เอกสารอ้างอิง

กมลทิพย์ สุวรรณเดช และ ดวงใจ ศุขเฉลิม. (2548). **การศึกษาอนุกรมวิธานของพืชวงศ์ขิง (Zingiberaceae) ในเขตพื้นที่ป่าทองผาภูมิ จังหวัดกาญจนบุรี.** วิทยานิพนธ์ปริญญาวิทยาศาตรมหาบัณฑิต สาขาวิชาชีววิทยาป่าไม้ บัณฑิตวิทยาลัย มหาวิทยาลัยเกษตรศาสตร์.

จิรนันท์ เตชะประสาน, ฉัตรชัย งามเรียบสกุล, ศิราวุธ กลิ่นบุหงา, ทยา เจนจิตติกุล, และ สุดสงวน สกลธนะชัย. (2548). การศึกษาความหลากหลายทางพันธุกรรมของพืชสกุลกระชายในประเทศไทยโดยใช้ลำดับเบสดีเอ็นเอจากคลอโรพลาสต์. ใน **การประชุมวิชาการประจำปีโครงการ RBT ครั้งที่ 9.** (หน้า 41). กรุงเทพฯ: สำนักงานกองทุนสนับสนุนการวิจัย; ศูนย์พันธุวิศวกรรมและเทคโนโลยีชีวภาพแห่งชาติ; สำนักงานพัฒนาวิทยาศาสตร์และเทคโนโลยีแห่งชาติ.

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ภาคผนวก

ภาคผนวก ก

ลำดับนิวคลีโอไทด์ส่วน ITS1 อยู่ในช่วงลำดับที่ 16-192 ส่วน 5.8S อยู่ในช่วงลำดับที่ 193-355 และส่วน ITS2 อยู่ในช่วงลำดับที่ 356-592

