

RODGER C. EVANS AND CHRISTOPHER S. CAMPBELL. 2002. The origin of the apple subfamily (Maloideae; Rosaceae) is clarified by DNA sequence data from duplicated GBSSI genes. *American Journal of Botany* 89(9): 1478-1484.

Figs. 5 and 6. Alignment of exons (bold face type) and introns of *Gillenia* clones with a selection of Maloideae clones from their respective clades.

5

Gillenia.b CTGGTGGACTCGGTGATGTTCTTGGTGGCCCTCCCACCGGCTATGGCT-----GTAAGCTTTGCTTCTCTCTTGCCTTGTAAATTAACGCGTAAATAGAA-CCAAGCGACAT
Amelanchier.e.1A CTGGTGGACTCGGTGATGTTCTTGGAGGCTCCCACCGGCTATGGCT-----GTAAGCTTTGCTTCTCT-CTCTTGATTTGTAGTTAATCCGCACAAT-----
Amelanchier.18.1B CTGGTGGACTCGGTGATGTTCTTGGAGGCTCCCACCGGCTATGGCT-----GTAAGCTTTGCTTACTTCTCTTGCCTTGTAT- AATATGCACAATAGAA-CCGAGCGACAT
Malus.7.1A CTGGTGGACTCGGTGATGTTCTTGGAGGCTCCCACCGGCAATGGCT-----GTAAGCTTTGCTTCTCT-CTGTTGATTTGTAGTTAATACGCACAATAGAA-GCGGACGATAC
Malus.c.1B CTGGTGGACTCGGTGATGTTCTTGGAGGCTCCCACCGGCTATGGCT-----GTAAGCT--CTTACTTCTCTTGCCTTGTAAAT-AATATGCACAATAGAA-CCGAGCGACAT
Vauquelinia.b.1A CTGGTGGACTCGGTGATGTTCTTGGAGGCTCCCACCGGCTATGGCT-----GTAAGCTTTGCTTCTCT-CTCTTGATTTGTATTTAATACCCACAATAAAAACCGAGGCGAC
Vauquelinia.3.1B CTGGTGGACTCGGTGATGTTCTTGGAGGCTCCCACCGGCTATGGCT-----GTAAGCTTTGCTTCTCTCTCTTGCCTTGTAAATTAATATGCACAATAAGAA-CCGAGCGACAT
Cotoneaster.12.1A CTGGTGGACTCGGTGATGTTCTTGGAGGCTCCCACCGGCTATGGCT-----GTAAGCTTTGCTTCTCT-CTCTTGATTTGTAGTTAATACGCACAATAAGAGGGGATACT-
Cotoneaster.9.1B CTGGTGGACTCGGTGATGTTCTTGGAGGCTCCCACCGGCTATGGCT-----GTAAGCTTTGCTTACTTGTCTTGCCTTGTAA-TAATATGCACAATAGAAACC-GAACGACAT

Gillenia.b TAAACAGACAATAAACCGTAT-TTAAATCATGGTTTAG-TC---TTTATTGACAGTGTAGCGTCCCTCAAGTCTGTTTTTGTATTAAATAGTTTGTAAAC-----CGTTATGTATGCGTA
Amelanchier.e.1A -----GTAAC-----CGTTATGTTTGC-G
Amelanchier.18.1B TAAACAAACAATAAGCCGTATTATAAACCATGGTTTAGTTCCTCATTTACTGTCAGCGTAGTGTCCCTCGAGGTATGTTTATGATTAAATGTTTGTAAAC-----CGTTATGTATGCGTA
Malus.7.1A TAAACAGACAATAAACCTGTAT-ATAAGCAATGGTTTAGTTCCTCATTTATTGTCAGCGTAGTGTCAAGCGAGTTTGTATTGATTAAAGTTTGTGAC-----CGTTATGTATGCGTA
Malus.c.1B TAAACAAACATTAAGCCGTAT-ATAAACCATGGTTTAGTTCCTCATTTATTGTCAGTGTAGTGTCCCTCGAGGTCTGTTTTTATTAAATGTTTGTAAAC-----CGTTATGTATGCGTA
Vauquelinia.b.1A TAAACATATAAAGCCGTAT-A-----GGTTTAAATCCTACTTATTGTCAGTGTAGTGT-----AAGTCTGTTTTTGTAAATGTTTGTAAACCGGTAACCGGTTATGTTGCGTA
Vauquelinia.3.1B TAAACAAACAATAAGCCATAT-ATAAACCATGGTTTAGTTCCTCATTTATTGTCAGTGTAGTGTCCCTCGAGGTCTGTTTTTGTATTAAAGTTTGTAAAC-----TGTTATGTATGCGTA
Cotoneaster.12.1A TAAACAGACAATAAACCTGTAT-ATAAGCAATGGATTAGTTCCTCATTTAGTGTCCAGCGAGT-----TTTTTTTTTGTATTAAAGTTTGTAAAC-----TA
Cotoneaster.9.1B TAAACAAACATTAAGCCGTAC-ACAAACCATGGTTTAGTTCCTCATTTATT--CAGTCTAGTGTCCCTCGAGGTCTGTTTTTGTATTGAATGTTTGTAAAC-----CGTTATGTATGCGTA

Gillenia.b AATTTTAC-----TTTTGACATATGAACATGAATTT-AGTAACTAAT--TTGAACTTTCTTAAAG----GCAAATGGGCATCGAGTGTAGCAGATTCTCCGCGTTATGATC
Amelanchier.e.1A TATTTTCAGTAAACGAATTTCTGTTTTGGCCATGAACATGAATTT-AGCAACTAAA--TTGATCCTTCTCCAG----GCAAATGGGCATCGAGTGTAGCAGATTCTCCGCGTTATGATC
Amelanchier.18.1B AATTTTCACTAA--AAT-----TTGAACTTTCTTTCAG----GCAAATGGGCATCGAGTGTAGCAGATTCTCCGCGTTATGATC
Malus.7.1A TATTTTCAGTAAACGAATTTCT-----GGTAACTAAA--TTGATCCTTCTTTCAG----GCAAATGGGCATCGAGTGTAGCAGATTCTCCGCGTTATGATC
Malus.c.1B AATTTTCTCTAA--AAT-----TTGAACTTTCTTTCAG----GCAAATGGGCATCGAGTGTAGCAGATTCTCCGCGTTATGATC
Vauquelinia.b.1A TATTTTCAGTAAATGAATTTCTGTTTTGACCATGAACATGAATTT-GGCAACTAAA--TTGATCCTTCTTTCAG----GCAAATGGGCATCGAGTGTAGCAGATTCTCCGCGTTATGATC
Vauquelinia.3.1B AATTTTCACTAAATGTTGTTTTGACATATGAACATGAATTT-AGTAACTAAT--TTGAACTTTCTTTCAG----GCAAATGGGCATCGAGTGTAGCAGATTCTCCGCGTTATGATC
Cotoneaster.12.1A AATTTTCAGTAAACGAATTTCTGTTTTGACCATGAACATGAATTTT-GGTAACATAA--TTGATCCTTCTTTCAG----GCAAATGGGCATCGAGTGTAGCAGATTCTCCGCGTTATGATC
Cotoneaster.9.1B AATTTTCA-----CTAAAATTTGAACTTTCTTTCAG----GCAAATGGGCATCGAGTGTAGCAGATTCTCCGCGTTATGATC

