATTCGTGGTAAGGTTGTCAAAATTCTTAGACTCTCTTCTCAATATGTAATATATGTAATTCTTTTTTATTTTTTATTG-----
TGATATATACATAGGAAAAGCCGTGTGCAATGAAAACTGCAAGCACGGTATGGGGAGGGATCTTTT----------------
ATGTATTTAAATGGCAGAATGACAAGGATATTTAGATTTAAAAAAGATAGATTTCGGCAACAAAACTTCCTCTATCCGCTACTCCTTCAGGAGTATATTTACTCACTTGTTCATTATCATAGCTTCAATAGTTTGATTTTTTACGAACCTGTGGAAATTATCGGTTATGACAATAAATATAGTTTATTACTTGTGAAACGTTTAATTACTCGAATGTACCAACAGGAATCTTTGATTTCTTCGGTGAATGATTCT
AACCAAAATGGATTTTGGGGTCACAAGAATTCTTTTTCTTCTCATTTTTATTCTCAAATGATATCAGAAGTTTTTGGAGTCATTCTGGAAATTCCATTCTCATCACGATTAGTATCTTCCCTTGAAGAAAAACAAATACCAAAATCTCAGAATTTACGATCTATTCATTCAATATTTCCCTTTTTAGAGGATAAATTATCACATTTAAATTATGTGTCAGATTTACT-AATA-
CCCTATCCTATCCATTTGGAAATCTTGGTTCAAATCCTTCAAT-GCT-GGATAAAAGAT-GTTCCTTCTT-TGCAT-TTCTTGCGATTGTTT-TTCCACGAATATCATAATTT-GAATAGTAT-GATTACTT-CAAATAAATCTATTTACGT-CTTTTCAAAAAGAAAGAAAAAGATTCTTTTGGTTCCTACATAATTCTTATGTATATGAATTTGAATATCTATTCCTATTTCTTCGTAAAAAGTCTTCT-
TATTTACG-ATCAATATCTTCTGGAGTCTTTATT-GAGC-GAACAC---TTTTCTTTGGAAA-AATAG-AATA-TCTTATGGT-CGT-GTG-TTGTAATTCTT-TTCAGAGGATCC-TATGGTTCC-TCAAAGATACTTTC-AT-ACAT-TATGTT-CGATATAAA--GGAAAAGCG-ATTCTGGCTTC--AAAAGGAA-CTCTTATTCT-GATGAAT-AA-ATGGAAA---TTTCATCTTGT-GAATTTTTG-
GCAATCTTAT-TTTCACTTTTGG-TTTCA-ACCTTATAGGATCCATATAA-AGCAATT-ACCCAACTA-TTCCTTCTCTT-TTCTGGGGTATTT-TTCAAG-TGTACTA-AAAAATCCTTTGGTA-GTAAGAAAT-CAAATGCTAGAGAATTCATTTATA-AT-AAATACTCTGA--CTAATAAATTAGATACC-ATAGCCCCAGTT-ATTTCTCTTATTGGATCATTGTCGAAAGCTCA-
ATTTTGTACTGTATTGGGTAATCCTATAAGTAAACCGA-TCTGGACCG-ATTTATCGGATTCTGATATTATTGATCGATTTTGT-CGGATATGTAGAAATCTTTGTC-ATTATCACAGTGGATCCTCAAAGAAGAA-
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GTTCATGATACTTTTCATT-TTTATGAAAAAAGATTCATGAATTTGTATAATTTGTATTCTGAAATGCTCATATATCATGATATATCATATATATCATCATATTCGTGGTAAGGTTGTCAAAATTCTTAGACTCTCTTCTCAATATGTAATATATGTAATTCTTTTTTATTTTTTATTG-----
TGATATATACATAGGAAAAGCCGTGTGCAATGAAAACTGCAAGCACGGTATGGGGAGGGATCTTTT----------------
C_tracyanum_C3   TCGAGA-CCGAAACACATCGAGCGA-TTCGGAGAACTCG-TGAAGCGAGCGGCGGCGGCTGCCGCCGCGGGACGA-CCGTCACG---GCCGTCGCCTCGTCCCCTCCTGGGAGGGGCGCGGGGTGCACGGCC-GGGGACGGATG-AAACACAAACC-GGCGCAGCTCCGCGCCAAGG-GAAAATCGAAAGGCACGGGC----------CCCGC-GTTGGGCTCGGTGG---C-
GTGGAGCGCCGTCG-CGCTCCATGC---GGATGGACACGACTCTCGGCAATGGATATCTCGGCTCTCGCATCGATGAAGAGCGCAGCGAAATGCGATACGTGGTGCGAATTGCAGAATCC-CGCGAACCATCGAGTCTTTGAACGCAAGTTGCGCCCGAGGCCAGCCGGCCGAGGGCACGTCCGCCTGGGCGTCAAGCGTCACGTC-GCTCCGTGCCAACTCCGT-CCC-CTCGATGGGTG--------
CCGAGGC-ACGGACGCGCAGGGTGGCTCGTCGTGCCCTCCGGCGCGGCGGGCTGAAGAGCCGGTCGTCGTCTCGCTGGCTGCG----GGCAACGAGTGGTGGGTGAGA-GCTGTGAGCAC-AGCCTGCG---TTGTCCC---GTG-----CAGAGTCT-GAGAGAACGACGGTGCC-CCCGAGGC-GATCCCGACCCACGCGCCGAT-----CTGCA--TG-CGGCG-GCTTGG-