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                    ....| ....| ....| ....| ....| ....| ....| ....| ....| ....|
                              10        20        30        40        50
A. glabrum          TTGTTGA-GA GAGCATTGAA TGATG---GA TGGTTGTGAA TATGTTAACT
S. siliquesus       TTGTTGA-GA GAGCATAGAA TGATG---GG TGGTTGTGAA TGTGTCAATG
A. yunanense        TTGTCGA-GA GAGCGTTGAA CAACG---GA TGGTTGTGAA TGTGTCAATG
E. angustifolia     TTGTTGA-GA GAGCATTGAA TGATG---GA TGATTGTGAA TATGTCAACC
E. burttiana        TTGTTGA-GA GAGCATTGAA TGATG---GA TGATTGTGAA TATGTCAACC
E. chayaniana       TTGTTGA-GA GAGCATTGAA TGATG---GA TGGTTGTGAA TATGTCAGCT
E. curtisii         TTGTTGA-GA GAGCATTGAA TGATG---GA TGATTGTGAA TATGTCAACC
E. monophylla       TTGTTGA-GA GAGCATTGAA TGATGATGGA TGGTTGTGAA TATGTCAGCT
E. smithiae 8       TTGTTGA-GA GAGCATTGAA TGATG---GA TGGTTGTGAA TATGTAAACT
E. slahmong 9       TTGTTGA-GA GAGCATTGAA TGATG---GA TAGTTGTGAA TATGTCATCT
E. triloba 10       TTGTTGA-GA GAGCATTGAA TGATG---GA TGATTGTGAA TATGTCAGCT
E. triloba 11       TTGTTGA-GA GAGCATTGAA TGATG---GA TGATTGTGAA TATGTCAGCT
E. penangiana 12    TTGTTGA-GA GAGCATTGAA TGCTG---GA TGATTGTGAA TATGTCAACC
E. rugosa 13        TTGTTGA-GA GAGCATTGAA TGATG---GA TGATTGTGAA TATGTCAACC
E. elan 20          TTGTTGA-GA GAGCATTGAA TGATG---GA TGGTCGTGAA TATGTCAGCT
E. smithiae 2       TTGTTGA-GA GAGCATTGAA TGATG---GA TGATTGTGAA TATGTAAACT
E. exserta 24       TTGTTGA-GA GAGCATTGAA TGATG---GA TGATTGTGAA TATGTCAACC
E. exserta 25       TTGTTGA-GA GAGCATTGAA TGATG---GA TGATTGTGAA TATGTCAACC
E. smithiae 28      TTGTTGA-GA GAGCATTGAA TGATG---GA TGATTGTGAA TATGTAAACT
E. triloba 29       TTGTTGA-GA GAGCATTGAA TGATG---GA TGGTTGTGAA TATGTCAGCT
E. trangensis 33    TTGTTGA-GA GAGCATTGAA TGATG---GA TGATTGTGAA TATGTCAACC
E. wandokthong 31   TTGTTGA-GA GAGCACTGGA TAATG---GA TGGTTGCGAA CGTGTCAACG
E. wandokthong 32   TTGTTGA-GA GAGCACTGGA TAATG---GA TGGTTGCGAA CGTGTCAACG
E. triloba 34       TTGTTGA-GA GAGCATTGAA TGATG---GA TGATTGTGAA TATGTCAGCT
E. johoensis 36     TTGTTGA-GA GAGCATTGAG AGAGC---GA TGATTGAGAA TAGGTCAACA
E. exserta 37       TTGTTGA-GA GAGCATTGAA TGATG---GA TGATTGTGAA TATGTCAACC
E. trangensis 35    TTGTTGA-GA GAGCATTGAA TGATG---GA TGATTGTGAA TATGTCAACC
E. poonsakiana 40   TTGTTGA-GA GAGCATTGAA TGATG---GA TGATTGTGAA TATGTCAACC
E. monophylla 43    TTGTTGA-GA GAGCATTGAA TGATGATGGA TGGTTGTGAA TATGTCAGCT
E. slahmong 44      TTGTTGA-GA GAGCATTGAA TGATG---GA TAGTTGTGAA TATGTCATCT
E. monophylla 45    TTGTTGA-GA GAGCATTGAA TGATGATGGA TGGTTGTGAA TATGTCAGCT
E. latiflora 46     TTGTTGA-GA GAGCATTGAA TGATG---GA TGGTTGTGAA TATGTCAGCT
E. triloba 48       TTGTTGA-GA GAGCATTGAA TGATG---GA TGGTTGTGAA TATGTCAGCT
E. triloba 49       TTGTTGA-GA GAGCATTGAA TGATG---GA TGGTTGTGAA TATGTCAGCT
E. triloba 50       TTGTTGA-GA GAGCATTGAA TGATG---GA TGGTTGTGAA TATGTCAGCT
E. triloba 51       TTGTTGA-GA GAGCATTGAA TGATG---GA TGGTTGTGAA TATGTCAGCT
E. angustifolia 56  TTGTTGA-GA GAGCATTGAA TGATG---GA TGATTGTGAA TATGTCAACC
E. triloba 59       TTGTTGA-GA GAGCATTGAA TGATG---GA TGGTTGTGAA TATGTCAGCT
E. tratensis 62     TTGTTGA-GA GAGCATTGAA TGATG---GA TGGTTGTGAA TATGTCAGCT
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                    ....| ....| ....| ....| ....| ....| ....| ....| ....| ....|
                              60        70        80        90       100
A. glabrum          TGCCCCTTCC TT--GCCCCA TGTTGGTGGG CATTTGACTG TAGCTCGGTG
S. siliquesus       TGTCCCTTTC GTT-GCCCCA TGTTAGTGGG CGATTAACCC TAGCTCGGTG
A. yunanense        TGCCCCTTTC CTTGGCCCCA TGTTGGCGGC TGACTTACCC TAGCTGGGTG
E. angustifolia     TGCCCCTTCC TT--GCCCCA TGTTGGTGGG CAATTGACTG TAGCTCGGTG
E. burttiana        TGCCCCCTCC TT--GCCCCA TGTTGGTGGG CAATTGACTG TAGCTCGGTG
E. chayaniana       TGCCCCTTCT TT--GCCCCA TGTTAGTGGG CAATCGACTG TAACTCGGTG
E. curtisii         TGCCCCTTCC TT--GCCCCA TGTTGGTGGG CAATTGACTG TAGCTCGGTG
E. monophylla       TGCCCCTTCT TT--GCCCCA TGTTAGTGGG CAATTGACTG TAACTCGGTG
E. smithiae 8       TGCCCCTTCC TT--GCCCCC TGTTGGTGGG CAATTGACTG TAGCTCGGTG
E. slahmong 9       TGCCCCTTCC TT--GCCCCA TGTTGGTGGG CAATTGACTG TAGCTCGGTG
E. triloba 10       TGCCCTTTCT TT--GCCCCA TGCTAGTGGG CAATCGACTG TAACTCGGTG
E. triloba 11       TGCCCTTTCT TT--GCCCCA TGCTAGTGGG CAATCGACTG TAACTCGGTG
E. penangiana 12    TGCCCCTTCC TT--GCCCCA TGTTGGTGGG CAATTGACTG TAGCTCCGTG
E. rugosa 13        TGCCCCTTCC TT--GCCCCA TGTTGGTGGG CAATTGACTG TAGCTCGGTG
E. elan 20          TGCCCCTTCT TT--GCCCCA TGTTAGTTGG CAATTGACTG TAACTCGGTG
E. smithiae 2       TGTCCCTTCC TT--GCCCCA TGTTGGTGGG CAATTGACTG TAGCTCGGTG
E. exserta 24       TGCCCCTTCC TT--GCCCCA TGTTGGTGGG CAATTGACTG TAGCTCGGTG
E. exserta 25       TGCCCCTTCC TT--GCCCCA TGTTGGTGGG CAATTGACTG TAGCTCGGTG
E. smithiae 28      TGTCCCTTCC TT--GCCCCA TGTTGGTGGG CAATTGACTG TAGCTCGGTG
E. triloba 29       TGCCCTTTCT TT--GCCCCA TGCTAGTGGG CAATCGACTG TAACTCGGTG
E. trangensis 33    TGCCCCTTCC TT--GCCCCA TGTTGGTGGG CAATTGACTG TAGCTCGGTG
E. wandokthong 31   TGCCCCTTTC CTCGGCCCCA TGTTGGTGGC CGACTGACCA AAGCTCGGTG
E. wandokthong 32   TGCCCCTTTC CTCGGCCCCA TGTTGGTGGC CGACTGACCA AAGCTCGGTG
E. triloba 34       TGCCCCTTCT TT--GCCCCA TGCTAGTGGG CAATCGACTG TAACTCGGTG
E. johoensis 36     TTACCTTTCC TT--GCCCCA TCCTGGTGGC CAATTGGTGG TCAATTGGTG
E. exserta 37       TGCCCCTTCC TT--GCCCCA TGTTGGTGGG CAATTGACTG TAGCTCGGTG
E. trangensis 35    TGCCCCTTCC TT--GCCCCA TGTTGGTGGG CAATTGACTG TAGCTCGGTG
E. poonsakiana 40   TGCCCCTTCC TT--GCCCCA TGTTGGTGGG CAATTGACTG TAGCTCGGTG
E. monophylla 43    TGCCCCTTCT TT--GCCCCA TGTTAGTGGG CAATTGACTG TAACTCGGTG
E. slahmong 44      TGCCCCTTCC TT--GCCCCA TGTTGGTGGG CAATTGACTG TAGCTCGGTG
E. monophylla 45    TGCCCCTTCT TT--GCCCCA TGTTAGTGGG CAATTGACTG TAACTCGGTG
E. latiflora 46     TGCCCTTTCT TT--GCCCCA TGTTGGTGGG CAATTGACTG TAGCTCGGTG
E. triloba 48       TGCCCTTTCT TT--GCCCCA TGCTAGTGGG CAATCGACTG TAACTCGGTG
E. triloba 49       TGCCCTTTCT TT--GCCCCA TGCTAGTGGG CAATCGACTG TAACTCGGTG
E. triloba 50       TGCCCTTTCT TT--GCCCCA TGCTAGTGGG CAATCGACTG TAACTCGGTG
E. triloba 51       TGCCCTTTCT TT--GCCCCA TGCTAGTGGG CAATCGACTG TAACTCGGTG
E. angustifolia 56  TGCCCCTTCC TT--GCCCCA TGTTGGTGGG CAATTGACTG TAGCTCGGTG
E. triloba 59       TGCCCTTTCT TT--GCCCCA TGCTAGTGGG CAATCGACTG TAACTCGGTG
E. tratensis 62     TGCCCCTTCT TT--GCCCCA TGTTAGTGGG CAATCGACTG TAACTCGGTG
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                    ....| ....| ....| ....| ....| ....| ....| ....| ....| ....|
                              110       120       130       140       150
A. glabrum          CGATCAGCAC CAAGGAACAA --TGAACTTA GAAGCAGAGG GCCCTCGACG
S. siliquesus       CGATCTGCAC CAAGGAACAA --TGAACTCA GAAGCAGAGG GCCCTCGGCG
A. yunanense        CGATCGGCAC CAAGGAACAA --TGAACTCA GAAGCAAAGG GGCCTCGGGG
E. angustifolia     CGATCAGCAC CAAGGAACAA --TGAACTTA GAAGCAGAGG GCCCTCGACG
E. burttiana        CGATCAGCAC CAAGGAACAA AATGAACTTA GAAGCAGAGG GCCCTCGACG
E. chayaniana       CGAGCAGCAC CAAGGAACAA --CGAACTTA GAAGCAGAGG GCCCTCACCG
E. curtisii         CGATCAGCAC CAAGGAACAA --TGAACTTA GAAGCAGAGG GCCCTCGACG
E. monophylla       CGAGCAGCAC CAAGGAACAA --TGAACTTA GAAGCAGAGG GCCCTCGCCG
E. smithiae 8       CGAGCAGCAC CAAGGAACAA --TGAACTTA GAAGCAGAGG GCCCTCGCCG
E. slahmong 9       CGATCAGCAC CAAGGAACAA --TGAACTTA GAAGCAGCGG GCCCTCGACG
E. triloba 10       CGAGCAGCAC CAAGGAACAA --TGAACTTA GAAGCAGAGG GCCCTCGCCG
E. triloba 11       CGAGCAGCAC CAAGGAACAA --TGAACTTA GAAGCAGAGG GCCCTCGCCG
E. penangiana 12    CGATCAGCAC CAAGGAACAA --TGAACTTA GAAGCAGAGG GCCCTCGACG
E. rugosa 13        CGATCAGCAC CAAGGAACAA --TGAACTTA GAAGCAGAGG GCCCTCGACG
E. elan 20          CGAGCAGCAC CAAGGAACAA --CGAACTTA GAAGCAGAGG GCCCTCGCCG
E. smithiae 2       CGAGCAGCAC CAAGGAATAA --TGAACTTA GAAGCAGAGG GCCCTCGCCG
E. exserta 24       CGATCAGCAC CAAGGAACAA --TGAACTTA GAAGCAGAGG GCCCTCGACG
E. exserta 25       CGATCAGCAC CAAGGAACAA --TGAACTTA GAAGCAGAGG GCCCTCGACG
E. smithiae 28      CGAGCAGCAC CAAGGAATAA --TGAACTTA GAAGCAGAGG GCCCTCGCCG
E. triloba 29       CGAGCAGCAC CAAGGAACAA --TGAACTTA GAAGCAGAGG GCCCTCGCCG
E. trangensis 33    TGATCAGCAC CAAGGAACAA AATGAACTTA GAAGCAGAGG GCCCTCGACG
E. wandokthong 31   CGATCGGCAC CAAGGAATAA --TGAACTCA GAAGCAGAGG GCCCTCGGTG
E. wandokthong 32   CGATCGGCAC CAAGGAATAA --TGAACTCA GAAGCAGAGG GCCCTCGGTG
E. triloba 34       CGAGCAGCAC CAAGGAACAA --TGAACTTA GAAGCAGAGG GCCCTCGCCG
E. johoensis 36     GGATCTGCGC CAGGTCACCA --CCAAGGAA TAAGCAGAGG GCCCTCGGAG
E. exserta 37       CGATCAGCAC CAAGGAACAA --TGAACTTA GAAGCAGAGG GCCCTCGACG
E. trangensis 35    TGATCAGCAC CAAGGAACAA AATGAACTTA GAAGCAGAGG GCCCTCGACG
E. poonsakiana 40   CGATCAGCAC CAAGGAACAA --TGAACTTA GAAGCAGAGG GCCCTCGACG
E. monophylla 43    CGAGCAGCAC CAAGGAACAA --TGAACTTA GAAGCAGAGG GCCCTCGCCG
E. slahmong 44      CGATCAGCAC CAAGGAACAA --TGAACTTA GAAGCAGCGG GCCCTCGACG
E. monophylla 45    CGAGCAGCAC CAAGGAACAA --TGAACTTA GAAGCAGAGG GCCCTCGCCG
E. latiflora 46     CGATCAGCAC CAAGGAACAA --TGAACTTA GAAGCAGAGG GCCCTCGACG
E. triloba 48       CGAGCAGCAC CAAGGAACAA --TGAACTTA GAAGCAGAGG GCCCTCGCCG
E. triloba 49       CGAGCAGCAC CAAGGAACAA --TGAACTTA GAAGCAGAGG GCCCTCGCCG
E. triloba 50       CGAGCAGCAC CAAGGAACAA --TGAACTTA GAAGCAGAGG GCCCTCGCCG
E. triloba 51       CGAGCAGCAC CAAGGAACAA --TGAACTTA GAAGCAGAGG GCCCTCGCCG
E. angustifolia 56  CGATCAGCAC CAAGGAACAA --TGAACTTA GAAGCAGAGG GCCCTCGACG
E. triloba 59       CGAGCAGCAC CAAGGAACAA --TGAACTTA GAAGCAGAGG GCCCTCGCCG
E. tratensis 62     CGAGCAGCAC CAAGGAACAA --CGAACTTA GAAGCAGAGG GCCCTCGCCG
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                    ....| ....| ....| ....| ....| ....| ....| ....| ....| ....|
                          160       170       180       190       200
A. glabrum          TGTGCGG-GG -AGCCCTATG CATCGGAGAT GCCTCGAAAT CAAATGACTC
S. siliquesus       TGCGTGG-GG -AGCCCAATG CATCAGAGAT GCCTCAAAAT CAAATGACTC
A. yunanense        TGTGCGCTGG GAGCCTATTG CATCAGAGAT GA-TCGGATT TGAATGACTC
E. angustifolia     TGCGCGG-GG GAACTTTATG CATCGGAGAT GCCTCAGAAT CAAATGACTC
E. burttiana        TGCGCGG-GG GAACCTTATG CATCGGAGAT GCCTCGGAAT CAAATGACTC
E. chayaniana       TGCGCGG-GG -AGCCTTATG CGTCGGAGAT GCCTCGGAAT CAAATGACTC
E. curtisii         TGCGCGG-GG -AGCCTTATG CATCGAAGAT GCCTCGGAAT CAAATGACTC
E. monophylla       TGCGCGG-GG -AGCCTTATG CGTCGGAGAT GCCTCGGAAT CAAATGACTC
E. smithiae 8       TGCGCGG-GG -AGCCTTATG CGTCGGAGAT GCCTCGGAAT CAAATGACTC
E. slahmong 9       TGCGCGA-GG -TGCCTTATG CGTCGAAGAT GCCTCGGAAT CAAATGACTC
E. triloba 10       TGCGCGG-GG -AGCCTTATG CGTCGGAGAT GCCTCGGAAT CAAATGACTC
E. triloba 11       TGCGCGG-GG -AGCCTTATG CGTCGGAGAT GCCTCGGAAT CAAATGACTC
E. penangiana 12    TGCGCGG-GG GAACCTTATG CATCGGAGAT GCCTCGGAAT CAAATGACTC
E. rugosa 13        TGCGCGG-GG GAACCTTATG CATCGGAGAT GCTTCGGAAT CAAATGACTC
E. elan 20          TGCGCGG-GG -AGCCTTATG CGTCGGAGAT GCCTCGGAAT CAAATGACTC
E. smithiae 2       TGCGCGG-GG -AGCCTTATG CGTCGGAGAT GCCTCGGAAT CAAATGACTC
E. exserta 24       TGCGCGG-GG -AGCCTTATG CATCGAAGAT GCCTCGGAAT CAAATGACTC
E. exserta 25       TGCGCGG-GG -AGCCTTATG CATCGAAGAT GCCTCGGAAT CAAATGACTC
E. smithiae 28      TGCGCGG-GG -AGCCTTATG CGTCGGAGAT GCCTCGGAAT CAAATGACTC
E. triloba 29       TGCGCGG-GG -AGCCTTATG CGTCGGAGAT GCCTCGGAAT CAAATGACTC
E. trangensis 33    TGCGCGG-GG GAACCTTATG CATCGGAGAT GCCTCGGAAT CAAATGACTC
E. wandokthong 31   TGCGCGG-GG GAGCCCATTG CGTCGGAGAT GG-TCGGAAT CGAATGACTC
E. wandokthong 32   TGCGCGG-GG GAGCCCATTG CGTCGGAGAT GG-TCGGAAT CGAATGACTC
E. triloba 34       TGCGCGG-GG -AGCCTTATG CGTCGGAGAT GCCTCGGAAT CAAATGACTC
E. johoensis 36     GGCCCGG-GG -AGCGTTAGG CGTGCGAGAT GCATCGGAAT CAAATGACTC
E. exserta 37       TGCGCGG-GG -AGCCTTATG CATCGAAGAT GCCTCGGAAT CAAATGACTC
E. trangensis 35    TGCGCGG-GG GAACCTTATG CATCGGAGAT GCCTCGGAAT CAAATGACTC
E. poonsakiana 40   TGCGCGG-GG -AGCCTTATG CATCGAAGAT GCCTCGGAAT CAAATGACTC
E. monophylla 43    TGCGCGG-GG -AGCCTTATG CGTCGGAGAT GCCTCGGAAT CAAATGACTC
E. slahmong 44      TGCGCGA-GG -TGCCTTATG CGTCGAAGAT GCCTCGGAAT CAAATGACTC
E. monophylla 45    TGCGCGG-GG -AGCCTTATG CGTCGGAGAT GCCTCGGAAT CAAATGACTC
E. latiflora 46     TGCGCGG-GG GAACCTTATG CATCGGAGAT GCCTCGGAAT CAAATGACTC
E. triloba 48       TGCGCGG-GG -AGCCTTATG CGTCGGAGAT GCCCCGGAAT CAAATGACTC
E. triloba 49       TGCGCGG-GG -AGCCTTATG CGTCGGAGAT GCCCCGGAAT CAAATGACTC
E. triloba 50       TGCGCGG-GG -AGCCTTATG CGTCGGAGAT GCCCCGGAAT CAAATGACTC
E. triloba 51       TGCGCGG-GG -AGCCTTATG CGTCGGAGAT GCCCCGGAAT CAAATGACTC
E. angustifolia 56  TGCGCGG-GG GAACTTTATG CATCGGAGAT GCCTCAGAAT CAAATGACTC
E. triloba 59       TGCGCGG-GG -AGCCTTATG CGTCGGAGAT GCCCCGGAAT CAAATGACTC
E. tratensis 62     TGCGCGG-GG -AGCCTTATG CGTCGGAGAT GCCTCGGAAT CAAATGACTC
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	210	220	230	240	250
A. glabrum	TCGGCAATGG	ATATCTCGGC	TCTTGCATCG	ATGAAGAACG	TAGTGAAATG
S. siliquesus	TCGGCAATGG	ATATCTCGGC	TCTTGCATCG	ATGAAGAACG	TAGTGAAATG
A. yunanense	TCGGCAATGG	ATATCTCGGC	TCTTGCATCG	ATGAAGAACG	TAGTGAAATG
E. angustifolia	TCGGCAATGG	ATATCTCGGC	TCTTGCATCG	ATGAAGAACG	TAGTGAAATG
E. burttiana	TCGGCAATGG	ATATCTCGGC	TCTTGCATCG	ATGAAGAACG	TAGTGAAATG
E. chayaniana	TCGGCAATGG	ATATCTCGGC	TCTTGCATCG	ATGAAGAACG	TAGTGAAATG
E. curtisii	TCGGCAATGG	ATATCTCGGC	TCTTGCATCG	ATGAAGAACG	TAGTGAAATG
E. monophylla	TCGGCAATGG	ATATCTCGGC	TCTTGCATCG	ATGAAGAACG	TAGTGAAATG
E. smithiae 8	TCGGCAATGG	ATATCTCGGC	TCTTGCATCG	ATGAAGAACG	TAGTGAAATG
E. slahmong 9	TCGGCAATGG	ATATCTCGGC	TCTTGCATCG	ATGAAGAACG	TAGTGAAATG
E. triloba 10	TCGGCAATGG	ATATCTCGGT	TCTTGCATCG	ATGAAGAACG	TAGTGAAATG
E. triloba 11	TCGGCAATGG	ATATCTCGGC	TCTTGCATCG	ATGAAGAACG	TAGTGAAATG
E. penangiana 12	TCGGCAATGG	ATATCTCGGC	TCTTGCATCG	ATGAAGAACG	TAGTGAAATG
E. rugosa 13	TCGGCAATGG	ATATCTCGGC	TCTTGCATCG	ATGAAGAACG	TAGTGAAATG
E. elan 20	TCGGCAATGG	ATATCTCGGC	TCTTGCATCG	ATGAAGAACG	TAGTGAAATG
E. smithiae 2	TCGGCAATGG	ATATCTCGGC	TCTTGCATCG	ATGAAGAACG	TAGTGAAATG
E. exserta 24	TCGGCAATGG	ATATCTCGGC	TCTTGCATCG	ATGAAGAACG	TAGTGAAATG
E. exserta 25	TCGGCAATGG	ATATCTCGGC	TCTTGCATCG	ATGAAGAACG	TAGTGAAATG
E. smithiae 28	TCGGCAATGG	ATATCTCGGC	TCTTGCATCG	ATGAAGAACG	TAGTGAAATG
E. triloba 29	TCGGCAATGG	ATATCTCGGC	TCTTGCATCG	ATGAAGAACG	TAGTGAAATG
E. trangensis 33	TCGGCAATGG	ATATCTCGGC	TCTTGCATCG	ATGAAGAACG	TAGTGAAATG
E. wandokthong 31	TCGGCAATGG	ATATCTCGGC	TCTTGCATCG	ATGAAGAACG	TAGTGAAATG
E. wandokthong 32	TCGGCAATGG	ATATCTCGGC	TCTTGCATCG	ATGAAGAACG	TAGTGAAATG
E. triloba 34	TCGGCAATGG	ATATCTCGGC	TCTTGCATCG	ATGAAGAACG	TAGTGAAATG
E. johoensis 36	TCGGCAATGG	ATATCTCGGC	TCTTGCATCG	ATGAAGAACG	TAGTGAAATG
E. exserta 37	TCGGCAATGG	ATATCTCGGC	TCTTGCATCG	ATGAAGAACG	TAGTGAAATG
E. trangensis 35	TCGGCAATGG	ATATCTCGGC	TCTTGCATCG	ATGAAGAACG	TAGTGAAATG
E. poonsakiana 40	TCGGCAATGG	ATATCTCGGC	TCTTGCATCG	ATGAAGAACG	TAGTGAAATG
E. monophylla 43	TCGGCAATGG	ATATCTCGGC	TCTTGCATCG	ATGAAGAACG	TAGTGAAATG
E. slahmong 44	TCGGCAATGG	ATATCTCGGC	TCTTGCATCG	ATGAAGAACG	TAGTGAAATG
E. monophylla 45	TCGGCAATGG	ATATCTCGGC	TCTTGCATCG	ATGAAGAACG	TAGTGAAATG
E. latiflora 46	TCGGCAATGG	ATATCTCGGC	TCTTGCATCG	ATGAAAAACG	TAGTGAAATG
E. triloba 48	TCGGCAATGG	ATATCTCGGC	TCTTGCATCG	ATGAAGAACG	TAGTGAAATG
E. triloba 49	TCGGCAATGG	ATATCTCGGC	TCTTGCATCG	ATGAAGAACG	TAGTGAAATG
E. triloba 50	TCGGCAATGG	ATATCTCGGC	TCTTGCATCG	ATGAAGAACG	TAGTGAAATG
E. triloba 51	TCGGCAATGG	ATATCTCGGC	TCTTGCATCG	ATGAAGAACG	TAGTGAAATG
E. angustifolia 56	TCGGCAATGG	ATATCTCGGC	TCTTGCATCG	ATGAAGAACG	TAGTGAAATG
E. triloba 59	TCGGCAATGG	ATATCTCGGC	TCTTGCATCG	ATGAAGAACG	TAGTGAAATG
E. tratensis 62	TCGGCAATGG	ATATCTCGGC	TCTTGCATCG	ATGAAGAACG	TAGTGAAATG