Gillenia.b AGTACAAAGATGCATGGGATACAGAAGTCACTGTTGAG-----GTGTGT-AAACATATAACCTTGATCAACATTGAACTAGGACAATGAACGAATTTTTGAATGTTCAAATGATT
Amelanchier.e.1A AGTACAAAGATGCATGGGATACAGAAGTCACTGTTGAG-----GTCTGTGCAACATATAACCTTGATCAACATTGAAATAGGACAATGAATGAATTTTTGGTTGTTCAAATGATT
Amelanchier.18.1B AGTACAAAGATGCATGGGATACAGAAGTCACTGTTGAG-----GTGTG-CAAACATATAACCTTGATCAACACTGAAATAGGACAAT-----GTTCAAATGATT
Malus.7.1A AGTACAAAGATGCATGGGATACAGAAGTCACTGTTGAG-----GTGTGTGTAACATATAACCTTGATCAACATTGAAATAGGACAATGAATGAATTTTTGGTTGTTCAAATGATT
Malus.c.1B AGTACAAAGATGCATGGGATACAGAAGTCACTGTTGAG-----GTGTG-CAAACATATAACCTTGATCAACTCTGAAATAGGACAAT-----GTTCAAATGATT
Vauquelinia.b.1A AGTACAAAGATGCATGGGATACAGAAGTCACTGTTGAG-----GTGCGTGAACATGTAACCTTGATCAACATTGAAATAGGACAATGAATGAATCTTTGGTTGTTCAAATGATT
Vauquelinia.3.1B AGTACAAAGATGCATGGGATACAGAAGTCACTGTTGAG-----GTGTGT-TAACATATAACCTTGATCAACACTGAAATAGGACAAT-----GTTCAAATGATT
Cotoneaster.12.1A AGTACAAAGATGCATGGGATACAGAAGTCACTGTTGAG-----GTGCGTCAACATATAACCTTGATCAACATTGAAATAGGACAATGAATGAATTTTTGGTTGTTCAAATGATT
Cotoneaster.9.1B AGTACAAAGATGCATGGGATACAGAAGTCACTGTTGAG-----GTGTG-CAAACATATAGCCTTGATCAACACTGAAATAGGACAAT-----GTTCAAATGATT

Gillenia.b TATTCCTATCCT-----ATCTGTGTAG---CTTAAAGTGGGAGATAAAAACCGAAACAGTTGGGTTTTTTCAGTCTACAAAACGAGGAGTTGATCGCGTGTGTTGTTGATCATCCCGTGT
Amelanchier.e.1A TATTCCTATC-TGT-----GTAG---CTTGAAGTGGGAGATAAAAACCGAAACAGTTTCGATTTTTTTCAGTCTACAAAACGAGGAGTTGATCGTGTGTTTTCGTTGATCACCCTGT
Amelanchier.18.1B TATTCCTATCCTGTTTCTATCTGTGTAG---CTTAAAGTGGGAGATAAAAACCGAAACAGTTTCGATTTTTTTCAGTCTACAAAACGAGGAGTTGATCGTGTGTTTTCGTTGATCACCCTGT
Malus.7.1A TATTCCTATCCTATTCCCATCTGTGTAG---CTTAAAGTGGGAGATAAAAACCGAAACAGTTTCGATTTTTTTCAGTCTACAAAACGAGGAGTTGATCGTGTGTTTTCGTTGATCACCCTGT
Malus.c.1B TATTCCTATCCTGTTTCTATCTGTGTAG---CTTAAAGTGGGAGATAAAAACCGAAACAGTTTCGATTTTTTTCAGTCTACAAAACGAGGAGTTGATCGTGTGTTTTCGTTGATCACCCTGT
Vauquelinia.b.1A TATTCCTATC-TGT-----GTAG---CTTAAAGTGGGAGATAAAAACCGAAACAGTTTCGATTTTTTTCAGTCTACAAAACGAGGAGTTGATCGTGTGTTTTCGTTGATCACCCTGT
Vauquelinia.3.1B TATTTCTATCCGATTCCTATCTGTGTAG---CTTAAAGTGGGAGATAAAAACCGAAACAGTTTCGATTTTTTTCAGTCTACAAAACGAGGAGTTGATCGTGTGTTTTCGTTGATCACCCTGT
Cotoneaster.12.1A TATTCCTATCCTATTCCATCTGTGTAG---CTTAAAGTGGGAGATAAAAACCGAAACAGTTTCGATTTTTTTCAGTCTACAAAACGAGGAGTTGATCGTGTGTTTTCGTTGATCACCCTGT
Cotoneaster.9.1B TATTCCTATCCTGTTTCTATCTGTGTAG---CTTGAAGTGGGAGATAAAAACCGAAACAGTTTCGATTTTTTTCAGTCTACAAAACGAGGAGTTGATCGTGTGTTTTCGTTGATCACCCTGT

Gillenia.b **TTCTCGAAAAG**-----GTTTGGTCTTGTGTTT--ATTCACTGACTCTTTGCAAACACTTCCAATGTTTGGCAAATAGTATGAAAGGGAAGAAAACCTCAATTTCTTATCTGCTT
Amelanchier.e.1A **TTCTCGAAGAG**-----GTTTGGTCAATATTTTC---ACTGA-TCITTT-----CCAATGTTTGGAAATAGCATGACAAGGAAGAAACCTCAATTTCTAATCTGCTT
Amelanchier.18.1B **TTCTCGAAAAG**-----GTTTGGTCTTGTGTTT--ACTTACTGA-TCTTTTT-----TCAGTGTTTGGCAAATAGTATGAAAAGGAAGAAAACCTCAATTTCTTATCTGCTT
Malus.7.1A **TTCTCGAAAAG**-----GTGTGGTCTTATATTTT-CACTCACTGA-TCTTT-----CCAATGTTTGGAAATAGCATGACAAGGAAGAAACCTCGATTTCTTAT-----
Malus.c.1B **TTCTCGAAAAG**-----GTTTGGTCTTGTGTTT--ACTTACTGA-TCTTTT-----CCAGTGATTTGCAAATAGTATGAAAAGGAAGAAAACCTCAATTTCTTATCTGCTT
Vauquelinia.b.1A **TTCTCGAAAAG**-----GTTTGGTCTTGTATTTTCACTCACTGA-TCCTT-----CCAATGTTTGGCAAATAGCATGACAAGGAAGAAACCTCAATTTCCAATCTGCTT
Vauquelinia.3.1B **TTCTTTGAAAAG**-----GTTTGGTCTTGTGTTT--ACTTACTGA-TCTTTT-----CCAGTGTTTGGCAAATAGTATGAAAAGGAAGAAAACCTCAATTTCTTATCTGCTT
Cotoneaster.12.1A **TTCTCGAAAAG**-----GTTTGGTCTTATATTTTTCGCTCACT-----AGGAAGAAACCTCGATTTCTTATCTGCTT
Cotoneaster.9.1B **TTCTCGAAAAG**-----GTTTGGTCTTGTGTTT--ACTTACTGA-TCTTTT-----CCAGTGTTTGGCAGATAGTATGAAAAGGAAGAAAACCTCAATTTCTTATCTGCTT

Gillenia.b TTA-TGACTGGTGTGTTAAAG-----GTATGGGGGAAAACCTGCATCCAAAATTTATGGTCCGATTACTGGAGTCGATTTCAAGGACAATCAACTTAGGTTTCAAGGCTGCTATGCCAG--
Amelanchier.e.1A TTTGTGATTGGTGTGTT-AAG-----GTATGGGGGAAAACCTGCATCCAAAATTTATGGTCCGACTGCTGGAGTCGATTTCAAGGACAACCAACTTAGGTTTCAAGGCTGCTATGCCAG--
Amelanchier.18.1B TTTGTGACTGGTGTGTT-AAG-----GTATGGGGGAAAACCTGCATCGAAAATTTATGGTCCGGTACTGGAGTCGATTTCAAGGACAATCAACTTAGGTTTCAAGGCTGCTATGCCAG--
Malus.7.1A TTTGTGATTGGTGTGTT-AAG-----GTATGGGGGAAAAGCTGCATCCAAAATTTATGGTCCGGTCCGTCGCTGGGTCGATTTCAAGGACAATCAACTTAGATTAGGTTTCAAGGCTGCTATGCCAG--
Malus.c.1B TTTGTGACTGGTGTGTT-AAG-----GTATGGGGGAAAACCTGCATCGAAAATTTATGGTCCGGTACTGGAGTCGATTTCAAGGACAATCCACTTAGGTTTCAAGGCTGCTATGCCAG--
Vauquelinia.b.1A TTTGTGATTGGTGTGTT-AAG-----GTATGGGGGAAAACCTGCATCCAAAATTTATGGTCCGATTACTGGAGTCGATTTCAAGGACAATCAACTTAGGTTTCAAGGCTGCTATGCCAG--
Vauquelinia.3.1B TTTGTGACTGGTGTGTT-AAG-----GTATGGGGGAAAACCTGCATCGAAAATTTATGGTCCGGTCCGTCGCTGGAGTCGATTTCAAGGACAATCAACTTAGGTTTCAAGGCTGCTATGCCAG--
Cotoneaster.12.1A TTTGTGATTGGTGTGTT-AAG-----GTATGGGGGAAAACCTGCTTCCAAAATTTATGGTCCGGTCCGTCGCTGGAGTCGATTTCAAGGACAATCAACTTAGATTAGGTTTCAAGGCTGCTATGCCAG--
Cotoneaster.9.1B TTTGTGGCTGGTGTGTT-AAG-----GTATGGGGGAAAACCTGCATCGAAAATTTATGGTCCGGTTCGTCGGAGTCGATTTCAAGGACAATCAACTTAGGTTTCAAGGCTGCTATGCCAG--