AATATGTATTTAAATGGCAGAATGACAAGGATATTTAGATTTAAAAAAGATAGATTTCGGCAACAAAACTTCCTCTATCCGATACTCCTTCAGGAGTATATTTACTCACTTGTTCTTTATCATAGTTTCAATAGTTTGATTTTTTACGAACCTGTGGAAATTCTCGGTTATGACAATAAATATAGTTTATTACTTGTGAAGCGTTTAATTACTCGAATGTACCAACAGGAATCTTTGATTTCTTCGGTGAATGAT
TCTAACCAAAATGGATTTTGGGGTCACAAGAATTCTTTTTCTTCTCATTTTTATTCTCAAATGATATCAGAAGTTTTTGGAGTCATTCTGGAAATTCCATTCTCATCACGATTAGTATCTTCCCTTGAAGAAAAACGAATACCAAAATCTCAGAATTTACGATCTATTCATTCAATATTTCCCTTTTTAGAGGATAAATTATCACATTTAAATTATGTTTCAGATTTACT-AATA-
CCCCATCCTATACATTTTGAAATCTTGGTTCAAATCCTTCAAT-GCT-GGATCAAAGAT-GTTCCTTATT-TGCAT-TTCTTGCGATTGTTT-TTCCACGAATATCATAATTT-GAATAGTCT-GATTACTT-CAAATAAATCTATTTACGT-CTTTTCAAAAAAAAAGAAAAAGATTCTTTTGGTTCCTACATAATTCTTATGTATATGAATTTGAATATCTATTCCTATTTCTTCGTAAAAAGTCTTCT-
TATTTACG-ATCAATATCTTCTGGAGTCTTTATT-GAGC-GAACAC---TATTCTTTGGAAA-AATAG-AATA-TCTTATGGT-CGT-GTG-TTGTAATTCTT-TTCAGAGGATCC-TATGGTTCC-TCAAAGATACTGTC-AT-ACAT-TATGTT-CGATATAAA--GGAAAAGC-----------------------------------GATGAAT-AA-ATGGAAA---TTTCATCTTGT-GAATTTTTG-
GCAATCTTAT-TTTCACTTTTGG-CTTCA-ACCTTATAGGATCCATATAA-AGCAATT-ACCCAACTA-TTCCTTCTCTT-TTCTGGGGTATTT-TTCAAG-TGTACTA-AAAAATCCTTTGGTA-GTAAGAAAT-CAAATGCTAGTGAATTCATTTTTA-AT-AAATACTCTGA--CTAATAAATTAGATACC-ATAGCCCCAGTT-ATTTCTCTTATTGGATCATTGTCGAAAGCTCA-
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GGTTTTGTATCGTATAAAGTATATACTTCGACTTTCGTGTGCTAGAACTTTGGCTCGTAAACATAAAAGTACAGTACGCACTTTTATGCGAAAATTAGGTTCGGGATTCTTAGAAGAATTTTTTTTGGAAGAAGAACAATCTCTTTCTTTAATCTTCCTCCAAAAAATCCCTTTTGTTTTACACCGATTACATAGAGAACGTATTTGGTATTTGGACATTATCCGTATCAATGATCTGGTGGATCATTCATGATT
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TGATATATACATAGGAAAAGCCGTGTGCAATGAAAACTGCAAGCACGGTTT-------------------------------
ATGTATTTAAATGGCAGAATGACAAGGATATTTAGATTTAAAAAAGATAGATTTCGGCAACAAAACTTCCTCTATCCGATACTCCTTCAGGAGTATATTTACTCACTTGTTCTTTATCATAGTTTCAATAGTTTGATTTTTTACGAACCTGTGGAAATTCTCGGTTATGACAATAAATATAGTTTATTACTTGTGAAGCGTTTAATTACTCGAATGTACCAACAGGAATCTTTGATTTCTTCGGTGAATGATTCT
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CCCCATCCTATACATTTTGAAATCTTGGTTCAAATCCTTCAAT-GCT-GGATCAAAGAT-GTTCCTTATT-TGCAT-TTCTTGCGATTGTTT-TTCCACGAATATCATAATTT-GAATAGTCT-GATTACTT-CAAATAAATCTATTTACGT-CTTTTCAAAAAAAAAGAAAAAGATTCTTTTGGTTCCTACATAATTCTTATGTATATGAATTTGAATATCTATTCCTATTTCTTCGTAAAAAGTCTTCT-
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GCAATCTTAT-TTTCACTTTTGG-CTTCA-ACCTTATAGGATCCATATAA-AGCAATT-ACCCAACTA-TTCCTTCTCTT-TTCTGGGGTATTT-TTCAAG-TGTACTA-AAAAATCCTTTGGTA-GTAAGAAAT-CAAATGCTAGTGAATTCATTTTTA-AT-AAATACTCTGA--CTAATAAATTAGATACC-ATAGCCCCAGTT-ATTTCTCTTATTGGATCATTGTCGAAAGCTCA-