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                    ....| ....| ....| ....| ....| ....| ....| ....| ....| ....|
                              260       270       280       290       300
A. glabrum          CGATACTTGG TGTGAATTGC AGAATCTCGT GAACCATTGA GTCTTTGAAC
S. siliquesus       CGATACTTGG TGTGAATTGC AGAATCTCGT GAACCATTGA GTCTTTGAAC
A. yunanense        CGATACTTGG TGTGAATTGC AGAATCTCGT GAACCATTGA GTCTTTGAAC
E. angustifolia     CGATACTTGG TGTGAATTGC AGAATCTCGT GAACCATTGA GTCTTTGAAC
E. burttiana        CGATACTTGG TGTGAATTGC AGAATCTCGT GAACCATTGA GTCTTTGAAC
E. chayaniana       CGATACTTGG TGTGAATTGC AGAATCTCGT GAACCATTGA GTCTTTGAAC
E. curtisii         CGATACTTGG TGTGAATTGC AGAATCTCGT GAACCATTGA GTCTTTGAAC
E. monophylla       CGATACTTGG TGTGAATTGC AGAATCTCGT GAACCATTGA GTCTTTGAAC
E. smithiae 8       CGATACTTGG TGTGAATTGC AGAATCTCGT GAACCATTGA GTCTTTGAAC
E. slahmong 9       CGATACTTGG TGTGAATTGC AGAATCTCGT GAACCATTGA ATCTTTGAAC
E. triloba 10       CGATACTTGG TGTGAATTGC AGAATCTCGT GAACCATTGA GTCTTTGAAC
E. triloba 11       CGATACTTGG TGTGAATTGC AGAATCTCGT GAACCATTGA GTCTTTGAAC
E. penangiana 12    CGATACTTGG TGTGAATTGC AGAATCTCGT GAACCATTGA GTCTTTGAAC
E. rugosa 13        CGATACTTGG TGTGAATTGC AGAATCTCGT GAACCATTGA  GTCTTTGAAC
E. elan 20          CGATACTTGG TGTGAATTGC AGAATCTCGT GAACCATTGA GTCTTTGAAC
E. smithiae 2       CGATACTTGG TGTGAATTGC AGAATCTCGT GAACCATTGA GTCTTTGAAC
E. exserta 24       CGATACTTGG TGTGAATTGC AGAATCTCGT GAACCATTGA GTCTTTGAAC
E. exserta 25       CGATACTTGG TGTGAATTGC AGAATCTCGT GAACCATTGA GTCTTTGAAC
E. smithiae 28      CGATACTTGG TGTGAATTGC AGAATCTCGT GAACCATTGA GTCTTTGAAC
E. triloba 29       CGATACTTGG TGTGAATTGC AGAATCTCGT GAACCATTGA GTCTTTGAAC
E. trangensis 33    CGATACTTGG TGTGAATTGC AGAATCTCGT GAACCATTGA GTCTTTGAAC
E. wandokthong 31   CGATACTTGG TGTGAATTGC AGAATCTCGT GAACCATTGA GTCTTTGAAC
E. wandokthong 32   CGATACTTGG TGTGAATTGC AGAATCTCGT GAACCATTGA GTCTTTGAAC
E. triloba 34       CGATACTTGG TGTGAATTGC AGAATCTCGT GAACCATTGA GTCTTTGAAC
E. johoensis 36     CGATACTTGG TGTGAATTGC AGAATCTCGT GAACCATTGA GTCTTTGAAC
E. exserta 37       CGATACTTGG TGTGAATTGC AGAATCTCGT GAACCATTGA GTCTTTGAAC
E. trangensis 35    CGATACTTGG TGTGAATTGC AGAATCTCGT GAACCATTGA GTCTTTGAAC
E. poonsakiana 40   CGATACTTGG TGTGAATTGC AGAATCTCGT GAACCATTGA GTCTTTGAAC
E. monophylla 43    CGATACTTGG TGTGAATTGC AGAATCTCGT GAACCATTGA GTCTTTGAAC
E. slahmong 44      CGATACTTGG TGTGAATTGC AGAATCTCGT GAACCATTGA ATCTTTGAAC
E. monophylla 45    CGATACTTGG TGTGAATTGC AGAATCTCGT GAACCATTGA  GTCTTTGAAC
E. latiflora 46     CGATACTTGG TGTGAATTGC AAAATCTCGT GAACCATTGA GTCTTTGAAC
E. triloba 48       CGATACTTGG TGTGAATTGC AGAATCTCGT GAACCATTGA GTCTTTGAAC
E. triloba 49       CGATACTTGG TGTGAATTGC AGAATCTCGT GAACCATTGA GTCTTTGAAC
E. triloba 50       CGATACTTGG TGTGAATTGC AGAATCTCGT GAACCATTGA GTCTTTGAAC
E. triloba 51       CGATACTTGG TGTGAATTGC AGAATCTCGT GAACCATTGA GTCTTTGAAC
E. angustifolia 56  CGATACTTGG TGTGAATTGC AGAATCTCGT GAACCATTGA GTCTTTGAAC
E. triloba 59       CGATACTTGG TGTGAATTGC AGAATCTCGT GAACCATTGA GTCTTTGAAC
E. tratensis 62     CGATACTTGG TGTGAATTGC AGAATCTCGT GAACCATTGA GTCTTTGAAC
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	310	320	330	340	350
A. glabrum	GCAAGTTGTG	CCCGAGGCCT	TGTGGCCGAG	GGCACGCCTG	CTTGGGCGTC
S. siliquesus	GCAAGTTGTG	CCCGAGGCCT	TGTGGCCGAG	GGCACGCCTG	CTTGGGCGTC
A. yunanense	GCAAGTTGTG	CCCGAGGCTT	TGTGGCCGAG	GGCACGCCTG	CTTGGGCGTC
E. angustifolia	GCAAGTTGTG	CCCGAGGCCT	TGTGGCCGAG	GGCACGCCTG	CTTGGGCGTC
E. burttiana	GCAAGTTGTG	CCCGAGGCCT	TGTGGCCGAG	GGCACGCCTG	CTTGGGCGTC
E. chayaniana	GCAAGTTGTG	CCCGAGGCCT	TGTGGCCGAG	GGCACGCCTG	CTTGGGCGTC
E. curtisii	GCAAGTTGTG	CCCGAGGCCT	TGTGGCCGAG	GGCACGCCTG	CTTGGGCGTC
E. monophylla	GCAAGTTGTG	CCCGAGGCCT	TGTGGCCGAG	GGCACGCCTG	CTTGGGCGTC
E. smithiae 8	GCAAGTTGTG	CTCGAGGCCT	TGTGGCCGAA	AGCACGCCTG	CTTGGGCGTC
E. slahmong 9	GCAAGTTGTG	CCCGAGGCCT	TGTGGCCGAG	GGCACGCCTG	CTTGGGCGTC
E. triloba 10	GCAAGTTGTG	CCCGAGGCCT	TGTGGCCGAG	GGCACGCCTG	CTTGGGCGTC
E. triloba 11	GCAAGTTGTG	CCCGAGGCCT	TGTGGCCGAG	GGCACGCCTG	CTTGGGCGTC
E. penangiana 12	GCAAGTTGTG	CCCGAGGCCT	TGTGGCCGAG	GGCACGCCTG	CTTGGGCGTC
E. rugosa 13	GCAAGTTGTG	CCCGAGGCCT	TGTGGCCGAG	GGCACGCCTG	CTTGGGCGTC
E. elan 20	GCAAGTTGTG	CCCGAGGCCT	TGTGGTCGAG	GGCACGCCTG	CTTGGGCGTC
E. smithiae 2	GCAAGTTGTG	CCCGAGGCCT	TGTGGCCGAG	AGCACGCCTG	CTTGGGCGTC
E. exserta 24	GCAAGTTGTG	CCCGAGGCCT	TGTGGCCGAG	GGCACGCCTG	CTTGGGCGTC
E. exserta 25	GCAAGTTGTG	CCCGAGGCCT	TGTGGCCGAG	GGCACGCCTG	CTTGGGCGTC
E. smithiae 28	GCAAGTTGTG	CCCGAGGCCT	TGTGGCCGAG	AGCACGCCTG	CTTGGGCGTC
E. triloba 29	GCAAGTTGTG	CCCGAGGCCT	TGTGGCCGAG	GGCACGCCTG	CTTGGGCGTC
E. trangensis 33	GCAAGTTGTG	CCCGAGGCCT	TGTGGCCGAG	GGCACGCCTG	CTTGGGCGTC
E. wandokthong 31	GCAAGTTGTG	CCCGAGGCTT	TGTGGCCGAG	GGCACGCCTG	CTTGGGCGTC
E. wandokthong 32	GCAAGTTGTG	CCCGAGGCTT	TGTGGCCGAG	GGCACGCCTG	CTTGGGCGTC
E. triloba 34	GCAAGTTGTG	CCCGAGGCCT	TGTGGCCGAG	GGCACGCCTG	CTTGGGCGTC
E. johoensis 36	GCAAGTTGTG	CCCGAGGCCT	TGTGGCCGAG	GGCACGCCTG	CTTGGGCGTC
E. exserta 37	GCAAGTTGTG	CCCGAGGCCT	TGTGGCCGAG	GGCACGCCTG	CTTGGGCGTC
E. trangensis 35	GCAAGTTGTG	CCCGAGGCCT	TGTGGCCGAG	GGCACGCCTG	CTTGGGCGTC
E. poonsakiana 40	GCAAGTTGTG	CCCGAGGCCT	TGTGGCCGAG	GGCACGCCTG	CTTGGGCGTC
E. monophylla 43	GCAAGTTGTG	CCCGAGGCCT	TGTGGCCGAG	GGCACGCCTG	CTTGGGCGTC
E. slahmong 44	GCAAGTTGTG	CCCGAGGCCT	TGTGGCCGAG	GGCACGCCTG	CTTGGGCGTC
E. monophylla 45	GCAAGTTGTG	CCCGAGGCCT	TGTGGCCGAG	GGCACGCCTG	CTTGGGCGTC
E. latiflora 46	GCAAGTTGTG	CCCGAGGCCT	TGTGGCCGAG	GGCACGCCTG	CTTGGGCGTC
E. triloba 48	GCAAGTTGTG	CCCGAGGCCT	TGTGGCCGAG	GGCACGCCTG	CTTGGGCGTC
E. triloba 49	GCAAGTTGTG	CCCGAGGCCT	TGTGGCCGAG	GGCACGCCTG	CTTGGGCGTC
E. triloba 50	GCAAGTTGTG	CCCGAGGCCT	TGTGGCCGAG	GGCACGCCTG	CTTGGGCGTC
E. triloba 51	GCAAGTTGTG	CCCGAGGCCT	TGTGGCCGAG	GGCACGCCTG	CTTGGGCGTC
E. angustifolia 56	GCAAGTTGTG	CCCGAGGCCT	TGTGGCCGAG	GGCACGCCTG	CTTGGGCGTC
E. triloba 59	GCAAGTTGTG	CCCGAGGCCT	TGTGGCCGAG	GGCACGCCTG	CTTGGGCGTC
E. tratensis 62	GCAAGTTGTG	CCCGAGGCCT	TGTGGCCGAG	GGCACGCCTG	CTTGGGCGTC