Gillenia.b -----GTTAGTAATCTCC-GCC---TTT--CTGATACTCGTTGT-----CGC-----CTT-TCT
Amelanchier.e.1A -----GTTAGTAATCTCC-ACCCTCGTTTGTCT-ATTTTCGT-----AACGAGCGT---AAATAACACATTTTGTGGCAATCT
Amelanchier.18.1B -----GTTAGAAATCTCT-GCC---TTT--CTGA-CCTCGFCGCATTTTCCATTCAAATCCTAGTCTCTCTGCATCTGAACGAGCGTAAATAAATAACACGTTTTCTTACAAATCT
Malus.7.1A -----GTTAGTAATGTC-ACCCTCGTTTGTCT-ATTTTCGT-----AATGAGCGT---AAATAACACATTTTGTACTAA-CT
Malus.c.1B -----GTTATTTATCTCT-GCC---TTT--CTGATCCTCGTCGCGTTTTCCATTCAAATCCTCGT-----CACGAGTGAAATAAATAACACGTTTTCTTACAAATCT
Vauquelinia.b.1A -----GTTACTAATCTCC-ACCCTCGTTTGTCT-ATTTTCAT-----AACGAGCTT---AAGTAACACATTTTGTACTAA--
Vauquelinia.3.1B -----GTTAGTAATCTCT-GCC---TTT--CTGATCCTCGTCGATTTTCCATTCAAATCCTGGTCTGTCTACAT---CCGCAATGAGTGAAATAACACATTTTCTTACCATTCT
Cotoneaster.12.1A -----GTTAGTAATGTCCAACC-TCGTTTGTCT-ATTTTCGT-----AATGAGCGT---AAATAACACGTTTTGTTATCAA--
Cotoneaster.9.1B -----GTTAGTAATCTCT-GCCTGCCTTT--CTGATCCTCGTCGCATTTTCCATTCAAACCTCGTCTCTCTGCATCTGAAGGAGCGTAAATAAATAACACGTTTTCTTCAAATCT

Gillenia.b GTTATCAAATGTTTGTCTGAATGTTAA-TCTGTGCACCTTCTGATCGTATAACTTTAT-GTTTATATTTCTCGTGGTGTATGAAATATATG-TTTTAG----GCAGCTCTAGAAGCA
Amelanchier.e.1A GTTATCAAATGTTTGTATATAAATGTTAAATCTGTGCATCTTCTGATGTATA-----TTTTAG----GCAGCTCTAGTAGCA
Amelanchier.18.1B GTTATCAAATGTTTGTCTGAATTTTAA-TCTGTGTATCTTCTGATTGTATAATATTATCGTTCATATTTCTCATGGTGTATATAAATATATGTTTTAAG----GCAGCTCTAGAAGCA
Malus.7.1A GTTATCAAATGTTTGTATATAAATGTTAA-TCTATGCATCTTCTGATTGTATAA-----TTTTAG----GCAGCTCTAGTAGCA
Malus.c.1B GTTGGCAAATGTTTAAATCTGAATTTGAA-TCTGTGCATCTTCTGATTGTATAAATATTATCGTTCGATTTCTCATGGTGTATATAAATATATGTTTTAAG----GCAGCTCTAGAAGCA
Vauquelinia.b.1A -----TCTGTGCATCTTCTGA-----C-CCTGGTGTAT-AAATTGTATGTTTTTAG----GCAGCTCTAGAAGCA
Vauquelinia.3.1B GTTAGCAA-----AGAATT-----GTTTCATTTCTCATAGTTGTATAAATATATGTTTTTAG----GCAGCTCTAAAAGCA
Cotoneaster.12.1A -----GTGTTTT-----GTGCAAATGTTAATCTGTGCATCTGATTGTATAAATTTTAG----GCAGCTCTAGTAGCA
Cotoneaster.9.1B GTTAGCAAATGTTTGTCTGAATTTGAA-TCTGTGCATCTTCTGATTGTATAA-----AATTATATGTTTTAAG----GCAGCTCTAGAAGCA

Gillenia.b **CCAAGAGTCTGAATTTAAACAGCAGCAAATATTTTCTGGACCATATG**-----GTAGGCAAAACTCATATCCAATCCTCTAAACCAAC----TTTTACAAATCTTTTATGCG
Amelanchier.e.1A **CCAAGAGTCTGAATTTAAACAGCAGCAAATATTTTCTGGACCATATG**-----GTAGGCAAAACTCATCTCCAATCTTTTAAACCAACACCCTTTTACTAAATCTTTTACGGG
Amelanchier.18.1B **CCAAGAGTCTGAATTTAGACAGCAGCAAAGATTTTCTGGACCATATG**-----GTAGGCAAAACTCATCTCCAATCTCTAAACCAACACCCTTTT-GAAAATCTTTTATGCA
Malus.7.1A **CCAAGAGTCTGAACCTTAAACAGCAGCAAATATTTTCTGGACCATATG**-----GTAGGCAAAACTCATCTCCAATCTTTTAAACCAACACCCTTTTAAACCAATCTTTTACGGG
Malus.c.1B **CCAAGAGTCTGAATTTAAACAGCAGCAAATATTTTCTGGACCATATG**-----GTAGGCAAAACTCATCTCCAATCTTAAACCAACACCCTTTT-GAAAATCTTTTACGCA
Vauquelinia.b.1A **CCAAGAGTCTGAACCTTAAACAGCAGCAAATATTTTCTGGACCATATG**-----GTAGGCAAAACTCATCTCCAATCTTTAAACCAACACCCTTTTAAACCAATCTTTTATGCG
Vauquelinia.3.1B **CCAAGAGTCTGAATTTAAACAGCAGCAAATATTTTCTGGACCATATG**-----GTAGGCAAAACCCTCTCCAATCTTAAACCAACACCCTTTTAAACCAACCAAGTTAT-GAAAATCAATTTAGGCA
Cotoneaster.12.1A **CCAAGAGTCTGAACCTTAAACAGCAGCAAATATTTTCTGGACCATATG**-----GTAGGCAAAACTCATCTCCAATCTTTTAAACCAACACCCTTTTAAACCAATCTTTTACGGG
Cotoneaster.9.1B **CCAAGAGTCTGAATTTAAACAGCAGCAAATATTTTCTGGACCATATG**-----GTAGGCAAAACTCATCCCCAGTCTCTAAACCAACACCCTTTT-GAGAATCTTTTATGCA