ATTTTGTACTGTATTGGGTAATCCTATAAGTAAACCGA-TCTGGACCG-ATTTATCGGATTCTGATATTATTGATCGATTTTGT-CGGATATGTAGAAATCTTTGTC-ATTATCACAGTGGATCCTCAAAGAAGCA-
GGTTTTGTATCGTATAAAGTATATACTTCGACTTTCGTGTGCTAGAACTTTGGCTCGTAAACATAAAAGTACAGTACGCACTTTTATGCGAAAATTAGGTTCGGGATTCTTAGAAGAATTTTTTTTGGAAGAAGAACAATCTCTTTCTTTAATCTTCCTCCAAAAAATCCCTTTTGTTTTACACCGATTACATAGAGAACGTATTTGGTATTTGGACATTATCCGTATCAATGATCTGGTGGATCATTCATGATT
GTTCATGATACTTTTCATT-TTTATGAAAAAAGATTCATGAATTTGTATAATTTGTATTCTGAAATGCTCAT----------------ATATATCATCATATTCGTGGTAAGGTTGTCAAAATTCTTAGACTTTCTTCTCAATATGTAATATATGTAATTCTTTTTTATTTTTTATTG-----
TGATATATACATAGGAAAAGCCGTGTGCAATGAAAACTGCAAGCACGGTTT-------------------------------
C_pumilum   TCGAGA-CCGAAACACATCGAGCGA-TTCGGAGAACTCG-TGAAGCGAGCGGCGGCGTCTGCCGCCGCGGGACGA-CCGTCCCG---GCCGTCGCCTCGTCCCCTCCTGGGAGGGGCGCGGGGGGCGCGGCC-GGGGACGGATGAAAACACAAACC-GGCGCAGCTCCGCGCCAAGG-GAAATACGAAAGGCACGGGC----------CCCGC-GTCGGGCTCGGTGG---
CAGTGGAGCGCCGTCG-CGCTCCATGC---GGATGGACATGACTCTCGGCAATGGATATCTCGGCTCTCGCATCGATGAAGAGCGCAGCGAAATGCGATACGTGGTGCGAATTGCAGAATCC-CGCGAACCATCGAGTCTTTGAACGCAAGTTGCGCCCGAGGCCAGCCGGCCGAGGGCACGTCCGCCTGGGCGTCAAGCGTCGCGTC-GCTCCGTGCCAACTCCGT-CCC-
CCCGATGGGTGGGCGTCGGTCGAGGC-ACGGATGCGCAGGGTGGCTCGTCGTGCCCTTCGGCGCGGCGGGCTGAAGAGCCGGTCGTCGTCTCGCTGGCTGCG----GGCAACGAGGGGTGGGTGAAA-GCTGTGAGCGC-AGCCCGTG---TTGTCTC---GTG-----CGGAGCCT-GAGAGAACGACGGTGCC-CCCGAGGC-GATCCCGACCAACGCGCCGAT-----CTGCA--TG-CGGCG-GCTTGG-
AAT------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------
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Dendrobium_officinale   TCGAGA-CCGAAACACAACGAGCAA-TTTTGTGAACCCGTTAAAAAAAGCGGCGGCTCTTGCTGCTGAGATAAAATCCACTGGA---GTCATCGCCTCATCCCCTCTATGGGG------TGTGGACGTGATG-AAGGATGGATGAACCCTAAAATC-GGCGCAGCGTAGCGCCAAGG-GAATCTTGAAA--CACAAGC----------CCAT--
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ATCCATGGATG--TGTT-ACTAAGGC-TCGGATGTGCATGGTGGCTCCTCGTGCCCCTTGGTGCGGCGGGCTGAAGGGCGGGTCATCTTCTCGTTGGTTGCC----AACAATAAGGGGTGGATTAA---------AAAA-GGCCTATGCTATTGTGAT---AAG-----CGC-GCCC-GAGAG-ATGATCATACT-TTTTAGGT-GATCCCAATCCATGCGCTAAT-----CCATG---GATGGC--GTATCG-
AAT---------------------------------------------------------------------------------------------------------------------
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TTGAAGAAAAAAGAATACCAAAATCTCAGAATTTACGATCTATTCATTCAATATTTCCCTTTTTAGAGGATAAATTATCGCATTTAAATTATGTGTCAGATCTACT-AATA-CCCCATCCCATCCATCTGGAAATCTTGGTTCAAATCCTTCAAT-GTT-GGATTAAAGAT-GTTCCTTCTT-TGCAT-TTCTTGCGATTGTTT-TTCCACGAATATCATAATTT-GAATAGTCT-CTTTACTT-