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                    ....|....|....|....|....|....|....|....|....|....|
                              360        370        380        390        400
A. glabrum          ATGGCATCGT CGCCTTTGCT CCTTGCTTTG CTGGTGCCAA GCGCGGAAAT
S. siliquesus       ATGGAATCGT CGCTTTTGCT CCTTGCTTTG CTGGTGCGAA ATGCGAAAAT
A. yunanense        ATGGCT-CAT CGCCTTTGCT CCTTGCTTTG TTGGTGTCAA GTGCGGAAAT
E. angustifolia     ATGGCATCGT CGCCTTTGCT CCTTGCTTTG CTGGTGCCAA GCGCGGAAAT
E. burttiana        ATGGCATCGT CGCCTTTGCT CCTTGCTTTG CTGGTGCCAA GCGCGGAAAT
E. chayaniana       ATGGCATCGT CGCCTTTGCT CCTTGCTTTG CTGGTGCCAA GTGCGGAAAT
E. curtisii         ATGGCATCGT CGCCTTTGCT CCTTGCTTTG CTGGTGCCAA GCGTCGAAAT
E. monophylla       ATGGCATCGT CGCCTTTGCT CCTTGCTTTG CTGGTGCCAA GCGCGGAAAT
E. smithiae 8       ATGGCATCGT CGCCTTTGCT CCTTGCTTTG CTGGTGCCAA GAGCGGAAAT
E. slahmong 9       ATGGCATCGT CGCCTTTGCT CCTTGCTTTG CTGGTGCCAA GTGCGGAAAT
E. triloba 10       ATGGCATCGT CGCCTTTGCT CCTTGCTTTG CTGGTGCCAA GCGCGGAAAT
E. triloba 11       ATGGCATCGT CGCCTTTGCT CCTTGCTTTG CTGGTGCCAA GCGCGGAAAT
E. penangiana 12    ATGGCATCGT CGCCTTTGCT CCTTGCTTTG CTGGTGCCAA GTGCGGAAAT
E. rugosa 13        ATGGCATCGT CGCCTTTGCT CCTTGCTTTG CTGGTGCCAA GCGCGGAAAT
E. elan 20          ATGGCATCGT CGCCTTTGCT CCTTGCTTTG CTGGTGCCAA GCGCGGAAAT
E. smithiae 2       ATGGCATCGT CGCCTTTGCT CCTTGCTTTG CTGGTGCCAA GAGCGAAAAT
E. exserta 24       ATGGCATCGT CGCCTTTGCT CCTTGCTTTG CTGGTGCCAA GCGTCGAAAT
E. exserta 25       ATGGCATCGT CGCCTTTGCT CCTTGCTTTG CTGGTGCCAA GCGTCGAAAT
E. smithiae 28      ATGGCATCGT CGCCTTTGCT CCTTGCTTTG CTGGTGCCAA GAGCGAAAAT
E. triloba 29       ATGGCATCGT CGCCTTTGCT CCTTGCTTTG ATGGTGCCAA GCGCGGAAAT
E. trangensis 33    ATGGCATCGC CGCCTTTGCT CCTTGCTTTG CTGGTGTCAA GCGCGGAAAT
E. wandokthong 31   ATGGCAACAT CGCCTTTGCT CTTTGCT--- --GGTGCGAA GCGCGGAAAT
E. wandokthong 32   ATGGCAACAT CGCCTTTGCT CTTTGCT--- --GGTGCGAA GCGCGGAAAT
E. triloba 34       ATGGCATCGT CGCCTTTGCT CCTTGCTTTG CTGGTGCCAA GCGCGGAAAT
E. johoensis 36     ATGGCATCGT CGCCTTTGCT CCTTGCTTTG CTGGTGCCGA GCGCGGAAAT
E. exserta 37       ATGGCATCGT CGCCTTTGCT CCTTGCTTTG CTGGTGCCAA GCGTCGAAAT
E. trangensis 35    ATGGCATCGC CGCCTTTGCT CCTTGCTTTG CTGGTGTCAA GCGCGGAAAT
E. poonsakiana 40   ATGGCATCGT CGCCTTTGCT CCTTGCTTTG CTGGTGCCAA GCGTCGAAAT
E. monophylla 43    ATGGCATCGT CGCCTTTGCT CCTTGCTTTG CTGGTGCCAA GCGCGGAAAT
E. slahmong 44      ATGGCATCGT CGCCTTTGCT CCTTGCTTTG CTGGTGCCAA GTGCGGAAAT
E. monophylla 45    ATGGCATCGT CGCCTTTGCT CCTTGCTTTG CTGGTGCCAA GCGCGGAAAT
E. latiflora 46     ATGGCATCGT CGCCTTTGCT CCTTGCTTTG CTGGTGCCAA GCGCGGAAAT
E. triloba 48       ATGGCATCGT CGCCTTTGCT CCTTGCTTTG ATGGTGCCAA GCGCGGAAAT
E. triloba 49       ATGGCATCGT CGCCTTTGCT CCTTGCTTTG ATGGTGCCAA GCGCGGAAAT
E. triloba 50       ATGGCATCGT CGCCTTTGCT CCTTGCTTTG ATGGTGCCAA GCGCGGAAAT
E. triloba 51       ATGGCATCGT CGCCTTTGCT CCTTGCTTTG ATGGTGCCAA GCGCGGAAAT
E. angustifolia 56  ATGGCATCGT CGCCTTTGCT CCTTGCTTTG CTGGTGCCAA GCGCGGAAAT
E. triloba 59       ATGGCATCGT CGCCTTTGCT CCTTGCTTTG CTGGTGCCAA GCGCGGAAAT
E. tratensis 62     ATGGCATCGT CGCCTTTGCT CCTTGCTTTG CTGGTGCCAA GCGCGGAAAT
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                  ....| ....| ....| ....| ....| ....| ....| ....| ....| ....|
                      410       420       430       440       450
A. glabrum        TGGCCTTGTG TGCCC--TCG GGCACAGTCG GTTGAAGAGT GGGTAGTCGA
S. siliquesus     TGGCCTTGTG TGCCC--TCG GGCATAGTCG GTTGAAGAGT GGGTAGGCGG
A. yunanense      TGGCCTCGTG TGCCCCCTCG GGCACAGTCG GTCGAAGAGC GGGTAGTCGG
E. angustifolia   TGGCCTCGTG TGCCG--TCG GGCACAGTCG GTTGAAGAGT GGGTAGTCGG
E. burttiana      TGGCCTCGTG TGCCA--TCG GGCACAGTCG GTTGAAGAGT GGGTAGTCGG
E. chayaniana     TGACCTCGTG TGCCC--TTG GGCACAGTCG GTTGAAGAGT GGGTAGTCGG
E. curtisii       TGGCCTCGTG TGCCG--TCG GGCACAGTCG GTTGAAGAGT GGGTAGTCGG
E. monophylla     TGACCTCGTG TGCCC--TCG GGCACAGTCG GTTGAAGAGT GGGTAGTCGG
E. smithiae 8     TGGCCTCGTG TGCCC--TCG GGCACAGTCG GTTGAAGAGT GGGCAGTCGG
E. slahmong 9     TAGCCTTGTG TGCCC--TCG GGCACAGCCG GTTGAAGAGT GGGTAGTCGG
E. triloba 10     TGACCTCGTG TGCCC--TGG GGCACAGTCG GTTGAAGAGT GGGCAGTCGG
E. triloba 11     TGACCTCGTG TGCCC--TGG GGCACAGTCG GTTGAAGAGT GGGCAGTCGG
E. penangiana 12  TGACCTCGTG TGCCG--TCG AGCACAGTCG GTTGAAGAGT GGGTAGTCGA
E. rugosa 13      TGGCCTCGTG TGCCG--TCG AGCACAGTCG GTTGAAGAGT GGGTAGTCGG
E. elan 20        TGACCTCGTG TGCCC--TTG GGCACAGTCG GTTGAAGAGT GGGTAGTCGG
E. smithiae 2     TGGCCTCGTG TGCCC--TCG GGCACAGTCG GTTGAAGAGT GGGCAGTCGG
E. exserta 24     TGGCCTCGTG TGCCG--TCG GGCACAGTCG GTTGAAGAGT GGTTATTCGG
E. exserta 25     TGGCCTCGTG TGCCG--TCG GGCACAGTCG GTTGAAGAGT GGTTATTCGG
E. smithiae 28    TGGCCTCGTG TGCCC--TCG GGCACAGTCG GTTGAAGAGT GGGCAGTCGG
E. triloba 29     TGACCTCGTG TGCCC--TGG GGCACAGTCG GTTGAAGAGT GGGCAGTCGG
E. trangensis 33  TGGCCTCGTG TGCCA--TCG GGCACAGTCG GTTGAAGAGT GGGTAGTCGG
E. wandokthong 31 TGGCCTCGTG TGCCC--TCG GGCACACTCG GTCGAAGAGC GGGCAGTCGG
E. wandokthong 32 TGGCCTCGTG TGCCC--TCG GGCACACTCG GTCGAAGAGC GGGCAGTCGG
E. triloba 34     TGACCTCGTG TGCCC--TGG GGCACAGTCG GTTGAAGAGT GGGCAGTCGG
E. johoensis 36   TGGCCTCGTG TGCCG--TCG GGCACAGTCG GTTGAAGAGT GGGTAGTCGG
E. exserta 37     TGGCCTCGTG TGCCG--TCG GGCACAGTCG GTTGAAGAGT GGTTATTCGG
E. trangensis 35  TGGCCTCGTG TGCCA--TCG GGCACAGTCG GTTGAAGAGT GGGTAGTCGG
E. poonsakiana 40 TGGCCTCGTG TGCCG--TCG GGCACAGTCG GTTGAAGAGT GGGTAGTCGG
E. monophylla 43  TGACCTCGTG TGCCC--TCG GGCACAGTCG GTTGAAGAGT GGGTAGTCGG
E. slahmong 44    TAGCCTTGTG TGCCC--TCG GGCACAGCCG GTTGAAGAGT GGGTAGTCGG
E. monophylla 45  TGACCTCGTG TGCCC--TCG GGCACAGTCG GTTGAAGAGT GGGTAGTCGG
E. latiflora 46   TGGCCTCGTG TGCCG--TCG GGCACAGTCG GTTGAAGAGT GGGTAGTCGG
E. triloba 48     TGACCTCGTG TGCCC--TGG GGCACAGTCG GTTGAAGAGT GGGCAGTCGG
E. triloba 49     TGACCTCGTG TGCCC--TGG GGCACAGTCG GTTGAAGAGT GGGCAGTCGG
E. triloba 50     TGACCTCGTG TGCCC--TGG GGCACAGTCG GTTGAAGAGT GGGCAGTCGG
E. triloba 51     TGACCTCGTG TGCCC--TGG GGCACAGTCG GTTGAAGAGT GGGCAGTCGG
E. angustifolia 56 TGGCCTCGTG TGCCG--TCG GGCACAGTCG GTTGAAGAGT GGGTAGTCGG
E. triloba 59     TGACCTCGTG TGCCC--TGG GGCACAGTCG GTTGAAGAGT GGGCAGTCGG
E. tratensis 62   TGACCTCGTG TGCCC--TTG GGCACAGTCG GTTGAAGAGT GGGTAGTCGG
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	....| ....| ....| ....| ....| ....| ....| ....| ....| ....|
	460 470 480 490 500
A. glabrum	CAATCGTCGG GCACGATGGG TGTTGGTCGC CTT-GTGCGT GAACTGAACA
S. siliquesus	CAATCATCGG GCGCGATGGG TGTTGGTCGC CCT-GTGCGT GAACTGAACA
A. yunanense	CAGTCGTCGG GCGCGATGGG TGCTGGTCAC CCTTGTGCGT GAATAGAACG
E. angustifolia	CAATTGTTGG GACCGATGGG TGTTGGTCGC CCC-GTGCGT GAATTGAACG
E. burttiana	CAATTGTTGG GACCGATGGG TGTTGGTCGC CCC-GTGCGT GAATTGAACG
E. chayaniana	CAATTGTTGG GACCGATGGG TGTTGGTCGC CCC-GTGCGT GAATTGAACG
E. curtisii	CAATTGTTGG GACCGATGGG TGTTGGTCGC CCC-GTGCGT GAATTGAACG
E. monophylla	CAATTGTTGG GACCGATGGG TGTTGGTCGC CCC-GTGCGT GAATTGAACG
E. smithiae 8	CAATTGTTGG GACCGATGGG TGTTGGTCGC CCT-GTGCGT GAATTGAACG
E. slahmong 9	CAATTGTTGG GACCGATGGG TGTTGGTCGC CCG-GTGCGT GAATTGAACG
E. triloba 10	CAATTGTTGG GACCGATGGG TGTTGGTCGC CCC-GTGCGT GAATTGAACG
E. triloba 11	CAATTGTTGG GACCGATGGG TGTTGGTCGC CCC-GTGCGT GAATTGAACG
E. penangiana 12	CAATTGTTGG GACCGATGGG TGTTGGTCGC CCC-GTGCGT GAATTGAACG
E. rugosa 13	CAATTGTTGG GATCGATGGG TGTTGGTCGC CCC-GTGCGT GAATTGAACG
E. elan 20	CAATTGTTGG GACCGATGGG TGTTGGTCGC CCC-GTGCGT GAATTGAACG
E. smithiae 2	CAATTGTTGG GACCGATGGG TGTTGGTCGC CCT-GTGCGT GAATTGAACG
E. exserta 24	CAATTGTTGG GACCGATGGG TGTTGGTCGC CCC-GTGCGT GAATTGAACG
E. exserta 25	CAATTGTTGG GACCGATGGG TGTTGGTCGC CCC-GTGCGT GAATTGAACG
E. smithiae 28	CAATTGTTGG GACCGATGGG TGTTGGTCGC CCT-GTGCGT GAATTGAACG
E. triloba 29	CAATTGTTGG GACCGATGGA TGTTGGTCGC CCC-GTGCGT GAATTGAACG
E. trangensis 33	CAATTGTTGG GACCGATGGG TGTTGGTCGC CCC-GTGCGT GAATTGAACG
E. wandokthong 31	CAGTCGTCGG GCGCGATGGG TGCTGGTCAC CCT-GCACGT GAATAGAACG
E. wandokthong 32	CAGTCGTCGG GCGCGATGGG TGCTGGTCAC CCT-GCACGT GAATAGAACG
E. triloba 34	CAATTGTTGG GACCGATGGG TGTTGGTCGC CCC-GTGCGT GAATTGAACG
E. johoensis 36	CAATTGTTGG GACCGATGGG TGTTGGTCGC CCC-GTGCGT GAATTGAACG
E. exserta 37	CAATTGTTGG GACCGATGGG TGTTGGTCGC CCC-GTGCGT GAATTGAACG
E. trangensis 35	CAATTGTTGG GACCGATGGG TGTTGGTCGC CCC-GTGCGT GAATTGAACG
E. poonsakiana 40	CAATTGTTGG GACCGATGGG TGTTGGTCGC CCC-GTGCGT GAATTGAACG
E. monophylla 43	CAATTGTTGG GACCGATGGG TGTTGGTCGC CCC-GTGCGT GAATTGAACG
E. slahmong 44	CAATTGTTGG GACCGATGGG TGTTGGTCGC CCG-GTGCGT GAATTGAACG
E. monophylla 45	CAATTGTTGG GACCGATGGG TGTTGGTCGC CCC-GTGCGT GAATTGAACG
E. latiflora 46	CAATTGTTGG GACCGATGGG TGTCGGTCGC CCC-GTGCGT GAATTGAACG
E. triloba 48	CAATTGTTGG GACCGATGGG TGTTGGTCGC CCC-GTGCGT GAATTGAACG
E. triloba 49	CAATTGTTGG GACCGATGGG TGTTGGTCGC CCC-GTGCGT GAATTGAACG
E. triloba 50	CAATTGTTGG GACCGATGGG TGTTGGTCGC CCC-GTGCGT GAATTGAACG
E. triloba 51	CAATTGTTGG GACCGATGGG TGTTGGTCGC CCC-GTGCGT GAATTGAACG
E. angustifolia 56	CAATTGTTGG GACCGATGGG TGTTGGTCGC CCC-GTGCGT GAATTGAACG
E. triloba 59	CAATTGTTGG GACCGATGGG TGTTGGTCGC CCC-GTGCGT GAATTGAACG
E. tratensis 62	CAATTGTTGG GACCGATGGG TGTTGGTCGC CCC-GTGCGT GAATTGAACG