Gillenia.b TTAATTTGGTACTGCAACATTGCTGCGTGCAG-----GGGAAGAAGTCTGTTTTTCATTGCCAACGATTGGCACACCGCCTTCTCCGTGCTACCTGAAAGCCATTACAAACCTAAAGG
Amelanchier.e.1A TTAATTTGGTAGTATGACATTTCTGCTGCGTGCAG-----GGGAAGAAGTCTGTTTTTCATTGCCAACGATTGGCACACCGCCTTCTCCGTGCTACCTGAAAGCCATATACAAACCTAAAGG
Amelanchier.18.1B TGAATTTGGTACCATGGCGTTGCTGCGTGCAG-----GGGAAGAAGTCTGTTTTTCATTGCCAACGATTGGCACACCGCCTTCTCCGTGCTACCTGAAAGCCGATATACAAACCTAGAGG
Malus.7.1A TTAATTTGGTGGTACGACATTTCTGCTGCGTGCAG-----GGGAAGAAGTCTGTTTTTCATTGCCAACGATTGGCACACCGCCTTCTCCGTGCTACCTGAAAGCCATATACAAAGCCTAAAGG
Malus.c.1B CGAATTTGGTACGATGGCGTTGCTGCGTGCAG-----GGGAAGAAGTCTGTTTTTCATTGCCAACGATTGGCACACCGCCTTCTCCGTGCTACCTGAAAGCCGATATACAAACCTAGAGG
Vauquelinia.b.1A TTAATTTGGTAAATACGACATTTCTGCTGCGTGCAG-----GGGAAGAAGTCTGTTTTTCATTGCCAACGATTGGCACACCGCCTTCTCCGTGCTACCTGAAAGCCATATACAAAGCCTAAAGG
Vauquelinia.3.1B TTAATTTGGTACAATGGCGTTGCTGCGTGCAG-----GGGAAGAAGTCTGTTTTTCATTGCCAACGATTGGCACACCGCCTTCTCCGTGCTACCTGAAAGCCATATACAAACCTAAAGG
Cotoneaster.12.1A TTAATTTGGTAGTACAACTTTCTGCTGCGTGCAG-----GGGAAGAAGTCTGTTTTTCATTGCCAACGATTGGCACACCGCCTTCTCCGTGCTACCTGAAAGCCATATACAAAGCCTAAAGG
Cotoneaster.9.1B TGAATTTGGTACGATGGCGTTGCTGCGTGCAG-----GGGAAGAAGTCTGTTTTTCATTGCCAACGATTGGCACACCGCCTTCTCCGTGCTACCTGAAAGCCGATATACAAACCTAGAGG

Gillenia.b CATATACAAGACCGCCAAA-----GTAGCATTGTCATTACAAACATTGCTTACCAAGGCAGATTGCGCTTTGCGAGACTTTGCACTTCTCAATCTGCCCGATGAATTTAAGAGC
Amelanchier.e.1A CATATACAAGACCGCCAAA-----GTAGCCTTTTGCATTACAAACATTGCTTACCAAGGCAGATTGCTTTTGTGACTTTGCACTTCTCAATCTGCCCGATGAATTTAAGAGC
Amelanchier.18.1B TATTTACAGCACTGCCAAA-----GTAGCCTTTTGCATTACAAACATTGCTTACCAAGGCAGATTGCTTTTGTGACTTTGCACTTCTCAATCTGCCCGATGAATTTAAGAGC
Malus.7.1A CATATACAAGACCGCCAAA-----GTAGCCTTTTGCATTACAAACATTGCTTACCAAGGCAGATTGCTTTTGTGACTTTGCACTTCTCAATCTGCCCGATGAATTTAAGAGC
Malus.c.1B TATTTACAGCACTGCCAAA-----GTAGCCTTTTGCATTACAAACATTGCTTACCAAGGCAGATTGCTTTTGTGACTTTGCACTTCTCAATCTGCCCGATGAATTTAAGAGC
Vauquelinia.b.1A CATGTACAAGACCGCCAAA-----GTAGCCTTTTGCATTACAAACATTGCTTACCAAGGCAGATTGCTTTTGTGACTTTGCACTTCTCAATCTGCCCGATGAATTTAAGAGC
Vauquelinia.3.1B CATTTACTATACTGCCAAA-----GTAGCCTTTTGCATTACAAACATTGCTTACCAAGGCAGATTGCTTTTGTGACTTTGCACTTCTCAATCTGCCCGATGAATTTAAGAGC
Cotoneaster.12.1A CATATATAAGACCGCCAAA-----GTAGCCTTTTGCATTACAAACATTGCTTACCAAGGCAGATTGCTTTTGTGACTTTGCACTTCTCAATCTGCCCGATGAATTTAAGAGC
Cotoneaster.9.1B TCTTTACAGCACTGCCAAA-----GTAGCCTTTTGCATTACAAACATTGCTTACCAAGGCAGATTGCTTTTGTGACTTTGCACTTCTCAATCTGCCCGATGAATTTAAGAGC

Gillenia.b TCATTTCGATTTTCATTGATGG-----GTAAGTTTTTTTGTACAG---ATATAACATAGACTGCATTACTATTTTATGACTGAAACTTGAGTATGAT-----TGCTTC-AATT
Amelanchier.e.1A TCGTTTGATTTTCATTGACGG-----GTAAGTTTTTTTGT---CAGTTTTTAAATAGCGTAGACTGCATA-GCGTTATCTGACTGAAAGTAGAGTATGAT-----TGTTTC-AATT
Amelanchier.18.1B TCGTTTCGATTTTCATTGATGG-----GTATGGTTTTTTTGCACGGG---ATATAGC--AGACTGTATAATGATTTATGTGATTGAAACTTGAGTGTGA-----TTGTTCTGATT
Malus.7.1A TCGTTTCGATTTTCATTGACGG-----GTAAG--TTTTTTCGCGAGTTTTTAAATAGCGTAGACCGC--TTAGCATTATCTGACTGAAAGTTGAGTATGAT-----TGTTTC-AATT
Malus.c.1B TCGTTTCGATTTTCATTGATGG-----GTATGGTTTTTTTGCACAGG---ATATAGC--AGACTGTATAATGATTTATGTGATTGAAACTTGAGTGTGA-----TTGTTCTGATT
Vauquelinia.b.1A TCGTTTCGATTTTCATTGACGG-----GTAAGTTTTTTT---CGCAATTTATAATAGCGTAGACCGCATG-GCGTTATATGACTGAAACTTGAGTATGAT-----TGTTTC-AATT
Vauquelinia.3.1B CCGTTTCGATTTTCATTGATGG-----GTATGGTTTTTTTTCAGTGA---ATGTAGC--AGACTGTATAATAATTTATGTGATTGAAACTTGAGTGTGATGAGCGTATTTTGGATT
Cotoneaster.12.1A TCGTTTCGATTTTCATTGACGG-----GTAAGTTTTTTTTCGAG--TTTTTAAATAGCGTAGACCGCATA-GCGTTATCTGACTGAAAGTTGAGTATGAT-----TGTTTC-AATT
Cotoneaster.9.1B TCGTTTCGATTTTCATTGATGG-----GTATGGTTTTTTTGCACGGG---ATATAGC--AGACTGTATAATGATTTGTGATTGAAACTTGAGTGTGT-----CTGTTCTGATT

Gillenia.b CCACAG-----GTATGACAAAACCGCCAAAGGGGAGGAAAATTAACCTGGATGAAAGCCGGAATCTTGGAAATCAGACAAGGCTTTGACCGTTAGCCCATACTACGCCGAAGAACTTGTTTC
Amelanchier.e.1A CCGCAG-----GTATGACAAAACCGTAAAGGGGAGGAAAATTAACCTGGATGAAAGCCGGAATCTTGGAAATCAGACAAGGCTTTGACTGTGACGCCCATACTACGCCGAAGAACTTGTTTC
Amelanchier.18.1B CCACAG-----CAATGAGAAGCCGGTGAAGGGGAGGAAAATTAACCTGGATGAAAGCCGGAATTTTGGAAATCAGACAAGGCTTTGACCGTTAGCCCATACTACGCCGAAGAACTTGTTTC
Malus.c.1B TCACAG-----GTATGACAAAACCGCRAAGGGGAGGAAAATTAACCTGGATGAAAGCCGGAATCTTGGAAATCAGACAAGGCTTTGACTGTGACCCCATACTATGCCGAAGAACTTGTTTC
Malus.c.1B CCACAG-----CTCTGAGAAGCCGGTTAAGGGGAGGAAAATTAACCTGGATGAAAGCCGGAATTTTGGAAATCAGACAAGGCTTTGACCGTTAGCCCATACTATGCCGAAGAACTTGTTTC
Vauquelinia.b.1A CCACAG-----GTATGACAAAACCTGTGAAGGGGAGGAAAATTAACCTGGATGAAAGCCGGAATCTTGGAAATCAGACAAGGCTTTGACCGTTAGCCCATACTACGCCGAAGAACTTGTTTC
Vauquelinia.3.1B CCACAG-----CTATGACAAAGCCGTTGAAGGGGAGGAAAATTAACCTGGATGAAAGCCGGAATCTTGGAAATCAGACAAGGCTTTGACCGTTAGCCCATACTATGCCGAAGAACTTGTTTC
Cotoneaster.12.1A CCACAG-----GTATGACAAAACCGTAAAGGGGAGGAAAATTAACCTGGATGAAAGCCGGAATCTTGGAAATCAGACAAGGCTTTGACTGTGACCCCATACTACGCCGAAGAACTTGTTTC
Cotoneaster.9.1B CCACAG-----CTATGAGAAGCCGGTGAAGGGGAGGAAAATTAACCTGGATGAAAGCCGGAATTTTGGAAATCAGACAAGGCTTTGACCGTTAGCCCATATTTATGCCGAAGAACTTGTTTC