CAAAGAAATCCATTTACGT-ATTTTCAAAAAGAAAGAAAAGATTCTTTTGGTTCCTACATAATTCTTATGTATATGAATGCGAATATATATTCCTGTTTCTTCGTAAACAGTCTTCT-TATTTACG-ATCAATATCTTCTGGAGTCTTTCTT-GAGC-GAACAC---ATTTCTATGGAAA-AATAG-AATA-TCTTATAGT-CGT-GTG-TTGTAATTCTT-TTCAGAGGATCC-TATGGTTCC-
TCAAGGATACTTTC-AT-ACAT-TATGTT-CGATATCAA--GGAAAAGCA-ATTCTGGCTTC--AAAAGGAA-CTCTTATTCT-GATGAAA-AA-ATGGGAA---TTTCATCTTGT-GAATTTTTG-GCAATCTTAT-TTTCACTTTTGG-TTTCA-ACCTTATAGGATCCATATAA-AGCAATT-ACCCAACTA-TTCCTTCTCTT-TTCTGGGGTTATT-TTCAAG-TGTACTG-AAAAATCCTTTGGTA-
GTAAGAAAT-CAAATGCTAGAGAATTCATTTCTA-AT-AAATACTCTAT--CTAAGAAATTAGATACC-ATAGCCCCAGTT-ATTTCTCTTATTGGATCATTGTCGAAAGATCG-ATTTTGTACTGTATTGGGTCATCCTATTAGTAAACCGA-TCTGGACCG-ATTTATCGGATTCTGATATTCTTGATCGATTTTGT-CGGATATGTAGAAATCTTTGTC-GTTATCACAGCGGATCCTCAAAGAAACA-
GGTTTTGTATCGTATAAAGTATATACTTCGACTTTCGTGTGCTAGAACTTTGGCTCGTAAACATAAAAGTACAGTACGCACTTTTATGCGAAGGTTAGGTTCGGGATTCTTAGAAGAATTCTTTTTGAAGAAGAACAATCTCTTTCTTTAATCTTCCTCCAAAAAATACCTTTTATTTTACACGGATTACATAGAGAACGTATTTGGTATTTGGACATTATCCGTATCAATGATCTGGTGGATCATTCATGA--
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GCTTAAATAGTTTGATTTTTTACGAACCTGTGGAATTTCTAGGTTATGACAGTAAATTTAGTTTAGTACTTGTGAAACGTTTAATTATTCGAATGTATCAACAGAAATCTTTGATTTCTTCGGTGAATTATTCTAACCAAAATGGATCTTGGGAGCACAAGAATTCTTTTTCTTCTCATTTTTCTTCTCAAATGGTATCAGAAGGTTTTGGAGTCATTCTGGAAATTCCATTCTCGTCGCAATTAGTATCTTCCC
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CAAAGAAATCCATTTACGT-ATTTTCAAAAAGAAAGAAAAGATTCTTTTGGTTCCTACATAATTCTTATGTATATGAATGCGAATATATATTCCTGTTTCTTCGTAAACAGTCTTCT-TATTTACG-ATCAATATCTTCTGGAGTCTTTCTT-GAGC-GAACAC---ATTTCTATGGAAA-AATAG-AATA-TCTTATAGT-CGT-GTG-TTGTAATTCTT-TTCAGAGGATCC-TATGGTTCC-
TCAAGGATACTTTC-AT-ACAT-TATGTT-CGATATCAA--GGAAAAGCA-ATTCTGGCTTC--AAAAGGAA-CTCTTATTCT-GATGAAA-AA-ATGGGAA---TTTCATCTTGT-GAATTTTTG-GCAATCTTAT-TTTCACTTTTGG-TTTCA-ACCTTATAGGATCCATATAA-AGCAATT-ACCCAACTA-TTCCTTCTCTT-TTCTGGGGTTATT-TTCAAG-TGTACTG-AAAAATCCTTTGGTA-
GTAAGAAAT-CAAATGCTAGAGAATTCATTTCTA-AT-AAATACTCTAT--CTAAGAAATTAGATACC-ATAGCCCCAGTT-ATTTCTCTTATTGGATCATTGTCGAAAGATCG-ATTTTGTACTGTATTGGGTCATCCTATTAGTAAACCGA-TCTGGACCG-ATTTATCGGATTCTGATATTCTTGATCGATTTTGT-CGGATATGTAGAAATCTTTGTC-GTTATCACAGCGGATCCTCAAAGAAACA-
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Grammatophyllum_speciosum_weakCAM   TCGATA-T-GAAACATATCGAGCGA-TTCAGTGAACATG-TGAAGTGAGCGGCGGTGGCTACCGTCGCGATATGA-CTGTCCTT---ACTATTGCCTCATCCCCTCCCAGCAT------GGGGGGTGCGACC-AAGGACGGATG-AAACATGAACC-GACGCATCTTTGTGCTAAGG-GAAGATTGAAA--CACAGGC----------CCCAC-
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CTCGATGGGTG--CGTTCGACGAGGC-CTGGATGTGTA-GGTGGCTTATCATGTCTGTCGACGTGGCGGGTTGAAGAGCTGATCA-CGCTTTGCCGGCTACG----GGCAACAAGGGTTGGGTAAGA-GTTGTGAGCGT-AGCCCACG---TTGTCTC---TTG-----TTTGCTC-GGGAGGACGACGACTAC-TTCGAGGT-GATCTTGACCCACCTGCCGAT-----ATACA--TG-CGGTG-GCTTGG-