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                    ....| ....| ....| ....| ....| ....| ....| ....| ....| ....|
                              510       520       530       540       550
A. glabrum          TCGTCCCCGT CATGTTGGGA TGAGTCCTCA AGA---GACC C-TGTGTGAT
S. siliquesus       TCGTCCCCGT CGTGTTGGCA TGAGTCCTCA AGAAGAGACC C-TATGTGAT
A. yunanense        TCGCCCTCGA TGTGTTAGGA TGTGTCCTCA AGA---GACC C-AGTGCGAT
E. angustifolia     TCGTCCCCGT TGCGTCGGAA TGAATCCTCA AGA---GACC C-TGTCTGAT
E. burttiana        TCGTCCCCGT TGCGTCGGAA TGAGTCCTCA AGA---GACC C-TGTCTGAT
E. chayaniana       TCGTCCCCAT TGCGTCGGAA TGAATCCTCA AGA---GACC C-CGTGTGAT
E. curtisii         TCGTCCCCGT TGCGTCGGAA TGAGTCCTCA AGA---GACC C-TGTCTGAT
E. monophylla       TCGTCCCCGT TGCGTCGGAA TGAGTCCTCA AGA---GACC C-CGTGTGAT
E. smithiae 8       TCGTCCCCGT TGCGTCGGAA TGAGTCCTCA AGA---GACC C-TGTGTGAT
E. slahmong 9       TCGTCCCTGT TGCGTTGGAA TGAGTCCTCA AGA---GACC C-TGTGTGAT
E. triloba 10       TCGTCCCCGT TGCGTCGGAA TGAGTCCTCA AGA---GACC C-CGTGTGAT
E. triloba 11       TCGTCCCCGT TGCGTCGGAA TGAGTCCTCA AGA---GACC C-CGTGTGAT
E. penangiana 12    TCGTCCCCGT TGCGTCGGAA TGAGTCCTCA AGA---GACC C-TGTCTGAT
E. rugosa 13        TCGTCCCCGT TGCGTCGGAA TGAGTCCTCA AGA---GACC C-TGTCTGAT
E. elan 20          TCGTCCCCGT TGCGTCGGAA TGAATCCTCA AGA---GACC C-CGTG----
E. smithiae 2       TCGTCCCCAT TGCGTCGGAA TGAGTCCTCA AGA---GACC C-TGTGTGAT
E. exserta 24       TCGTCCCCGT TGCGTCGGAA TGAGTCCTCA AGA---GACC C-TGTCTGAT
E. exserta 25       TCGTCCCCGT TGCGTCGGAA TGAGTCCTCA AGA---GACC C-TGTCTGAT
E. smithiae 28      TCGTCCCCAT TGCGTCGGAA TGAGTCCTCA AGA---GACC C-TGTGTGAT
E. triloba 29       TCGTCCCCGT TGCGTCGGAA TGAGTCCTCA AGA---GACC C-CGTGTGAT
E. trangensis 33    TCGTCCCCGT TGCGTCGGAA TGAGTCCTCA AGA---GACC C-TGTCTGAT
E. wandokthong 31   TCGCCCTCGA CGTGTTGGGA CGTGTCCTCG AGA---GACC C-TGTGCGAT
E. wandokthong 32   TCGCCCTCGA CGTGTTGGGA CGTGTCCTCG AGA---GACC C-TGTGCGAT
E. triloba 34       TCGTCCCCGT TGCGTCGGAA TGAGTCCTCA AGA---GACC C-CGTGTGAT
E. johoensis 36     TCGTCCCCGT TGCGTCGGAA TGAGTCCTCA AGA---GACC C-TGTCTGAT
E. exserta 37       TCGTCCCCGT TGCGTCGGAA TGAGTCCTCA AGA---GACC C-TGTCTGAT
E. trangensis 35     TCGTCCCCGT TGCGTCGGAA TGAGTCCTCA AGA---GACC C-TGTCTGAT
E. poonsakiana 40   TCGTCCCCGT TGCGTCGGAA TGAGTCCTCA AGA---GACC C-TGTCTGAT
E. monophylla 43    TCGTCCCCGT TGCGTCGGAA TGAGTCCTCA AGA---GACC C-CGTGTGAT
E. slahmong 44      TCGTCCCTGT TGCGTTGGAA TGAGTCCTCA AGA---GACC C-TGTGTGAT
E. monophylla 45    TCGTCCCCGT TGCGTCGGAA TGAGTCCTCA AGA---GACC C-CGTGTGAT
E. latiflora 46     TCGTCCTCGT TGCGTCGGAA TGAGTCCTCA AGA---GACC C-TGTCTGAT
E. triloba 48       TCGTCCCCGT TGCGTCGGAA TGAGTCCTCA AGA---GACC C-CGTGTGAT
E. triloba 49       TCGTCCCCGT TGCGTCGGAA TGAGTCCTCA AGA---GACC C-CGTGTGAT
E. triloba 50       TCGTCCCCGT TGCGTCGGAA TGAGTCCTCA AGA---GACC C-CGTGTGAT
E. triloba 51       TCGTCCCCGT TGCGTCGGAA TGAGTCCTCA AGA---GACC C-CGTGTGAT
E. angustifolia 56  TCGTCCCCGT TGCGTCGGAA TGAATCCTCA AGA---GACC C-TGTCTGAT
E. triloba 59       TCGTCCCCGT TGCGTCGGAA TGAGTCCTCA AGA---GACC C-CGTGTGAT
E. tratensis 62     TCGTCCCCGT TGCGTCGGAA TGAATCCTCA AGA---GACC C-CGTGTGAT
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                    ....| ....| ....| ....| ....| ....| ....| ....| ....| ....|
                              560       570       580       590       600
A. glabrum          TG-CGGTGCC -ACGTGAAAG TG-CTGTGTC CATCATTATA TTGTGGCCCC
S. siliquesus       TG-CGGCGTC -GTGGGAAAG TG-CCGTGTC CATCTG---A TTGTGGCCCC
A. yunanense        TTGTGGCATC -GCGTGAAAG TG-CCGTGTT CGTTGG---A TTGTGGCCCC
E. angustifolia     TG-CGGCATC -GTGCGAAAG TG-TCGTGTC CTTCAT---A TTGTGGCCCC
E. burttiana        TG-CGGCATC -GTGCGAAAG TGTCCGTGTC CTTCAT---A TTGTGGCCCC
E. chayaniana       TG-CGGCATC -GCGTGGAAG CG-TCGTGTG CATCAT---A TTGTGGCCCC
E. curtisii         TG-CGGCATC -GTGTGAAAG TG-CCGTGTC CTTCAT---A TTGTGGCCCC
E. monophylla       TG-CGACATC -GTGCGGAAG CG-TCGTGTC CATCAT---A TTGTGGCCCC
E. smithiae 8       TG-CGGCATC -GTGTGGAAG TG-TCGTGTC CATCAT---A TTGTGGCCCC
E. slahmong 9       TG-CGGCATC -GTGAGGAAG TG-TCATGTC CATTAT---A TTGTGGCCCC
E. triloba 10       TG-CGGCATC -GCGTGGAAG CG--CGTGTC CATCAT---A TTGTGGCCCC
E. triloba 11       TG-CGGCATC -GCGTGGAAG CG--CGTGTC CATCAT---A TTGTGGCCCC
E. penangiana 12    TG-CGGCATC -ATG------ ---------- ---------- ----------
E. rugosa 13        TG-CAGCATC -GTGCGAAAG TG-CCGTGTC CTTCAT---A TTGTGGCCCC
E. elan 20          ---------- ---------- ---------- ---------- ----------
E. smithiae 2       TG-CGGCATC -GTGTGGAAG TG-CCGTGTC CATCAT---A TTGTGGCCCC
E. exserta 24       TG-CGGCATC -GTGTGAAAG TG-CCGTGTC CTTCAT---A TTGTGGCCCC
E. exserta 25       TG-CGGCATC -GTGTGAAAG TG-CCGTGTC CTTCAT---A TTGTGGCCCC
E. smithiae 28      TG-CGGCATC -GTGTGGAAG TG-CCGTGTC CATCAT---A TTGTGGCCCC
E. triloba 29       TG-CGGCATC -GCGTGGAAG CG--CGTGTC CATCAT---A TTGTGGCCCC
E. trangensis 33    TG-CGGCATC -GTGCGAAAG TG-CCGTGTC CTTCAT---A TTGTGGCCCC
E. wandokthong 31   TG-TGGCACC -GTGCGAAAG TG-TCATGCC CGTCGG---A TTGTGGCCCC
E. wandokthong 32   TG-TGGCACC -GTGCGAAAG TG-TCATGCC CGTCGG---A TTGTGGCCCC
E. triloba 34       TG-CGGCATC -GCGTGGAAG CG--CGTGTC CATCAT---A TTGTGGCCCC
E. johoensis 36     TA-CGGCATC AGTGTGAAAG TG-TCGTGTC CTTCAT---A TTGTGGCCCC
E. exserta 37       TG-CGGCATC -GTGTGAAAG TG-CCGTGTC CTTCAT---A TTGTGGCCCC
E. trangensis 35    TG-CGGCATC -GTGCGAAAG TG-CCGTGTC CTTCAT---A TTGTGGCCCC
E. poonsakiana 40   TG-CGGCATC -GTGTGAAAG TG-CCGTGTC CTTCAT---A TTGTGGCCCC
E. monophylla 43    TG-CGACATC -GTGCGGAAG CG-TCGTGTC CATCAT---A TTGTGGCCCC
E. slahmong 44      TG-CGGCATC -GTGAGGAAG TG-TCATGTC CATTAT---A TTGTGGCCCC
E. monophylla 45    TG-CGACATC -GTGCGGAAG CG-TCGTGTC CATCAT---A TTGTGGCCCC
E. latiflora 46     TG-CGGCATC -GTGCGAAAG TG-CCGTGTC CTTCAT---A TTGTGGCCCC
E. triloba 48       TG-CGGCATC -GCGTGGAAG CG--CGTGTC CATCAT---A TTGTGGCCCC
E. triloba 49       TG-CGGCATC -GCGTGGAAG CG--CGTGTC CATCAT---A TTGTGGCCCC
E. triloba 50       TG-CGGCATC -GCGTGGAAG CG--CGTGTC CATCAT---A TTGTGGCCCC
E. triloba 51       TG-CGGCATC -GCGTGGAAG CG--CGTGTC CATCAT---A TTGTGGCCCC
E. angustifolia 56  TG-CGGCATC -GTGCGAAAG TG-TCGTGTC CTTCAT---A TTGTGGCCCC
E. triloba 59       TG-CGGCATC -GCGTGGAAG CG--CGTGTC CATCAT---A TTGTGGCCCC
E. tratensis 62     TG-CGGCATC -GCGTGGAAG CG--CGTGTC CATCAT---A TTGTGGCCCC
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ภาคผนวก ข

เรียงลำดับนิวคลีโอโทด์ส่วนส่วนจีน *mat*K อยู่ในช่วงลำดับ 146-1,500

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                    ....| ....|  ....| ....|  ....| ....|  ....| ....|  ....| ....|
                         10         20         30         40         50
S. siliquosus       TCCACTTCTC TTTCAAGAAT ATATTTACGT ATTTGCTTAT GATCATGGGT
A. yunnanense       ---------- ---------- ---------- ---------- ----------
A. glabrum          ---------- ---------- ---------- ---------- ----------
E. chayaniana 3     TCCACTTCTC TTTCAAGAAT ATATTTACGT ATTTGCTTAT GATCATGGGT
E. exserta 5        TCCACTTCTC TTTCAAGAAT ATATTTACGT ATTTGCTTAT GATCATGGGT
E. triloba 11       TCCACTTCTC TTTCAAGAAT ATATTTACGT ATTTGCTTAT GATCATGGGT
E. wandokthong      TCCACTTCTC TTTCAAGAAT ATATTTACGT ATTTGCTTAT GATCATGGGT
E. triloba 34       TCCACTTCTC TTTCAAGAAT ATATTTACGT ATTTGCTTAT GATCATGGGT
E. limiana 10       ---------- ---------- ---------- ---------- ----------

                    ....| ....|  ....| ....|  ....| ....|  ....| ....|  ....| ....|
                         60         70         80         90        100
S. siliquosus       TAAATAGTTC GATTTTTTAT GAACCCCAAA ACTCCTTGGG TTATGACAAT
A. yunnanense       ---------- ---------- ---------- ---------- ----------
A. glabrum          ---------- ---------- ---------- ---------- ----------
E. chayaniana 3     TAAATAGTTC GATTTTTTAG GAACCCCAAA ACTCCTTGGG TTATGACAAT
E. exserta 5        TAAATAGTTC GATTTTTTAT GAACCCCAAA ACTCCTTGGG TTATGACAAT
E. triloba 11       TAAATAGTTC GATTTTTTAT GAACCCCAAA ACTCCTTGGG TTATGACAAT
E. wandokthong      TAAATAGTTC GATTTTTTAT GAACCCCAAA ACTCCTTGGG TTATGACAAT
E. triloba 34       TAAATAGTTC GATTTTTTAT GAACCCCAAA ACTCCTTGGG TTATGACAAT
E. limiana 10       ---------- ---------- ---------- ---------- ----------

                    ....| ....|  ....| ....|  ....| ....|  ....| ....|  ....| ....|
                        110        120        130        140        150
S. siliquosus       AAATTGAGTT CAGTACTTGT GAAACGTTTA ATTATTCGAA TGTATCAAAA
A. yunnanense       ---------- ---------- ---------- ---------- ----------
A. glabrum          ---------- ---------- ---------- ---------- ----------
E. chayaniana 3     AAATTTAGTT CAGTACTTGT GAAACGTTTA ATTATTCGAA TGTATCAAAA
E. exserta 5        AAATTTAGTT CAGTACTTGT GAAACGTTTA ATTATTCGAA TGTATCAAAA
E. triloba 11       AAATTTAGTT CAGTACTTGT GAAACGTTTA ATTATTCGAA TGTATCAAAA
E. wandokthong      AAATTTAGTT CAGTACTTGT GAAACGTTTA ATTATTCGAA TGTATCAAAA
E. triloba 34       AAATTTAGTT CAGTACTTGT GAAACGTTTA ATTATTCGAA TGTATCAAAA
E. limiana 10       ---------- ---------- ---------- ---------- ----------

                    ....| ....|  ....| ....|  ....| ....|  ....| ....|  ....| ....|
                        160        170        180        190        200
S. siliquosus       AAATTATTTG ATTTATTCGG TTAATGATAT TTACCAAAAT ATATTTGTTG
A. yunnanense       AAATTATTGG ATTTATTCGA TTAATGATAT TTACCAAAAT ATATTTGTTG
A. glabrum          AAATTATTGG ATTTATTCGG TTAATGATAT TTACCAAAAT GTATTTGTTG
E. chayaniana 3     AAATTATTGG ATTTATTCGG TTAATGATAT TTACCAAAAT ATATTTGTTG
E. exserta 5        AAATTATTGG ATTTATTCGG TTAATGATAT TTACCAAAAT ATATTTGTTG
E. triloba 11       AAATTATTGG ATTTATTCGG TTAATGATAT TTACCAAAAT ATATTTGTTG
E. wandokthong      AAATTATTGG ATTTATTCGG TTAATGATAT TTACCAAAAT ATATTTGTTG
E. triloba 34       AAATTATTGG ATTTATTCGG TTAATGATAT TTACCAAAAT ATATTTGTTG
E. limiana 10       ---------- ---------- ---------- ---------- ----------
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                    ....| ....|  ....| ....|  ....| ....|  ....| ....|  ....| ....|
                          210        220        230        240        250
S. siliquosus       GACATAACAA TTATTTTTAT TTTAATTTTT TTTCTCAGAT TCTATCTGAA
A. yunnanense       GGCATAACAA TTATTTTTAT TTTCATTTTT TTTCTCAGAT TCTATCTGAA
A. glabrum          GGCATAACAA TTATTTTTAT TTTCATTTTT TTTCTCAGAT TCTATCTGAA
E. chayaniana 3     GGCATAACAA TTATTTTTAT TTTAATTTTT TTTCTCAGAT TCTATCTGAA
E. exserta 5        GGCATAACAA TTATTTTTAT TTTAATTTTT TTTCTCAGAT TCTATCTGAA
E. triloba 11       GGCATAACAA TTATTTTTAT TTTCATTTTT TTTCTCAGAT TCTATCTGAA
E. wandokthong      GGCATAACAA TTATTTTTAT TTTAATTTTT TTTCTCAGAT TCTATCTGAA
E. triloba 34       GGCATAACAA TTATTTTTAT TTTCATTTTT TTTCTCAGAT TCTATCTGAA
E. limiana 10       ---------- ---------- ---------- ---------- ----------