Gillenia.b TGCAGTTGAAAAAGGAGTTCGAATTTGGATAACATTATTCGGAATACTGGAATTTGGAATTTGTAATGGCATGGACGTTCCAGGAGTGGAAATCCCTTAACTGACAAGTATACAACTGTCAA
Amelanchier.e.1A TTCAGTTGAAAAAGGAGTTGAATTTGGATAACATTATTCGGAATACTGGAATTTGGAATTTGGAATTTGTAATGGCATGGACGTTCCAGGAAATCCCTTAACTGACAAGTATACAACTGTCAA
Amelanchier.18.1B TGCGGTTGAAAAAGGAGTTCGAATTTGGATAACATTATTCGGAATACTGGAATTTTGGAAATTTGTAATGGTATGGACGTTCCAGGAAATGGAAATCCCTTAACTGACAAGTATACAACTGTCAA
Malus.7.1A TTCAGTTGAAAAAGGAGTTGAATTTGGATAACATTATTCGGAATACTGGAATTTCAAGGAATTTGTAATGGCATGGACGTTCCAGGAAATGGAAATCCCTTAACTGACAAGTATACAACTGTCAA
Malus.c.1B TGCGGTTGAAAAAGGAGTTCGAGTTGGATGACATTATTCGGAATACTGGAATTTTGGAAATTTGTAATGGTATGGACGTTCCAGGAAATGGAAATCCCTTAACTGACAAGTATACAACTGTCAA
Vauquelinia.b.1A TTCAGTTGAAAAAGGAGTTCGAATTTGGATAACATTATTCGGAATACTGGAATTTCAAGGAATTTGTAATGGCATGGACGTTCCAGGAAATGGAAATCCCTTAACTGACAAGTATACAACTGTCAA
Vauquelinia.3.1B TGCAGTTGAAAAAGGAGTTGAATTTGGATAACATTATTCGGAATACTGGAATTTGGAATTTGTAATGGCATGGACGTTCCAGGAAATGGAAATCCCTTAACTGACAAGTATACAACTGTCAA
Cotoneaster.12.1A TTCAGTTGAAAAAGGAGTTGAATTTGGATAACATTATTCGGAATACTGGAATTTGGAATTTGTAATGGCATGGACGTTCCAGGAAATGGAAATCCCTTAACTGACAAGTATACAACTGTCAA
Cotoneaster.9.1B TGCGGTTGAAAAAGGAGTTCGAGTTGGATGACATTATTCGGAATACTGGAATTTTGGAAATTTGTAATGGTATGGACGTTCCAGGAAATGGAAATCCCTTAACTGACAAGTATACAACTGTCAA

Gillenia.b **ATACGACGCTTCAACT**-----GTAAGACCATTATCGTACAACAACCTCCATAACTGCACCTGCGTGCAAATCTTT-GATTCATAT-----GGCAATAAATTTGAAA-TTT
Amelanchier.e.1A **ATATGATGCTTCAACT**-----GTAAGAATACTCATCGTACAAA---CTTCCATAACCGCACTGCGTGCAAATCTTT-GATTCGTAT-----GGCAATGACTCTTTAAA-TTT
Amelanchier.18.1B **ATACAACGCTTCAACT**-----GTAAGAATAATCGTTGACTAAAACCTCCTTAACCGTAATTCGCGTAACTTCTTTGATTCGTAT-----GGCAATAACTCTTGAAGCTTT
Malus.7.1A **ATATGATGCTTCAACT**-----GTAAGAATACTCATCGTACAAA---CTTCCATAACCGCACTGCGTGCAAATCTAT-GATTTGTAT-----GGCAATGACTCTTTAAA-TTT
Malus.c.1B **ATACGACGCTTCAACT**-----GTAAGAATACTCATGTACAAAACTCCTTAACCGTAGTTCGTGTAACCTCTTTGATTCGTATCATGTATGGCAATGACTCTTGAACCTTT
Vauquelinia.b.1A **ATATGATGCTTCAACT**-----GTAAGAATACTCATCGGACAACAACCTCCATAACCGCACTGCGTGCAAATCTTT-GATTCGTAT-----GGCAATGACTCTTGAACCTTT
Vauquelinia.3.1B **ATACGACGCTTCAACT**-----GTAAGAATACTCATCGTACAAGAACCTCCTTAACCGTACTGCGTGTAACCTTCTAT-GATTCGTAT-----GCCAATAACTCTTGAACCTTT
Cotoneaster.12.1A **ATATGATGCTTCAACT**-----GTAAGAATACTCATCATACAAA---CTTCCATAACTGCACCGCGTGCAAATCTTT-GATTCGTAT-----GGCAATGACTTT--AAA-TTT
Cotoneaster.9.1B **ATTGACGCTTCAACT**-----GTAAGAATACTCATGTACAAAACTCCTTAACCGTAATTCGTGTAACCTGTTTTGATTCGTAT-----GGCAATAACTCTTGAACCTTT

Gillenia.b GGCTTGCTTAG-----GTGGCTGATGCAAAGCCTCTTTTGAAGAAGCCCTCCAAGCAGAAGTCGGATTGCCGGTGGATAGAGACATTCCTGTGCATAGGGTTCATTGGCAGGCTAGAA
Amelanchier.e.1A GACTTGCTTAG-----GTGGCTGATGCAAAGCCTCTTTTGAAGAAGCCCTCCAAGCAGAAGTCGGACTGCCGGTGGATAGAGACATCCCTGTGCATAGGGTTCATTGGCAGGCTAGAA
Amelanchier.18.1B GGCTTACTTAG-----GTGGCTGATGCAAAGCCTCTTCTGAAAGAAACCCCTCAAGAGAAGTCGGATTGCCGGTGGATAGAGACATCCCTGTGCATAGGGTTCATTGGCAGGCTAGAA
Malus.7.1A GACTTGCTTAG-----GTGGCTGATGCAAAGCCTCTTTTGAAGAAGCCCTCCAAGCAGAAGTCGGACTGCCGGTGGATAGAGACATCCCTGTGCATAGGGTTCATTGGCAGGCTAGAA
Malus.c.1B GGCTTGCTTAG-----GTGGCTGATGCAAAGCCTCTTCTGAAAGAAACCCCTCCAAGCAGAAGTCGGATTGCCGGTGGATAGAGACATCCCTGTGCATAGGGTTCATTGGCAGGCTAGAA
Vauquelinia.b.1A GACTTGCTTAG-----GTGGCTGATGCAAAGCCTCTTTTGAAGAAGCCCTCCAAGCAGAAGTCGGATTGCCGGTGGATAGAGACATCCCTGTGCATAGGGTTCATTGGCAGGCTAGAA
Vauquelinia.3.1B GGCTTGCTTAG-----GTGGCTGATGCAAAGCCTCTTTTGAAGAAGCCCTCCAAGCAGAAGTCGGATTGCCGGTGGATAAAGACATTCCTGTGCATAGGTTGCATTGGCAGGCTAGAA
Cotoneaster.12.1A GACTTGCTTAG-----GTGGCTGATGCAAAGCCTCTTTTGAAGAAGCCCTCCAAGCAGAAGTCGGACTGCCGGTGGATAGAGACATCCCTGTGCATAGGGTTCATTGGCAGGCTAGAA
Cotoneaster.9.1B GGCTTGCTTAG-----GTGGCTGATGCAAAGCCTCTTCTGAAAGAAACCCCTCCAAGCAGAAGTCGGATTGCCGGTGGATAGAGACACCCCTGTGCATAGGGTTCATTGGCAGGCTAGAA