AAT--
CAACAAAACTTCCTCTATCCGCTACTCCTTCAGGAGTATATTTACTCACTTGTTCATTATCATAGCTTCAATAGTTTGATTTTTTACGAACCTGTGGAAATTATCGGTTATGACAATAAATATAGTTTAGTACTTGTGAAACGTTTAATTACTCGAATGTACCAACAGGAATCTTTAATTTCTCCGGTGAATGATTCTAACCAAAATGGATTTTGGGGTCACAAGAATTCTTTTTCTTATCATTTTTATTCTCAA
ATGATATCAGAAGTTTTTGGAGTCATTCTGGAAATTCCATTCTCATCGCGATTAGTACCTTCTCTTGAAGAAAAACGAATACCAAAATCTCAGAATTTCCGATCTATTCATTCAATATTTCCCTTCTTAGAGGATAAATTATCACATTTAACTTATGTGTCAGATCTACT-AATA-CCCCATCCATCCATCTTGGAAATCTTGGTTCAAATCCTTCAAT-GCT-GGATCAAAGAT-GTTCCTTCTT-TGCAT-
TTCTTGCGATTGTTT-TTCCACGAATATCATAATTT-GAATAGTCT-GATTACTT-CAAAAAAATCTATTTACGT-CTTTTCAAAAAGAAAGAAAAGATTTTTTTGGTTCCTACATAATTCTTATGTATATGAATTGAATATCATTCCTATTTCTCCGTAAACAGTCTTCT-TATTTACG-ATCAATATCTTCTGGAGTCTTTCTT-GAGC-GAACAC---TTTTCTATGGAAA-AATAG-AATA-
TCTTATGGT-CAT-GTG-TTGTAATTCTT-TTCAGAGGATCC-TATGGTTCC-TCAAAGATACCTTC-AT-ACAT-TATGTT-CGATATAAA--GGAAAAGCA-ATTCTGGCTTC--AAAAGGAA-CTCTTATTCT-GATGAAT-AA-ATGGAGA---TTTCATCTTGT-GATTTTTG-GCAATCTTAT-TTTCACTTTTG-TTTCA-ACCTTATAGGATCATATAA-AGCAATT-ACCCAACTC-
TTCCTTCTCTT-TTCTGGGGTATTT-TTCAAG-TGTACTA-AAAAATCCTTTGTTA-GTAAGAAAT-CAAATGCTAGAGAATTCATTTATA-AT-AAATACTCTGA--CTACGAAATTAAATACC-ATAGTCCCGT-ATTTCTCTTATTGGATTATTGTCAAAGCTAA-ATTTTGTACTGTATTGGGTAATCCTATTAGTAAACCGA-TCTGGACCG-
ATTTATCGGATTCTGATATTATTGATCGATTTTGT-CGGATATGTAGAAATCTTTGTC-ATTATCACAGTGGATCCTCAAAGAAGCA-
GGTTTTGTATCGTATAAAGTATATACTTCGACTTTCGTGTGCTAGAACTTTGGCTCGTAAACATAAAAGTACAGTACGCACTTTTATGCGAAAATTAGGTTCGGGATTCTTAGAAGAATTTTTTTTGAAGAAGAACAATCTCTTTCTTTAATCTTCCTACAAAAAATACCTTTTCTTTACACGGATTACATAGAAA--
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CAACAAAACTTCCTCTATCCGCTACTCCTTCAGGAGTATATTTACTCACTTGTTCATTATCATAGCTTCAATAGTTTGATTTTTTACGAACCTGTGGAAATTATCGGTTATGACAATAAATATAGTTTAGTACTTGTGAAACGTTTAATTACTCGAATGTACCAACAGGAATCTTTAATTTCTCCGGTGAATGATTCTAACCAAAATGGATTTTGGGGTCACAAGAATTCTTTTTCTTATCATTTTTATTCTCAA
ATGATATCAGAAGTTTTTGGAGTCATTCTGGAAATTCCATTCTCATCGCGATTAGTACCTTCTCTTGAAGAAAAACGAATACCAAAATCTCAGAATTTCCGATCTATTCATTCAATATTTCCCTTCTTAGAGGATAAATTATCACATTTAACTTATGTGTCAGATCTACT-AATA-CCCCATCCATCCATCTTGGAAATCTTGGTTCAAATCCTTCAAT-GCT-GGATCAAAGAT-GTTCCTTCTT-TGCAT-
TTCTTGCGATTGTTT-TTCCACGAATATCATAATTT-GAATAGTCT-GATTACTT-CAAAAAAATCTATTTACGT-CTTTTCAAAAAGAAAGAAAAGATTTTTTTGGTTCCTACATAATTCTTATGTATATGAATTGAATATCATTCCTATTTCTCCGTAAACAGTCTTCT-TATTTACG-ATCAATATCTTCTGGAGTCTTTCTT-GAGC-GAACAC---TTTTCTATGGAAA-AATAG-AATA-
TCTTATGGT-CAT-GTG-TTGTAATTCTT-TTCAGAGGATCC-TATGGTTCC-TCAAAGATACCTTC-AT-ACAT-TATGTT-CGATATAAA--GGAAAAGCA-ATTCTGGCTTC--AAAAGGAA-CTCTTATTCT-GATGAAT-AA-ATGGAGA---TTTCATCTTGT-GATTTTTG-GCAATCTTAT-TTTCACTTTTG-TTTCA-ACCTTATAGGATCATATAA-AGCAATT-ACCCAACTC-