                    ....| ....|  ....| ....|  ....| ....|  ....| ....|  ....| ....|
                          260        270        280        290        300
S. siliquosus       GGTTTTGCAG TCATTGTAGA AATTCCATTT TCGCTGCAGT TAATATCTTC
A. yunnanense       GGTTTTGCAG TCATTGTAGA AATTCCATTT TCGCTGCAGT TAATATCTTC
A. glabrum          GGTTTTGCAG TCATTGTAGA AATTCCATTT TCGCTGCAGT TAATATCTTC
E. chayaniana 3     GGTTTTGCAG TCATTGTAGA AATTCCATTT TCGCTGCAGT TAATATCTTC
E. exserta 5        GGTTTTGCAG TCATTGTAGA AATTCCATTT TCGCTGCAGT TAATATCTTC
E. triloba 11       GGTTTTGCAG TCATTGTAGA AATTCCATTT TCGCTGCAGT TAATATCTTC
E. wandokthong      GGTTTTGCAG TCATTGTAGA AATTCCATTT TCGCTGCAGT TAATATCTTC
E. triloba 34       GGTTTTGCAG TCATTGTAGA AATTCCATTT TCGCTGCAGT TAATATCTTC
E. limiana 10       ---------- ---------- ---------- ---------- ----------

                    ....| ....|  ....| ....|  ....| ....|  ....| ....|  ....| ....|
                          310        320        330        340        350
S. siliquosus       CCTTGAAGAA AAAGAAATAC CAAAATCTCA CAATTTACAA TCTAGTCATT
A. yunnanense       CCTTGAAGAA AAAGAAATAC CAAAATCTCA CAATTTACAA TCTAGTCATT
A. glabrum          CCTTGAAGAA AAAGAAATAC CAAAATATCA CAATTTACAA TCTAGTCATT
E. chayaniana 3     CCTTGAAGAA AAAGAAATAC CAAAATCTCA CAATTTACAA TCTAGTCATT
E. exserta 5        CCTTGAAGAA AAAGAAATAC CAAAATCTCA CAATTTACAA TCTAGTCATT
E. triloba 11       CCTTGAAGAA AAAGAAATAC CAAAATCTCA CAATTTACAA TCTAGTCATT
E. wandokthong      CCTTGAAGAA AAAGAAATAC CAAAATCTCA CAATTTACAA TCTAGTCATT
E. triloba 34       CCTTGAAGAA AAAGAAATAC CAAAATCTCA CAATTTACAA TCTAGTCATT
E. limiana 10       ---------- ---------- ---------- ---------- ----------

                    ....| ....|  ....| ....|  ....| ....|  ....| ....|  ....| ....|
                          360        370        380        390        400
S. siliquosus       CAATATTTCC TTTTTTAGAG GATAAATTAT TGCATTTAAA TTATCTGTCC
A. yunnanense       CAATATTTCC TTTTTTAGAG GATAAATTAT TGCATTTAAA TTATCTGTCC
A. glabrum          CAATATTTCC TTTTTTAGAG GATAAATTAT TGCATTTAAA TTATCTGTCC
E. chayaniana 3     CAATATTTCC TTTTTTAGAG GATAAATTAT TGCATTTAAA TTATCTGTCC
E. exserta 5        CAATATTTCC TTTTTTAGAG GATAAATTAT TGCATTTAAA TTATCTGTCC
E. triloba 11       CAATATTTCC TTTTTTAGAG GATAAATTAT TGCATTTAAA TTATCTGTCC
E. wandokthong      CAATATTTCC TTTTTTAGAG GATAAATTAT TGCATTTAAA TTATCTGTCC
E. triloba 34       CAATATTTCC TTTTTTAGAG GATAAATTAT TGCATTTAAA TTATCTGTCC
E. limiana 10       ---------- ---------- ---------- ---------- ----------
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	410	420	430	440	450
S. siliquosus	GATATACTAA	TACCCTATCC	CGCCCATATG	GAAATCTTGG	TCCAAATGCT
A. yunnanense	GATATACTAA	TACCCTATCC	CGCCCATATG	GAAATCTTGG	TCCAAATGCT
A. glabrum	GATATACTAA	TACCATATCC	CGCCCATATG	GAAATCTTGG	TCCAAATGCT
E. chayaniana 3	GATATACTAA	TACCATATCC	CGCCCATATG	GAAATCTTGG	TCCAAATGCT
E. exserta 5	GATATACTAA	TACCATATCC	CGCCCATATG	GAAATCTTGG	TCCAAATGCT
E. triloba 11	GATATACTAA	TACCATATCC	CGCCCATATG	GAAATCTTGG	TCCAAATGCT
E. wandokthong	GATATACTAA	TACCATATCC	CGCCCATATG	GAAATCTTGG	TCCAAATGCT
E. triloba 34	GATATACTAA	TACCATATCC	CGTCCATATG	GAAATCTTGG	TCCAAATGCT
E. limiana 10	----------	----------	----------	----------	----------

	460	470	480	490	500
S. siliquosus	TCAATCCTGG	ATCCAGGATG	TTCTCTCTTT	ACATTTATTG	CAGTTCCTTC
A. yunnanense	TCAATCCTGG	ATCCAGGATG	TTCTCTCTTT	ACATTTATTG	CAGTTCCTTC
A. glabrum	TCAATCCTGG	ATCCAGGATG	TTCTCTCTTT	ACATTTATTG	CAGTTCCTTC
E. chayaniana 3	TCAATCCTGG	ATCCAGGATG	TTCTCTCTTT	ACATTTATTG	CAGTTCCTTC
E. exserta 5	TCAATCCTGG	ATCCAGGATG	TTCTCTCTTT	ACATTTATTG	CAGTTCCTTC
E. triloba 11	TCAATCCTGG	ATCCAGGATG	TTCTCTCTTT	ACATTTATTG	CAGTTCCTTC
E. wandokthong	TCAATCCTGG	ATCCAGGATG	TTCTCTCTTT	ACATTTATTG	CAGTTCCTTC
E. triloba 34	TCAATCCTGG	ATCCAGGATG	TTCTCTCTTT	ACATTTATTG	CAGTTCCTTC
E. limiana 10	----------	----------	----------	----------	----------

	510	520	530	540	550
S. siliquosus	TCCACGAATA	TTATAATTGG	AATAGTCTCA	AATAGTCTCA	TTATTCAGAA
A. yunnanense	TCCACGAATA	TTATAATTGG	AATAGTCTCA	AATAGTCTCA	TTATTCAGAA
A. glabrum	TCCACGAATA	TTATAATTGG	AATAGTCTCA	AATAGTCTCA	TTATTCAGAA
E. chayaniana 3	TCCACGAATA	TTATAATTGG	AATAGTCTCA	AATAGTCTCA	TTATTCAGAA
E. exserta 5	TCCACGAATA	TTATAATTGG	AATAGTCTCA	AATAGTCTCA	TTATTCAGAA
E. triloba 11	TCCACGAATA	TTATAATTGG	AATAGTCTCA	AATAGTCTCA	TTATTCAGAA
E. wandokthong	TCCACGAATA	TTATAATTGG	AATAGTCTCA	AATAGTCTCA	TTATTCAGAA
E. triloba 34	TCCACGAATA	TTATAATTGG	AATAGTCTCA	AATAGTCTCA	TTATTCAGAA
E. limiana 10	----------	----------	----------	----------	----------

	560	570	580	590	600
S. siliquosus	TATGTATTTT	CAAAAGACAA	TAAAAGACTA	TTTTGTTTCT	TATATAATTT
A. yunnanense	TATGTATTTT	CAAAAGACAA	TAAAAGACTA	TTTTGTTTCT	TATATAATCT
A. glabrum	TATGTATTTT	CAAAAGACAA	TAAAAGACTA	TTTTGTTTCT	TATATAATTT
E. chayaniana 3	TATGTATTTT	CAAAAGACAA	TAAAAGACTA	TTTTGTTTCT	TATATAATTT
E. exserta 5	TATGTATTTT	CAAAAGACAA	TAAAAGACTA	TTTTGTTTCT	TATATAATTT
E. triloba 11	TATGTATTTT	CAAAAGACAA	TAAAAGACTA	TTTTGTTTCT	TATATAATTT
E. wandokthong	TATGTATTTT	CAAAAGACAA	TAAAAGACTA	TTTTGTTTCT	TATATAATTT
E. triloba 34	TATGTATTTT	CAAAAGACAA	TAAAAGACTA	TTTTGTTTCT	TATATAATTT
E. limiana 10	----------	----------	----------	----------	----------

	610	620	630	640	650
S. siliquosus	ATACATATAT	GAATATGAAT	TTCTATTAGT	GTTTCCTTGT	AAACAATCCT
A. yunnanense	ATACATATAT	GAATATGAAT	TTCTATTAGT	GTTTCCTTGT	AAACAATCTT
A. glabrum	ATACATATAT	GAATATGAAT	TTCTATTAGT	GTTTCCTTGT	AAACAATCCT
E. chayaniana 3	ATACATATAT	GAATATGAAT	TTCTATTAGT	GTTTCCTTGT	AAACAATCCT
E. exserta 5	ATACATATAT	GAATATGAAT	TTCTATTAGT	GTTTCCTTGT	AAACAATCCT
E. triloba 11	ATACATATAT	GAATATGAAT	TTCTATTAGT	GTTTCCTTGT	AAACAATCCT
E. wandokthong	ATACATATAT	GAATATGAAT	TTCTATTAGT	GTTTCCTTGT	AAACAATCCT
E. triloba 34	ATACATATAT	GAATATGAAT	TTCTATTAGT	GTTTCCTTGT	AAACAATCCT
E. limiana 10	----------	----------	----------	----------	----------

	660	670	680	690	700
S. siliquosus	CTTTTTTACG	ATTAATATCT	TCTGGAGTCC	TTCTTGAGCG	AATACATTTT
A. yunnanense	CTTTTTTACG	ATTAATATCT	TCTGGAGTCC	TTCTTGAGCG	AATACATTTT
A. glabrum	CTTTTTTACG	ATTAATATCT	TCTGGAGTCC	TTCTTGAGCG	AATACATTTT
E. chayaniana 3	CTTTTTTACG	ATTAATATCT	TCTGGAGTCC	TTCTTGAGCG	AATACATTTT
E. exserta 5	CTTTTTTACG	ATTAATATCT	TCTGGAGTCC	TTCTTGAGCG	AATACATTTT
E. triloba 11	CTTTTTTACG	ATTAATATCT	TCTGGAGTCC	TTCTTGAGCG	AATACATTTT
E. wandokthong	CTTTTTTACG	ATTAATATCT	TCTGGAGTCC	TTCTTGAGCG	AATACATTTT
E. triloba 34	CTTTTTTACG	ATTAATATCT	TCTGGAGTCC	TTCTTGAGCG	AATACATTTT
E. limiana 10	----------	----------	----------	----------	----------

	710	720	730	740	750
S. siliquosus	TGTGTAAAAA	TAGAACATCT	TGGAGTGTGC	CGAATTTTTT	GTCAGAAGAC
A. yunnanense	TGTGTAAAAA	TAGAACATCT	TGGAGTGTGC	CGAATTTTTT	GTCAGAAGAC
A. glabrum	TGTGTAAAAA	TAGAACATCT	TGGAGTGTGC	CGAATTTTTT	GTCAGAAGAC
E. chayaniana 3	TGTGTAAAAA	TAGAACATCT	TGGAGTGTGC	CGAATTTTTT	GTCAGAAGAC
E. exserta 5	TGTGTAAAAA	TAGAACATCT	TGGAGTGTGC	CGAATTTTTT	GTCAGAAGAC
E. triloba 11	TGTGTAAAAA	TAGAACATCT	TGGAGTGTGC	CGAATTTTTT	GTCAGAAGAC
E. wandokthong	TGTGTAAAAA	TAGAACATCT	TGGAGTGTGC	CGAATTTTTT	GTCAGAAGAC
E. triloba 34	TGTGTAAAAA	TAGAACATCT	TGGAGTGTGC	CGAATTTTTT	GTCAGAAGAC
E. limiana 10	----------	----------	----------	----------	----------

	760	770	780	790	800
S. siliquosus	TCTATGGATT	TTCAAGGATC	CTTTCATACA	TTATATTCGA	TATCAAGGAA
A. yunnanense	TCTATGGATT	TTCAAGGATC	CTTTCATACA	TTATATTCGA	TATCAAGGAA
A. glabrum	TCTATGGATT	TTCAAGGATC	CTTTCATACA	TTATATTCGA	TATAAAGGAA
E. chayaniana 3	TCTATGGATT	TTCGAGGATC	CTTTCATACA	TTATATTCGA	TATAAAGGAA
E. exserta 5	TCTATGGATT	TTCGAGGATC	CTTTCATACA	TTATATTCGA	TATAAAGGAA
E. triloba 11	TCTATGGATT	TTCGAGGATC	CTTTCATACA	TTATATTCGA	TATAAAGGAA
E. wandokthong	TCTATGGATT	TTCGAGGATC	CTTTCATACA	TTATATTCGA	TATAAAGTAA
E. triloba 34	TCTATGGATT	TTTGAGAATC	CTTTCATACA	TTATATTCGA	TATAAAGGAA
E. limiana 10	----------	----------	----------	----------	----------