Gillenia.b **GAG**
Amelanchier.e.1A **GAG**
Amelanchier.18.1B **GAG**
Malus.7.1A **GAG**
Malus.c.1B **GAG**
Vauquelinia.b.1A **GAG**
Vauquelinia.3.1B **GAG**
Cotoneaster.12.1A **GAG**
Cotoneaster.9.1B **GAG**

6

Gillenia. a CTGGTGGACTCGGTGATGTTCTTGGAGGCTCCACCGGCTATGGCG-----GTTAGTCAATTTCTA---GAATTTGTTCTGTGATTTT-ATGTTTCATCAGTAGGTTTAATT
Amelanchier. c2. 2B CTGGTGGACTCGGTGATGTTCTTGGAGGACTTCCACCGGCTATGGCG-----GTTAGTGAATTTTT---AAGTTTGATCTGTGAGTTTCACATTTTCATCTCATTGGGTCTAATT
Amelanchier. 18. 2A CTGGTGGACTCGGTGATGTTCTTGGAGGACTCCACCGGCAATGGCG-----GTTAGTCAATTTTCAT---AAGTTT--TCGTGATTTTCACATTTTCATCTCATTGGGTTAATT
Malus. c14. 2B CTGGTGGACTCGGTGATGTTCTTGGAGGACTTCCACCGGCTATGGCG-----GTTAGTGAATTTTTA---AAGTTTGATCTGTGAGTTTCACATTTTCATCTCATTGGATTTAATT
Malus. c3. 2A CTGGTGGACTCGGTGATGTTCTTGGAGGACTTCCACCGGCAATGGCG-----GTTAGTCAATTTTCAT---AAGTTT--TCGTGATTTTCACATTTTCATCTCATTGGGTTAATT
Vauquelinia. 2. 2B CTGGTGGACTCGGTGATGTTCTTGGAGGACTCCACCGGCTATGGCG-----GTTAGTGAATTTTTTTTGGAGTTTGTATCTGTGAATTTTCACATTTTCATCTCATTGGGATAAATT
Vauquelinia. 1. 2A CTGGTGGACTCGGTGATGTTCTTGGAGGACTCCACCGGCACTGGCG-----GTTAGTCAATTTTCAT---AAGTTT--TCGTGATTTTCACATTTTCATCTCATTGGGTTAATT
Cotoneaster. 14. 2A CTGGTGGACTCGGTGATGTTCTTGGAGGACTTCCACCGGCTATGGCG-----GTTAGTCAATTTTCAT---AAGTTT--TCGTGATTTTCACATTTTCATCTCATTGGGTTAATT
Cotoneaster. 1. 2B CTGGTGGACTCGGTGATGTTCTTGGAGGACTTCCACCGGCTATGGCG-----GTTATTGAATTTTT---AAGTTTGATCTGTGAGTTTCACATTTTCATCTCATTGGGTTAATT

Gillenia. a GAACTGATTTTTGTGCCTGATTCAATGTTTAG-----GCTAACGGGCACCGTGTATGACCGTGTCTCCACGCTACGACCAGTACAAAGATGCATGGGACACTAGTGTACCA
Amelanchier. c2. 2B GAACTGATTTTTGTGCCTGATTCAATTTCCAG-----GCTAACGGGCACCGTGTATGACCGTGTCTCCACGCTACGACCAGTACAAAGATGCATGGGACACTAATGTACTA
Amelanchier. 18. 2A GAACTGATTTTTTATTCTGTATCCATGCTAG-----GCTAACGGGCACCGTGTATGACCGTGTCTCCACGCTACGATCAGTACAAAGATGCATGGGACACTGGTGTACCG
Malus. c14. 2B GAACTGATTTTTGTGCCTGGTTCAATTTCTAG-----GCTAACGGGCACCGTGTATGACCGTGTCTCCACGCTACGACCAGTACAAAGATGCATGGGACACTAGTGTACTA
Malus. c3. 2A GAACTGATTTTTATTCTGATTCAATGCTAG-----GCTAACGGGCACCGTGTATGACCGTGTCTCCACGCTACGATCAGTACAAAGATGCATGGGACACTGGTGTACCG
Vauquelinia. 2. 2B GAACTGATTTTTGTGCCTGATTCAATGCTAG-----GCTAACGGGCACCGTGTATGACCGTGTCTCCACGCTACGACCAGTACAAAGATGCATGGGACACTGGTGTACTA
Vauquelinia. 1. 2A GAACTGATTTTTATTCTGATTCTGTATAG-----GCTAACGGGCACCGTGTATGACCGTGTCTCCGCGCTATGACCAGTACAAAGATGCATGGGACACTGGTGTACTA
Cotoneaster. 14. 2A GAACTGATTTTTATTCTGATTCAATGCTAG-----GCTAACGGGCACCGTGTATGACCGTGTCTCCACGCTACGATCAGTACAAAGATGCATGGGACACTGGTGTACCA
Cotoneaster. 1. 2B GAACTGATTTTTGTGCCTGATTCAATTTCTAG-----GCTAACGGGCACCGTGTATGACCGTGTCTCCACGCTACGACCAGTACAAAGATGCATGGGACACTAGTGTACTA

Gillenia. a GTTGAG-----GTGAGATTTGCAGATAC-ATATATG-----CAATGTTACATGTTTTTCAGAAATGCTTTAGTAGTTTTTCATGGTTTCAGTCCGTAATGCACGCTTCG
Amelanchier. c2. 2B GTTGAG-----GTAAAATTTGCAGATTC--TGTATGCTTCTTATACTTGAACAATGTTACGTTGTTTCGGAGATACCTTCGCATTTTCATGTTTCAGTGTAGTAATGTATGCTTTA
Amelanchier. 18. 2A GTTGAG-----GTAAGATTTGCTGATAT--TATATGCTTCTTATTCTGTACAGTGTACATGTTTTCGAAAAATGTTTTTCGTAGTTTTATGTTTCGGTGTAGTAATGTATGCCCTG
Malus. c14. 2B GTTGAG-----GTAAGATCTGCAGATTC--AATATGCTCCATATACTTGAACAATGTTAAAATGTTTTTCGGAGATGCTTTTCGCAGTTTCATGCTTCAGTGTAGTAATGTATGCTTTG
Malus. c3. 2A GTTGAG-----GTAAGATTTGCTGATAT--TATATGCTTCTTATTCTTACAGTGTACATGTTTTCGAAAAATGTTTTTCGTAGTTTTATGTTTCGGTGTAGTAATGTATGCCCTG
Vauquelinia. 2. 2B GTTGAT-----GTAAGATTTGCAGATTC--TATACGCTTCTTATACTTGAACAATGTTACATTTTTTCGGAGATGCTTTTCGCAGTTTCATGTGTCAATGAGTAATGTATAGTTTG
Vauquelinia. 1. 2A GTTGAG-----GTAAGATTTGCAGATAT--TATATGCTTCTTATACTTGTACAGTGTACATGTTTTCGAAAAATGTTTTTCGTAGTTTTTCATGCTTCAGTGTAGTAAT--TATGCCCTG
Cotoneaster. 14. 2A GTTGAG-----GTAAGATTTGCAGATATATATATGCTTCTTATACTTGTAAAATGTTGCATTTTCGAAAAATGTTTTTCGTAGTTTTTCATGTTTCAGTGTAGTAATGTATGCCCTG
Cotoneaster. 1. 2B GTTGAG-----GTAAGATTTGCAGATTC--TATATGCTTCTTATACTTGAACAATGTTAAAATGTTTTTCGGAGATGCTTTTCGCAGTTTCATGCTTCAGTGTAGTAATGTATGCTTTG