TTCCTTCTCTT-TTCTGGGGTATTT-TTCAAG-TGTACTA-AAAAATCCTTTGTTA-GTAAGAAAT-CAAATGCTAGAGAATTCATTTATA-AT-AAATACTCTGA--CTACGAAATTAAATACC-ATAGTCCCGT-ATTTCTCTTATTGGATTATTGTCAAAGCTAA-ATTTTGTACTGTATTGGGTAATCCTATTAGTAAACCGA-TCTGGACCG-
ATTTATCGGATTCTGATATTATTGATCGATTTTGT-CGGATATGTAGAAATCTTTGTC-ATTATCACAGTGGATCCTCAAAGAAGCA-
GGTTTTGTATCGTATAAAGTATATACTTCGACTTTCGTGTGCTAGAACTTTGGCTCGTAAACATAAAAGTACAGTACGCACTTTTATGCGAAAATTAGGTTCGGGATTCTTAGAAGAATTTTTTTTGAAGAAGAACAATCTCTTTCTTTAATCTTCCTACAAAAAATACCTTTTCTTTACACGGATTACATAGAAA--
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Dendrobium_crystallinum TCGAGA-CCGAAGACA-CGAGCGA-TTTTGAGAACCCGTTAAAATAAGCGGTGGCTCTTGCTGCTGTGATAAAATCCACCCCA---GTCATCGCCGCATGCCCTCTTTGGGG------CGGGGACGTGATG-AAGGATGGATGTACCCTCAAATC-GGCGCAGCGTCGCGCCAAGG-CAAAATCAGAA--CACAAGC-----------CTTTA-
AAAGGGCTTCGTGG---G-ATGGGGTGCTGTCG-CGCGCCATAT---CGATCGACACGACTCTCGGCAATGGATATCTCGGCTCTCGCATCGATGAAGAGCGCAGCGAAATGCGATACGTGGTGCGAATTGCAGAATCC-CGCGAACCATCGAGTCTTTGAACGCAAGTTGCGCCCGAGGCCAACCGGCCAAGGGCACGTCTGCCTGGGCGTCAAGCGTTTGTC-GCTCCGTGTCTAGTCT---CCC-
ATCGATGGATG--TGCTGGCGAAGGC-TCGGATGTGCATGGTGGCTCGTGTCCCTCGGTGGCGGCGGGCTGAAGGGCCGGTCATCTTCTCGTTGGCTGCG----AACAATAAGGGGTGGATAAAA------GAGAA--GGCCTGTGATATTGTGTC---GTG-----C-GTGCCT-GAGAG-ATGATCGTACCTTTTTAGGT-GATCCCAATTCATGCGTCGAT-----CCTCG---GATGGC--GTTTGG-
AAT--
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Dendrobium_kingianum TCGAGA-CCGAATATATCGAGCGA-TTCGGAGAACCGG-TGAGATACGCGGCGGCGATTGCCGTCGTAAGAAAGCCGTCCCG---GTCGTCGCCTSATCCCCTTTCGGGG-------CGGGGGCACGAYG-ARGGATGGATGAACAAACAAACC-GGCGCAGCTTCGCGCCAAGG-GAATATCGAAA--CACGAGC-----------CCTTC-GTCGGGCTCGGTGG---
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AAT--
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Goodyera_viridiflora --------------GATTGGATGACTTTTGACAACACG-TG-AGCAGTTGAYGGCGATTGCTGTCTATAGACA--CCGTCCAT---------CTATTGTCCCTTCTTGATTGGAGC--------TACAATGAAAAGATGGAAGGAAAAAATWACTCGGGCGCAGTTATGCGCCAAGG----
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AAT--

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Goodyera_procera -------------ACAT---------------------GTGAGCAGCCGACGGCGATTGCCGTCTGTAGACA--CCATCCAT---------CCATTGTCCCTTCTTGAT--------CGGAGATACAATGAAAAGATGGAAGGAGAAAAAACTC-GGCGCGGTTATGTGCCAAGG----
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ATT--

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Goodyera_brachyceras TCGAGACCCTAAAAGGATTGGATGACTTTTGACAACATG-TG-AGCAGTTGACGGCGATTGCTGTCT----ATAA-ACACCA-----TCCATC-TATTGTCCCTTCTTGATTGGAGC--------TACAATGAAAAGGTGGAAG-GAAAATAACTCGGGCGCAGTTATGCGCCAAGG----AATTATGTTGCATTAGCATCGATGGCTGTTCGC-