	810	820	830	840	850
S. siliquosus	AATCGATTTT	GGGTTCAAGA	GGGACTC---	ATTTTTTGAT	GAAGAAATGG
A. yunnanense	AATCAATTTT	GGGTTCAAGA	GGGACTC---	ATTTTTTGAT	GAAGAAATGG
A. glabrum	AATCCATTTT	GGGTTCAAGA	GGGACTC---	ATTTTTTGAT	GAAGAAATGG
E. chayaniana 3	AATCCATTTT	GGGTTCAAGA	GGGACTC---	ATTTTTTGAT	GAAGAAATGG
E. exserta 5	AATCCATTTT	GGGTTCAAGA	GGGACTC---	ATTTTTTGAT	GAAGAAATGG
E. triloba 11	AATCCATTTT	GGGTTCAAGA	GGGACTC---	ATTTTTTGAT	GAAGAAATGG
E. wandokthong	AATCCATTTT	GGGTTCAAGA	GGGACTC---	ATTTTTTGAT	GAAGAAATGG
E. triloba 34	AATCCATTTT	GGGTTCAAGA	GGGACTC---	ATTTTTTGAT	GAAGAAATGG
E. limiana 10	----------	----------	----------	----------	----------

	860	870	880	890	900
S. siliquosus	AAA-TACCAT	CTTGTTTATT	CTTGTTTATT	TTTGGCAATA	TT--TTGGTC
A. yunnanense	AAA-TACCAT	CTTGTTTATT	CTTGTTTATT	TTTGGCAATA	TT--TTGGTC
A. glabrum	AAA-TACCAT	CTTGTTTATT	CTTGTTTATT	TTTGGCAATA	TT--TTGGTC
E. chayaniana 3	AAA-TACCAT	CTTGTTTATT	CTTGTTTATT	TTTGGCAATA	TT--TTGGTC
E. exserta 5	AAA-TACCAT	CTTGTTTATT	CTTGTTTATT	TTTGGCAATA	TT--TTGGTC
E. triloba 11	AAA-TACCAT	CTTGTTTATT	CTTGTTTATT	TTTGGCAATA	TT--TTGGTC
E. wandokthong	AAA-TACCAT	CTTGTTTATT	CTTGTTTATT	TTTGGCAATA	TT--TTGGTC
E. triloba 34	AAAATACCAT	CTTGTTTATT	CTTGTTTATT	TTTGGCAATA	TT--TTGGTC
E. limiana 10	--A-TACCAT	CTTGTTTATT	CTTGTTTATT	TTTGGCAATA	TT--TTGGTC

	910	920	930	940	950
S. siliquosus	TCAACCATAT	AGGATTGATA	TAAATAAATT	ATCAAA-CTA	TTCTTTTTAT
A. yunnanense	TCAACCATAT	AGGATTGATA	TAAATAAATT	ATCAAA-CTA	TTCTTTTTAT
A. glabrum	TCAACCATAT	AGGATTGATA	TAAATAAATT	ATCAAA-CTA	TTCTTTTTAT
E. chayaniana 3	TCAACCATAT	AGGATTGATA	TAAATAAATT	ATCAAA-CTA	TTCTTTTTAT
E. exserta 5	TCAACCATAT	AGGATTGATA	TAAATAAATT	ATCAAA-CTA	TTCTTTTTAT
E. triloba 11	TCAACCATAT	AGGATTGATA	TAAATAAATT	ATCAAA-CTA	TTCTTTTTAT
E. wandokthong	TCAACCATAT	AGGATTGATA	TAAATAAATT	ATCAAA-CTA	TTCTTTTTAT
E. triloba 34	TCAACCATAT	AGGATTGATA	TAAATAAATT	ATCAAA-CTA	TTCTTTTTAT
E. limiana 10	TCAACCATAT	AGGATTGATA	TAAATAAATT	ATCAAA-CTA	TTCTTTTTAT

	960	970	980	990	1000
S. siliquosus	TTTC-TGGGT	TATTTTTCAA	GTGTAC---A	AATTAATTCT	TCGATGATAA
A. yunnanense	TTTC-TTGGT	TATTTTTCAA	GTGTAC---A	AATTAATTCT	TCGATGATAA
A. glabrum	TTTC-TTGGT	TATTTTTCAA	GTGTAC---A	AATTCATTCT	TCGATGATAA
E. chayaniana 3	TTTC-TTGGT	TATTTTTCAA	GTGTAC---A	AATTCATTCT	TCGATGATAA
E. exserta 5	TTTC-TTGGT	TATTTTTCAA	GTGTAC---A	AATTCATTCT	TCGATGATAA
E. triloba 11	TTTC-TTGGT	TATTTTTCAA	GTGTAC---A	AATTCATTCT	TCGATGATAA
E. wandokthong	TTTC-TTGGT	TATTTTTCAA	GTGTAC---A	AATTCATTCT	TCGATGATAA
E. triloba 34	TTTC-TTGGT	TATTTTTCAA	GTGTAC---A	AATTCATTCT	TCGATGATAA
E. limiana 10	TTTC-TTGGT	TATTTTTCAA	GTGTAC---A	AATTCATTCT	TCGATGATAA

	1010	1020	1030	1040	1050
S. siliquosus	GGAATCAAAT	GCTAGAGAAT	TCATTTCTAA	TGGATACTCT	TACTAATAAA
A. yunnanense	GGAATCAAAT	GCTAGAGAAT	TCATTTCTAA	TGGATACTCT	TACTAATAAA
A. glabrum	GGAATCAAAT	GCTAGAGAAT	TCATTTCTAA	TGGATACTCT	TACTAATAAA
E. chayaniana 3	GGAATCAAAT	GCTAGAGAAT	TCATTTCTAA	TGGATACTCT	TACTAATAAA
E. exserta 5	GGAATCAAAT	GCTAGAGAAT	TCATTTCTAA	TGGATACTCT	TACTAATAAA
E. triloba 11	GGAATCAAAT	GCTAGAGAAT	TCATTTCTAA	TGGATACTCT	TACTAATAAA
E. wandokthong	GGAATCAAAT	GCTAGAGAAT	TCATTTCTAA	TGGATACTCT	TACTAATAAA
E. triloba 34	GGAATCAAAT	GCTAGAGAAT	TCATTTCTAA	TGGATACTCT	TACTAATAAA
E. limiana 10	GGAATCAAAT	GCTAGAGAAT	TCATTTCTAA	TGGATACTCT	TACTAATAAA

	1060	1070	1080	1090	1100
S. siliquosus	TTTGATACTA	GAATCCCAAT	TATTCCTCTT	ATTCGATCGT	TGTCTAAAGC
A. yunnanense	TTTGATACTA	GAATCCCAAT	TATTCCTCTT	ATTCGATCAT	TGTCTAAAGC
A. glabrum	TTTGATACTA	GAATCCCAAT	TATTCCTCTT	ATTCGATCAT	TGTCTAAAGC
E. chayaniana 3	TTTGATACTA	GAATCCCAAT	TATTCCTCTT	ATTCGATCAT	TGTCTAAAGC
E. exserta 5	TTTGATACTA	GAATCCCAAT	TATTCCTCTT	ATTCGATCAT	TGTCTAAAGC
E. triloba 11	TTTGATACTA	GAATCCCAAT	TATTCCTCTT	ATTCGATCAT	TGTCTAAAGC
E. wandokthong	TTTGATACTA	GAATCCCAAT	TATTCCTCTT	ATTCGATCAT	TGTCTAAAGC
E. triloba 34	TTTGATACTA	GAATCCCAAT	TATTCCTCTT	ATTCGATCAT	TGTCTAAAGC
E. limiana 10	TTTGATACTA	GAATCCCAAT	TATTCCTCTT	ATTCGATCAT	TGTCTAAAGC

	1110	1120	1130	1140	1150
S. siliquosus	TCAATTTTGT	ACTGTATCTG	GGTATCCTAT	TAGTAAACCA	ATTTGGACCG
A. yunnanense	TCAATTTTGT	ACTGTATCTG	GGTATCCTAT	TAGTAAACCA	ATTTGGACCG
A. glabrum	TCAATTTTGT	ACTGTATCTG	GGTATCCTAT	TAGTAAACCA	ATTTGGACCG
E. chayaniana 3	TCAATTTTGT	ACTGTATCTG	GGTATCCTAT	TAGTAAACCA	ATTTGGACCG
E. exserta 5	TCAATTTTGT	ACTGTATCTG	GGTATCCTAT	TAGTAAACCA	ATTTGGACCG
E. triloba 11	TCAATTTTGT	ACTGTATCTG	GGTATCCTAT	TAGTAAACCA	ATTTGGACCG
E. wandokthong	TCAATTTTGT	ACTGTATCTG	GGTATCCTAT	TAGTAAACCA	ATTTGGACCG
E. triloba 34	TCAATTTTGT	ACTGTATCTG	GGTATCCTAT	TAGTAAACCA	ATTTGGACCG
E. limiana 10	TCAATTTTGT	ACTGTATCTG	GGTATCCTAT	TAGTAAACCA	ATTTGGACCG

	1160	1170	1180	1190	1200
S. siliquosus	ATTTAGCGGA	TTGTGATATT	ATTAATAGAT	TTGGTCGGAT	ATGTAGAAAG
A. yunnanense	ATTTAGCGGA	TTGTGATATT	ATTAATAGAT	TTGGTCGGAT	ATGTAGAAAG
A. glabrum	ATTTAGCAGA	TTGTGATATT	ATTAATAGAT	TTGGTCGGAT	ATGTAGAAAG
E. chayaniana 3	ATTTAGCGGA	TTGTGATATT	ATTAATAGAT	TTGGTCGGAT	ATGTAGAAAG
E. exserta 5	ATTTAGCGGA	TTGTGATATT	ATTAATAGAT	TTGGTCGGAT	ATGTAGAAAG
E. triloba 11	ATTTAGCGGA	TTGTGATATT	ATTAATAGAT	TTGGTCGGAT	ATGTAGAAAG
E. wandokthong	ATTTAGCGGA	TTGTGATATT	ATTAATAGAT	TTGGTCGGAT	ATGTAGAAAG
E. triloba 34	ATTTAGCGGA	TTGTGATATT	ATTAATAGAT	TTGGTCGGAT	ATGTAGAAAG
E. limiana 10	ATTTAGCGGA	TTGTGATATT	ATTAATAGAT	TTGGTCGGAT	ATGTAGAAAG

	1210	1220	1230	1240	1250
S. siliquosus	CTTTCTCACT	ATCATAGTGG	ATCCTCAAAA	AAACAGGGTT	TGTATCGAAT
A. yunnanense	CTTTCTCACT	ATCATAGTGG	ATCCTCAAAA	AAACAGGGTT	TGTATCGAAT
A. glabrum	CTTTCTCACT	ATCATAGTGG	ATCCTCAAAA	AAACAGGGTT	TGTATCGAAT
E. chayaniana 3	CTTTCTCACT	ATCATAGTGG	ATCCTCAAAA	AAACAGGGTT	TGTATCGAAT
E. exserta 5	CTTTCTCACT	ATCATAGTGG	ATCCTCAAAA	AAACAGGGTT	TGTATCGAAT
E. triloba 11	CTTTCTCACT	ATCATAGTGG	ATCCTCAAAA	AAACAGGGTT	TGTATCGAAT
E. wandokthong	CTTTCTCACT	ATCATAGTGG	ATCCTCAAAA	AAACAGGGTT	TGTATCGAAT
E. triloba 34	CTTTCTCACT	ATCATAGTGG	ATCCTCAAAA	AAACAGGGTT	TGTATCGAAT
E. limiana 10	CTTTCTCACT	ATCATAGTGG	ATCCTCAAAA	AAACAGGGTT	TGTATCGAAT

	1260	1270	1280	1290	1300
S. siliquosus	AAAGTATATA	CTTCGACTTT	CATGTGCCAG	AACTTTGGCT	CGTAAACATA
A. yunnanense	AAAGTATATA	CTTCGACTTT	CATGTGCCAG	AACTTTGGCT	CGTAAACATA
A. glabrum	AAAGTATATA	CTTCGACTTT	CATGTGCCAG	AACTTTGGCT	CGTAAACATA
E. chayaniana 3	AAAGTATATA	CTTCGACTTT	CATGTGCCAG	AACTTTGGCT	CGTAAACATA
E. exserta 5	AAAGTATATA	CTTCGACTTT	CATGTGCCAG	AACTTTGGCT	CGTAAACATA
E. triloba 11	AAAGTATATA	CTTCGACTTT	CATGTGCCAG	AACTTTGGCT	CGTAAACATA
E. wandokthong	AAAGTATATA	CTTCGACTTT	CATGTGCCAG	AACTTTGGCT	CGTAAACATA
E. triloba 34	AAAGTATATA	CTTCGACTTT	CATGTGCCAG	AACTTTGGCT	CGTAAACATA
E. limiana 10	AAAGTATATA	CTTCGACTTT	CATGTGCCAG	AACTTTGGCT	CGTAAACATA

	1310	1320	1330	1340	1350
S. siliquosus	AAAGCTCAGC	ACGCAGTTTT	TTGCAAAGAT	TAAGTTCGGG	ATTATTAGAA
A. yunnanense	AAAGCTCAGC	ACGCAGTTTT	TTGCAAAGAT	TAAGTTCGGG	ATTATTAGAA
A. glabrum	AAAGCTCAGC	ACGCAGTTTT	TTGCAAAGAT	TAAGTTCGGG	ATTATTAGAA
E. chayaniana 3	AAAGCTCAGC	ACGCAGTTTT	TTGCAAAGAT	TAAGTTCGGG	ATTATTAGAA
E. exserta 5	AAAGCTCAGC	ACGCAGTTTT	TTGCAAAGAT	TAAGTTCGGG	ATTATTAGAA
E. triloba 11	AAAGCTCAGC	ACGCAGTTTT	TTGCAAAGAT	TAAGTTCGGG	ATTATTAGAA
E. wandokthong	AAAGCTCAGC	ACGCAGTTTT	TTGCAAAGAT	TAAGTTCGGG	ATTATTAGAA
E. triloba 34	AAAGCTCAGC	ACGCAGTTTT	TTGCAAAGAT	TAAGTTCGGG	ATTATTAGAA
E. limiana 10	AAAGCTCAGC	ACGCAGTTTT	TTGCAAAGAT	TAAGTTCGGG	ATTATTAGAA