Gillenia. a AGGGAAAATCTCCTTGAATAATCAGAA-GTTTT--GTGTATGCAG-----ATAGAAGTTGGTGGTAGAGTTGAAACTGTTTCGCTTCTTCCACTGCTACAAAACGGGGTGTGATCGT
Amelanchier. c2. 2B GTGGAAAATCTCCTTGAATGATCAAAA-GTT--GTATGTATACAG-----ATAGAAGTTGGTGGTAGGGTTGAAACTGTTTCGCTTCTTCCACTGCTACAAAACGGGGAGTTGATCGT
Amelanchier. 18. 2A GTGGTTATTTTCTTGAATGATCAGAA-GTTTTGTGTGTGCAG-----ATAGAAGTTGGTGGTAGGGTTGAAACTGTTTCGCTTCTTCCACTGCTACAAAACGGGGAGTTGATCGT
Malus. c14. 2B GTGGAAAATCTCCTTGAATGATCAAAA-GTT--CTATGTATACAG-----ATAGAAGTTGGTGGTAGGGTTGAAACTGTTTCGCTTCTTCCACTGCTACAAAACGGGGAGTTGATCGT
Malus. c3. 2A GTGGTTATTTTCTTGAATGATCAGAA-GTTTTGTGTGTGCAG-----ATAGAAGTTGGTGGTAGGGTTGAAACTGTTTCGCTTCTTCCACTGCTACAAAACGGGGAGTTGATCGT
Vauquelinia. 2. 2B GTGGAAAATCTCCTTGAATGATCAGAA-GTT--TATGTATGCAG-----ATAGAAGTTGGTGGTAGGGTTGAAACTGTTTCGCTTCTTCCACTGCTACAAAACGGGGAGTTGATCGT
Vauquelinia. 1. 2A GTGGATTTTTCTTAAATGATCAGAAAAGTTTTGTGTATGCAG-----ATAGAAGTTGGTGGTAGGGTTGAAACTGTTTCGCTTATTCCACTGCTACAAAACGGGAAGTTGATCGT
Cotoneaster. 14. 2A GTGGGATATTTTCTTGAATGATCAGAA-GTTTTGTGTATATGCAG-----ATAGAAGTTGGTGGTAGGGTTGAAACTGTTTCGCTTCTTCCACTGCTACAAAACGGGGAGTTGATCGC
Cotoneaster. 1. 2B GTGGAAAATCTCCTTGAATGATCAAAA-GTT--CTATGTATACAG-----ATAGAAGTTGGTGGTAGGGTTGAAACTGTTTCGCTTCTTCCACTGCTACAAAACGGGGAGTTGATCGT

Gillenia. a GTCTTTGTGTAGTACCCACTGTTCCCTTGAGAGG-----GTACG-AACTTTCTTTTGTGTTCTAA-GGCCA--TG-----TATG--GAATGAGGGTCAATTAGAT
Amelanchier. c2. 2B GTCTTTGTGGATACCCACTGTCCTTGGAGAAG-----GTATGGAATTTATTTCCAATTTGCTAA-GGCTATTTGCTGAAAAGTTTCTTGGATATTGTATGAATATGTGTTGAATTAGAT
Amelanchier. 18. 2A GTCTTTGTGGATACCCACTCGTTCCTTGGAGAGA-----GTACG-AATTTTCTTTTGTGTTCTAA-GG---TTG---AAAACCTTAGATTATTGAATGAATGAGGGTTCAGTTAGAT
Malus. c14. 2B GTCTTTGTGGATACCCACTGTTCCCTTGGAGAAG-----GTATGAAATTTATTTCCAATTTGCTAA-GGCTATTTGCTGATAGTTTCTAGGATATGTATGAATATGTGTTGAATTAGAT
Malus. c3. 2A GTCTTTGTGGATACCCACTCGTTCCTTGGAGAGA-----GTATG-AATTTTCTTTTGTGTTCTAA-GG---TTG---AGAACTTCTAGATTATTGAATGAATGAGGGTTCAGTTAGAT
Vauquelinia. 2. 2B GTCTTTGTGGATACCCACTGTTCCCTTGGAGAGG-----GTATGAAATGATTTTTCG-TTGTCTAA-GGCTATTTGCTGAAAAGTTTCTAGGATATGTATGAATATGTGTTGAATTAGAT
Vauquelinia. 1. 2A GTCTTTGTGGATACCCACTGTTCCCTTGGAGAGA-----GTATG-AATCTTCTTTTGTGTTCTAA-GG---TTG---AAAACCTTAGATTATTGTATGAATGAGGGTTCAGTTAGAT
Cotoneaster. 14. 2A GTCTTTGTAGATACCCACTCGTTCCTTGGAGAGA-----GTATG-AATTTTCTTCTGTTGTTCTAA-GG---TTG---AAAACCTTAGATTATTGTATGAATGAGGGTTCAGTTAGAT
Cotoneaster. 1. 2B GTCTTTGTGGATACCCACTGTTCCCTTGGAGAAG-----GTATGAAATTTATTTCCAATTTGCTAAAGGCTATTTGCTGAAAAGTTTCTAGGATATGTATGAATATGTGTTGAATTAGAT

Gillenia. a CTTTTAACTGATGCTGGA-CTTTCTGGATATGAAG-----GTATGGGGTAAAACCGAATCCAAAATCTATGGCCGAGGGCAGGAGTGGATTACACAGACAACCAATTCGCTTCAGCT
 Amelanchier. c2. 2B CTT-CAACTGATGCTTGAGGAATGTGGATGTGAAG-----GTATGGGGTAAAACCGAATCCAAAATCTATGGCCGAGGGCAGGAGTGGACTACATGGACAACCAATTCGCTTCAGCT
 Amelanchier. 18. 2A CTC-TGACTGATGCTTGA-TTTTCTGGATACGAAG-----GTATGGGGCAAACCTGGATCCAAAATCTATGGCCCAAGTGCAGGACAGGATTACAAGGACAACCAATTCGCTTCAGCT
 Malus. c14. 2B CTT-CAACTGATGCTTGAGCAATGTGGATGTGAAG-----GTATGGGGTAAAACCGGATCCAAAATCTATGGCCGAGGGCAGGAGTGGACTACATGGACAACCAATTCGCTTCAGCT
 Malus. c3. 2A CTC-TGACTGATGCTTGA-TTTTCTGGATACGAAG-----GTATGGGGCAAACCTGGATCCAAAATCTATGGCCCAAGTGCAGGAGAGGATTACAAGGACAACCAATTCGCTTCAGCT
 Vauquelinia. 2. 2B CTT-CAACTGATGCTTGAGCTATGTGGATGTGAAG-----GTATGGGGTAAAACCGGATCCAAAATCTATGGCCGAGGGCAGGAGTGGATTACAGGACAACCAATTCGCTTCAGCT
 Vauquelinia. 1. 2A ATT-TGACTGATGCTTGA-TTTTCTGGATATGAAG-----GTATGGGGTAAAACCTGGATCCAAAATCTATGGCCGAGGGCAGGAGTGGATTACAAGGACAACCAATTCGCTTCAGCT
 Cotoneaster. 14. 2A CCC-TGACTGATGCTTGA-TTTTCTGGATACGAAG-----GTATGGGGCAAACCTGGATCCAAAATCTATGGCCGAGTGCAGGAGAGGATTACAATGACAACCAATTCGCTTCAGCT
 Cotoneaster. 1. 2B CTT-CAACTGATGCTTGAGCAATGTGGATGTGAAG-----GTATGGGGTAAAACCGAATCCAAAATCTATGGCCGAGGGCAGGGGAGGACTACATGGACAACCAATTCGCTTCAGCT