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Earina_valida TCGAGA-CCGAAACACATCGAGCGA-TTCGGAAACCCG-TAAAATAAGCGGCGGCGGCTGCCGTCGCGGAATGG-CCGTTCCG---ATCGTCGCCTCGTCGTTCC-----------GGGGGGCGCGACGAGAGGACGGATG-AAAATCAAACC-GGCGCAGCCCGCGCCAAGG-GAATATAGAAAAACACGAAC-----------CCCTC-GGTGGGTTCTGTGC---C-
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ATGATCTGGTGGATCACTCAT---------CAGACTTTTTCTTT-TTCATGAAAAAAGATTCAAG---------
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Earina_autumnalis TCGAGA-CCGAATATATCGAGCGA-TTCGGAAACCCG-TAAAATAAGTGGCGGCTGCTGCCGTCGCGGAATAG-CCGTTCCA---ATCGTTGCCTCCTCTGTTTCGG----------GGGGCGCGCGATG-AAGGACGGATGAAAACCCAAACC-GGCGCAGCATCGCGCCAAGG-GAACATGGAAAAACACGAAC-----------CCTTC-AGTGGGTTCTGTGC---T-
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---AATTTGTATTCTGAAATGCTCATATGATGATATCGTATATATCATATTCGTGGTTAAATTGTCAAAATTATTAGACTTTCTTCTC---------
GATATGTAATTATTTTTTCTTTTTTATACATATTGATATATACATAGGGAAAGTCGTGTGCAATGAAACTGCAAGCACGG---------------------------------

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CGATATAAA--GGAAAAGCG-ATTCTGGCTTC--AAAAGGAA-CTCTTATTCT-GATGAAG-AA-ATGGAAA---TTTCATCTTGT-GAATTTTTG-GCAATCTTAT-TTTCACTTTTGG-TTTCA-GCCTTATAGGATCCATATAA-AGCAATT-ACCCAACTA-TTCCTTTTCTT-TTCTGGGGTATTT-TTCAAG-TGTACTA-AAAAATCCTTTGGTA-GTAAGAAAT-
CAAATGCTAGAGAATTCATTTCTA-AT-AAATACTCTGA--CTAATAAATTAGATACC-GTAGCCCCAGTT-ATTTCTCTTATTGGATCATTGTCGAAAGCTCA-ATTTTGTACTGTATTGGGTAATCCTCTAAGTAAACCGA-TCTGGACCG-ATTTATCGGATTCTGATATTATTGATCGATTTTGT-CGGATATGTAGAAATCTTTGTC-ATTATCATAGCGGATCCTCAAAGAAGCA-
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ATATATACATAGGGAAAGCCGTGTGCAATGAAAACTGCAAGCACGGTTTGGGGAGGGATCTTTTTCTTATATAGCAACAA
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ATTTATCGGATTCTGATATTATTGATCGATTTTGT-CGGATATGTAGAAATCTTTGTC-ATTATCACAGC-GATCCTCAAAGAAGCA-G--
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CCCCATCCTATCCATTTGGAAATCTTGGTTCAAATACTTCAATCGCTAGGATCAAAGATAGTTCCTTCTTATGCATATTCTTGCGATTGTTTATTCCACGAATATCATAATTT-GAATAGTCTAGATTACTT-
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ATTTATCGGATTCTGATATTATTGATCGATTTTGT-CGGATATGTAGAAATCTTTGTC-
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ATTTATCGGATTCTGATATTATTGATCGATTTTGT-CGGATATGTAGAAATCTTTGTC-
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CCTTCTT-TGCAT-TTGTTGCGATTGATT-TTCCACGAATATCATAATTT-GAAGAGTAT-CATTACTT-CAAAGAAATCCATTCACGT-CTTTTCAAAAAGAAAGAAAATATTTTTTTGGTTCCTACATAATTTTTATGTATATGAATGCGAATATCTATTTCTGTTTCTTCGTAAAAAGTCTTCT-TATTTACG-ATCAACATCTTTTGGAGTCTTTCTT-GAGC-GAAAAA---TTTTTTATGTAAA-