	1360	1370	1380	1390	1400
S. siliquosus	GAATTCTTTA	CGGAAGAAGA	ACAAGTTATT	TCTTTGATCT	TTCCAAAAAT
A. yunnanense	GAATTCTTTA	CGGAAGAAGA	ACAAGTTATT	TCTTTGATCT	TTCCAAAAAT
A. glabrum	GAATTCTTTA	CGGAAGAAGA	ACAAGTTATT	TCTTTGATCT	TTCCAAAAAT
E. chayaniana 3	GAATTCTTTA	CGGAAGAAGA	ACAAGTTATT	TCTTTGATCT	TTCCAAAAAT
E. exserta 5	GAATTCTTTA	CGGAAGAAGA	ACAAGTTATT	TCTTTGATCT	TTCCAAAAAT
E. triloba 11	GAATTCTTTA	CGGAAGAAGA	ACAAGTTATT	TCTTTGATCT	TTCCAAAAAT
E. wandokthong	GAATTCTTTA	CGGAAGAAGA	ACAAGTTATT	TCTTTGATCT	TTCCAAAAAT
E. triloba 34	GAATTCTTTA	CGGAAGAAGA	ACAAGTTATT	TCTTTGATCT	TTCCAAAAAT
E. limiana 10	GAATTCTTTA	CGGAAGAAGA	ACAAGTTATT	TCTTTGATCT	TTCCAAAAAT

	1410	1420	1430	1440	1450
S. siliquosus	AACTTATTTT	TATTTATATG	GATCATATAG	AGAACGTATT	TGGTATTTGG
A. yunnanense	AACTTATTTT	TATTTATATG	GATCATATAG	AGAACGTATT	TGGTATTTGG
A. glabrum	AACTTATTTT	TATTTATATG	GATCATATAG	AGAACGTATT	TGGTATTTGG
E. chayaniana 3	AACTTATTTT	TATTTATATG	GATCATATAG	AGAACGTATT	TGGTATTTGG
E. exserta 5	AACTTATTTT	TATTTATATG	GATCATATAG	AGAACGTATT	TGGTATTTGG
E. triloba 11	AACTTATTTT	TATTTATATG	GATCATATAG	AGAACGTATT	TGGTATTTGG
E. wandokthong	AACTTATTTT	TATTTATATG	GATCATATAG	AGAACGTATT	TGGTATTTGG
E. triloba 34	AACTTATTTT	TATTTATATG	GATCATATAG	AGAACGTATT	TGGTATTTGG
E. limiana 10	AACTTATTTT	TATTTATATG	GATCATATAG	AGAACGTATT	TGGTATTTGG

	1460	1470	1480	1490	1500
S. siliquosus	ATATTATCCG	TATCAATGAC	CTGGTAAATA	GTTTATTAGT	CACGACATAA
A. yunnanense	ATATTATCCG	TATCAATGAC	TTGGTAAATA	GTTTATTAGT	CACGACATAA
A. glabrum	ATATTATCCG	TATCAATGAC	CTGGTAAATA	GTTTATTAGT	CACGACATAA
E. chayaniana 3	ATATTATCCG	TATCAATGAC	CTGGTAAATA	GTTTATTAGT	CACGACATAA
E. exserta 5	ATATTATCCG	TATCAATGAC	CTGGTAAATA	GTTTATTAGT	CACGACATAA
E. triloba 11	ATATTATCCG	TATCAATGAC	CTGGTAAATA	GTTTATTAGT	CACGACATAA
E. wandokthong	ATATTATCCG	TATCAATGAC	CTGGTAAATA	GTTTATTAGT	CACGACATAA
E. triloba 34	ATATTATCCG	TATCAATGAC	CTGGTAAATA	GTTTATTAGT	TACGACATAA
E. limiana 10	ATATTATCCG	TATCAATGAC	CTGGTAAATA	GTTTATTAGT	CACGACATAA

	1510	1520	1530	1540	1550
S. siliquosus	TACAATATAA	ATAAAATAGA	AGATCCATAG	AAGATCTAAT	AGAAATGTAC
A. yunnanense	TACAATATAA	ATA-----GA	AGATCCATAG	AAGATCTAAT	AGAAATGTAC
A. glabrum	TACAATATAA	ATA-----GA	AGATCCATAG	AAGATCTAAT	AGAAATGTAC
E. chayaniana 3	TACAATATAA	ATA-----GA	AGATCCATAG	AAGATCTAAT	AGAAATGTAC
E. exserta 5	TACAATATAA	ATA-----GA	AGATCCATAG	AAGATCTAAT	AGAAATGTAC
E. triloba 11	TACAATATAA	ATA-----GA	AGATCCATAG	AAGATCTAAT	AGAAATGTAC
E. wandokthong	TACAATATAA	ATA-----GA	AGATCCATAG	AAGATCTAAT	AGAAATGTAC
E. triloba 34	TACAATATAA	ATA-----GA	AGATCCATAG	AAGATCTAAT	AGAAATGTAC
E. limiana 10	TACAATATAA	ATA-----GA	AGATCCATAG	AAGATCTAAT	AGAAATGTAC

	1560	1570	1580	1590	1600
S. siliquosus	AAATGATCTA	TATTTATACT	ATAGATCAAG	AGATCAAGAG	AAAAAAAA--
A. yunnanense	AAATGATCTA	TATTTATACT	ATAGATCAAG	AGATCAAGAG	AAAAAAAAAA
A. glabrum	AAATGATCTA	TATTTATACT	ATAGATCAAG	AGATCAAGAT	AAAAAAAA--
E. chayaniana 3	AAATGATCTA	TATTTATACT	ATAGATCAAG	ATA-------	AAAAAAAA--
E. exserta 5	AAATGATCTA	TATTTATACT	ATAGATCAAG	AGATCAAGAT	AAAAAAAA--
E. triloba 11	AAATGATCTA	TATTTATACT	ATAGATCAAG	AGATCAAGAT	AAAAAAAA--
E. wandokthong	AAATGATCTA	TATTTATACT	ATAGATCAAG	ATA-------	AAAAAAAA--
E. triloba 34	AAATGATCTA	TATTTATACT	ATAGATCAAG	AGATCAAGAT	AAAAAAAA--
E. limiana 10	AAATGATCTA	TATTTATACT	ATAGATCAAG	AGATCAAGAT	AAAAAAAA--

	1610	1620	1630	1640	1650
S. siliquosus	--TATTCAGA	GAATTATCAT	T-CTGAAATG	CTCATGTAGT	ACTGTACTGC
A. yunnanense	AATATTCAGA	GAATTATCAT	T-CTGAAATG	CTCATGTAGT	ACTGTACTGC
A. glabrum	--TATTCAGA	GAATTATCAT	T-CTGAAATG	CTCATGTAGT	ACTGTACTGC
E. chayaniana 3	--TATTCAGA	GAATTATCAT	T-CTGAAATG	CTCATGTAGT	ACTGTACTGC
E. exserta 5	--TATTCAGA	GAATTATCAT	T-CTGAAATG	CTCATGTAGT	ACTGTACTGC
E. triloba 11	--TATTCAGA	GAATTATCAT	T-CTGAAATG	CTCATGTAGT	ACTGTACTGC
E. wandokthong	--TATTCAGA	GAATTATCAT	T-CTGAAATG	CTCATGTAGT	ACTGTACTGC
E. triloba 34	--TATTCAGA	GAATTATCAT	T-CTGAAATG	CTCATGTAGT	ACTGTACTGC
E. liuiana 10	--TATTCAGA	GAATTATCAT	T-CTGAAATG	CTCATGTAGT	ACTGTACTGC

	1660	1670	1680	1690	1700
S. siliquosus	TTGAATCAAC	TGAGTAGTCA	AAATTCTTAT	TTGCACTTTA	CTTTCTTCT-
A. yunnanense	TTGAATCAAC	TGAGTAGTCC	AAATTCTTAT	TTGCACTTTA	CTTTCTTCT-
A. glabrum	TTGAATCAAC	TGAGTAGTCC	AAATTCTTAT	TTGCACTTTA	CTTTCTTTTT
E. chayaniana 3	TTGAATCAAC	TGAGTAGTCC	AAATTCTTAT	TTGCACTTTA	CTTTCTTTTT
E. exserta 5	TTGAATCAAC	TGAGTAGTCC	AAATTCTTAT	TTGCACTTTA	CTTTCTTTTT
E. triloba 11	TTGAATCAAC	TGAGTAGTCC	AAATTCTTAT	TTGCACTTTA	CTTTCTTTTT
E. wandokthong	TTGAATCAAC	TGAGTAGTCC	AAATTCTTAT	TTGCACTTTA	CTTTCTTTTT
E. triloba 34	TTGAATCAAC	TGAGTAGTCC	AAATTCTTAT	TTGCACTTTA	CTTTCTTTTT
E. liuiana 10	TTGAATCAAC	TGAGTAGTCC	AAATTCTTAT	TTGCACTTTA	CTTTCTTTTT

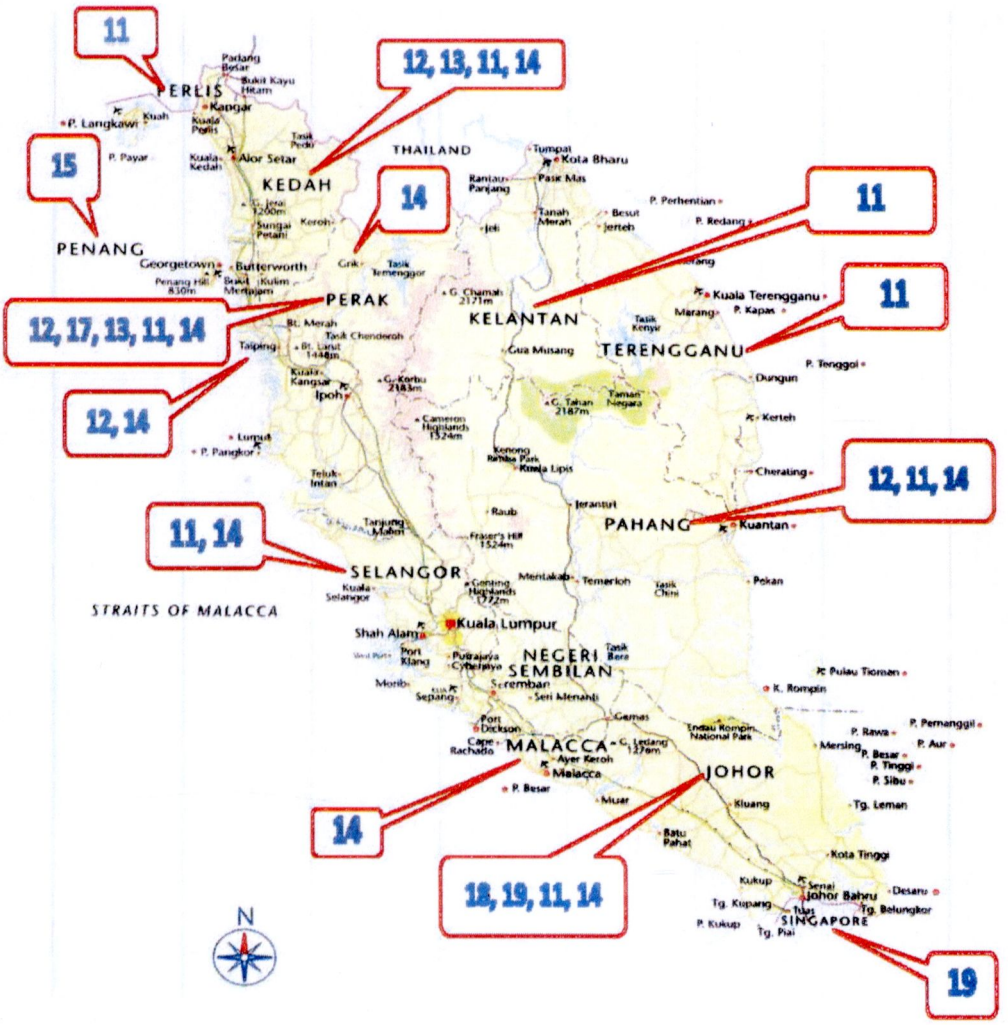
	1710	1720	1730	1740	1750
S. siliquosus	----------	CGGGATGTTT	TTTATATGTA	TACATAGG-- -	
A. yunnanense	----------	CGGGATGTTT	TTTATATGTA	TACATAGG-- -	
A. glabrum	CTTCTCGGGT	CGGGATGTTT	TTTATATGTA	TACATAGG-- -	
E. chayaniana 3	CTTCTCGGGT	CGGGATGTTT	TTTATATGTA	TACATAGG-- -	
E. exserta 5	CTTCTCGGGT	CGGGATGTTT	TTTATATGTA	TACATAGG-- -	
E. triloba 11	CTTCTCGGGT	CGGGATGTTT	TTTATATGTA	TACATAGG-- -	
E. wandokthong	CTTCTCGGGT	CGGGATGTTT	TTTATATGTA	TACATAGG-- -	
E. triloba 34	CTTCTCGGGT	CGGGATGTTT	TTTATATGTA	TACATAGG-- -	
E. liuiana 10	CTTCTCGGGT	CGGGATGTTT	TTTATATGTA	TACATAGG-- -	

ภาคผนวก ค

แสดงเขตการกระจายพันธ์ของพืชสกุลว่านดอกทอง

ภาพที่ 43 แสดงเขตการกระจายพันธ์ของพืชสกุลว่านดอกทองในประเทศไทย 1 1. *E. monophylla*, 2. *E. triloba*, 3. *E. limiana*, 4. *E. poonsakiana*, 5. *E. wandokthong*, 6. *E. chayaniana*, 7. *E. tratensis*

ภาพที่ 44 แสดงเขตการกระจายพันธ์ของพืชสกุลว่านดอกทองในประเทศไทย 2 8. *E. angustifolia* 9. *E. exserta*, 10 *E. smithiae*



ภาพที่ 45 แสดงเขตการกระจายพันธุ์ของพืชสกุลว่านดอกทองในแถบคาบสมุทรมาลายู 11. *E. slahmong* 12. *E. burttiana*, 13. *E. rugosa*, 14. *E. smithiae*, 15. *E. curtisii*, 16. *E. trangensis*, 17. *E. elan*, 18. *E. johorensis*, 19. *E. latiflora*

ภาพที่ 46 แสดงเขตการกระจายพันธ์ของพืชสกุลว่านดอกทอง 1. ประเทศจีน, 2. ประเทศเวียดนาม, 3. ประเทศสาธารณรัฐประชาธิปไตยประชาชนลาว, 4. ประเทศไทย, 5. ประเทศมาเลเซีย, 6. ประเทศสิงคโปร์

การเผยแพร่ผลงานวิทยานิพนธ์

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ประวัติผู้เขียน

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ประวัติการศึกษา	

- สำเร็จการศึกษาระดับอนุปริญญาจากโรงเรียนอายุรเวท ปีการศึกษา 2547
- สำเร็จการศึกษาระดับปริญญาตรี วิทยาศาสตรบัณฑิต สาขาวิชาการแพทย์แผนไทยประยุกต์ มหาวิทยาลัยมหาสารคาม เมื่อปีการศึกษา 2549