AATTG-AATC-TATTATAGT-AGT-GTA-TTTTCATTCTT-TTCAGAGGATTC-TCTGGTTCC-TCAAAGATCCTTTC-AT-ACAT-TATGTT-CGATATCAA--GGAAAAGTA-ATTTTGGCTTC--AAAAGGAA-CTCTTATTCT-GATAAAG-AA-ATGGAAT---TTTCTTGTTGT-GAATTTTTG-GCAATTTTAT-TTTCACTTTTGG-TCTCA-ACCTTATAGGATCCATATAA-AGCAATT-
ACCCAACTA-TTCCTTCTCCT-TTCTGGGGTATTT-TTTAAG-TGTACAA-AAAAAAACTTTGGTA-GTAAGAAAT-CAAATGCTAGAGAATTCCTTTCTA-AT-AAATACTCTGA--CTAAGAAATTAGATACC-ATAGCCCCAGTT-ATTTCTCTTATTGGATCATTGTCGAAAGCTCG-ATTTTGTACTATATCGGGTCATCCTATTAGTAAACCAA-TCTGGACCG-
ATTTATCGGATTCTGATATTATTGATCGATTTTGT-CGGAAATGTAGGAATCTTTGTC-GTTATCACAGCGGATCCTCAAAAAAAAA-
GGTTTTGTATCGTATAAAGTATATAC----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------
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-----------------------------------------------------CCTTCTT-TGCAT-TTGTTGCGATTGATT-TTCCACGAATATCATAATTT-GAAGAGTAT-CATTACTT-CAAAGAAATCCATTCACGT-CTTTTCAAAAAGAAAGAAAATATTTTTTTGGTTCCTACATAATTTTTATGTATATGAATGCGAATATCTATTTCTGTTTCTTCGTAAAAAGTCTTCT-TATTTACG-
ATCAACATCTTTTGGAGTCTTTCTT-GAGC-GAAAAA---TTTTTTATGTAAA-AATTG-AATC-TATTATAGT-AGT-GTA-TTTTCATTCTT-TTCAGAGGATTC-TCTGGTTCC-TCAAAGATCCTTTC-AT-ACAT-TATGTT-CGATATCAA--GGAAAAGTA-ATTTTGGCTTC--AAAAGGAA-CTCTTATTCT-GATAAAG-AA-ATGGAAT---TTTCTTGTTGT-GAATTTTTG-
GCAATTTTAT-TTTCACTTTTGG-TCTCA-ACCTTATAGGATCCATATAA-AGCAATT-ACCCAACTA-TTCCTTCTCCT-TTCTGGGGTATTT-TTTAAG-TGTACAA-AAAAAAACTTTGGTA-GTAAGAAAT-CAAATGCTAGAGAATTCCTTTCTA-AT-AAATACTCTGA--CTAAGAAATTAGATACC-ATAGCCCCAGTT-ATTTCTCTTATTGGATCATTGTCGAAAGCTCG-
ATTTTGTACTATATCGGGTCATCCTATTAGTAAACCAA-TCTGGACCG-ATTTATCGGATTCTGATATTATTGATCGATTTTGT-CGGAAATGTAGGAATCTTTGTC-GTTATCACAGCGGATCCTCAAAAAAAAA-
GGTTTTGTATCGTATAAAGTATATAC----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------
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end;

BEGIN SETS;
	CHARPARTITION * matrices = 'Matrix in file "cymb_ITS1_2.nexus"' : 1-2614 , 'Matrix in file "cymbidium_matk.nexus"' : 2615-4507 ;
	charset 'Matrix in file "cymb_ITS1_2.nexus"' = 1-2614;
	charset 'Matrix in file "cymbidium_matk.nexus"' = 2615-4507;
END;

begin mrbayes;
	charset 'Matrix in file "cymb_ITS1_2.nexus"' = 1-2614;
	charset 'Matrix in file "cymbidium_matk.nexus"' = 2615-4507;
	partition matrices = 2: 'Matrix in file "cymb_ITS1_2.nexus"', 'Matrix in file "cymbidium_matk.nexus"';
	set partition = matrices;
	lset applyto = (1, 2)  nst=6 rates=invgamma;
	unlink statefreq=(all) revmat=(all) shape=(all) pinvar=(all);
	prset applyto=(all) ratepr=variable;
	mcmcp ngen= 10000000 relburnin=yes burninfrac=0.5 printfreq=1000  samplefreq=1000 nchains=4 savebrlens=yes;
	mcmc;
end;
```