Gillenia. a TGTTGTGCCAG-----GCATGTCGTCTTTAGTTTATTATTTCTCTAACTTGAGAAATATCCGCTTGAAAAGATAGAAA-CGAAAACATCTCGGTGTACACAATTTCA
 Amelanchier. c2. 2B TGATGTGCCAG-----GCATGTCATGCTCTTT-GTTTGATTTATTTTTCTCAAACCTTAGAAAATATCCGCTTGAAAAGATAGAAAATGAAAATCTCTCGGTGTATCTAATTTA
 Amelanchier. 18. 2A TGTTGTGCCAG-----GCATGTCATGTTCTTTTGTGGATTTATTTTTCTCTAACTTGAGAAA-TTATCCACTTGAAAGGATAGAAA-TCAAACATATCCCGTCTTA--TAATTTCA
 Malus. c14. 2B TGCTGTGCCAG-----GCATGTCATGCTCTTT-GTTTGATTTATTTTTCTCAAACCTTAGAAAATATCCGCTTGAAAAGACAGAAAATGAAAATCTCTCGGTGTATCTAATTTA
 Malus. c3. 2A TGTTGTGCCAG-----GCATGTCATGTTCTTTTGTGGATTTATTTTTCTCTAACTTGAGAAA-TTATCCACTTGAGGAAATAGAAA-TCAAACATATCCCGTCTTA--TAATTTCA
 Vauquelinia. 2. 2B TGTTGTGCCAG-----GCATGTCCTGCTCTTT-GTTTGATTTATTTCTCTCTAACTTGAGAAAATATCCGCTTGAAAAGATAGAAA-TGAAAATCTCTCGGTGTATCTAATTT--
 Vauquelinia. 1. 2A TGTTGTGCCAG-----GCATGTCATGTTTTTTTGTGGATTTATTTTT-CTCTAACTTGAGAAAATATCCACTTGAAAGGATAGAAA-TCAAACATATCCCGTCTTA--TAATTTCA
 Cotoneaster. 14. 2A TGTTGTGCCAG-----GCAAGTCATGTTCTCTGTTTGTATTATTTTTCTCTAACTTGAGAAAATATCCACTTGAAAGGAAATAGAAA-TCAAACATATCCCGTCTTA----TTCA
 Cotoneaster. 1. 2B TGCTGTGCCAG-----GCATGTCATGCTCTTT-GTTTGATTTATTTTTCTCAAACCTTAGAAAATATCCGCTTGAAAAGATAGAAAATGAAAACATCTCTCGGTGTATCTAA----

Gillenia. a TCGGAGGATTTCTCCGAAAAAGAAATAGATGAACCTTACAAACATG-----CATGAAGTTCAACTACGAATTTTTCGAACTTTCAG-----GCTGCTTTGGAGGCCACCAAGGG
 Amelanchier. c2. 2B TCGGAGGATTTCTTACGAAAAGCAATGGATGAATCTTACAAACCTGAAACATGCATAAAGTTCAATTTGCGATTTTTCCATCTTTCAG-----GCTGCTTTGGAGGCCACCAAGGG
 Amelanchier. 18. 2A TCCGAGTATTTCTCCGCGAAAAAGAAATAGATGAGTCTTACAAACACG-----CATAAAGTTCAATTTACAAATTTTTCAAACCTTTCAG-----GCTGCTTTGGAGGCCACCAAGGG
 Malus. c14. 2B TCGGAGGATTTCTTACGAAAAGCAATGGATGAATCTTACAAACCCGAAACACGCATAAGGTTCAATTTGTGATTTTCAG-----GCTGCTTTGGAGGCCACCAAGGG
 Malus. c3. 2A TCGGAGTATTTCTCCGCGAAAAAGAAATAGATGAGTCTTACAAACACG-----CATAAAGTTCAATTTACAAATTTTTCAAACCTTTCAG-----GCTGCTTTGGAGGCCACCAAGGG
 Vauquelinia. 2. 2B TCGGAGGATTTCTTACGAAAAGCAATGGATGAATCTTACAAACCTGAAACATGCATAAAGTTCAATTTGCGATTTTTCCATCTTTCAG-----GCTGCTTTGGAGGCCACCAAGGG
 Vauquelinia. 1. 2A TCAGAGTATTTCTTCCGAAAAAGAAATAGATGAATCTTACAAACATG-----GCATAAAGCTCAATTACGAATTTT-TGAACTTTCAG-----GCTGCTTTGGAGGCCACCAAGGG
 Cotoneaster. 14. 2A TCCGAGTATTTCTCCGCGAAAAAGAAA-AGATGAATCTTACAAACATG-----CATAAAGTTCAATTTACGATTTTTATGAACTTTCAG-----GCTGCTTTGGAGGCCACCAAGGG
 Cotoneaster. 1. 2B -----CAGACCTGAAACCGCAGATAAAGTTCAACTGTGAATTTTTCGATCTGTTCAG-----GCTGCTTTGGAGGCCACCAAGGG

Gillenia. a TTCTCAATTTGAACAGCAACAATACTTCTCGGGACCATATG-----GTGTGCATCT--CTCTTTTTCTCGAAAAGGTTT-CTTAATAAAAAGTATAATTTCTT-CAAGAAGTAA
 Amelanchier. c2. 2B TTCTTAATTTGAACAGCAACGAATACTTCTCTGGACCATATG-----GTGTGCATCTTTCTTTTTCTCAAAGACTTTTTCTTAAT-AAAAGTACAGTTTCTTCAAAGAAATAG
 Amelanchier. 18. 2A TTCTTAATTTGAACAGCAACAATACTTCTCCGGACCATATG-----GTGTGCATCTTTCTATTTTTCTCGAAAACTTTTGCTTAACGAAAAGTCTAACTTCTT-GAAGAAATAG
 Malus. c14. 2B TTCTTAATTTGAACAGCAACGAATACTTCTCTGGACCATATG-----GTGTGCATCTGCTCTTTTTCTCAAACCTTTTTCTTAACAAAAGTATAATTTCTTTCGAAGAAAGAG
 Malus. c3. 2A TTCTTAATTTGAACAGCAACAATACTTCTCCGGGCCATATG-----GTGTGCATCTTTCTATTTTTCTCGAAAACTTTTGCTTAACGAAAAGTCTAACTTCTT-GAAGAAATAG
 Vauquelinia. 2. 2B TTCTTAATTTGAACAGCAACAATACTTCTCTGGACCATATG-----GTGTGCATCTCTCTTTTTCTCATATACTTTTTCTTAGTTTAAAGTATAATTTCTT-GAAGAAATAG
 Vauquelinia. 1. 2A TTCTTAATTTGAACAGCAACAATACTTCTCTGGACCATATG-----GTGTGCATCTTTCTATTTTTCTCGAAAACTTTTCCCTT---AAAAGTATAATTTCTT-GAAGAAATAG
 Cotoneaster. 14. 2A TTCTTAATTTGAACAGCAACAATACTTCTCCGGCCCGTATG-----GTGTGCATCTTTCTATTTTTCTCGGAAACTTTTTGCTTAATGAAAAGTATAATTTCTT-GAAGAAATAG
 Cotoneaster. 1. 2B TTCTTAATTTGAACAGCAACAATACTTCTCTGGACCATATG-----GTGTGCATCTTTCTTTTTCTCAAACCTTTTTCTTAATAAAAAGTATGATTTCTTCAAAGAAAGAG

Gillenia. a AATAACTAATGATGTATG-CCATGGCTACCTCAATGCAG-----GCGATGATGTTGTGTTTATTGCTAATGATTGGCACACTGCTCTTCTTCCCTGCTTCTTAAAAACCATCTACAAC
 Amelanchier. c2. 2B AATAACTAACGATGTGATTCATCGGTACCACAATGCAG-----GTGATGATGTTGTATTCATTGCTAATGATTGGCACACTGCTCTTCTTCCCTGCTACTTAAAAACCATCTACAAC
 Amelanchier. 18. 2A AATAACTAATGATGTAT--CCATGGATACCACAATGCAG-----GTGATGATGTTGTATTCATAGCTAATGATTGGCACACTGCTCTTCTTCCCTGCTACTTAAAAAGCGATCTACAAC
 Malus. c14. 2B AA-----GGGG-ATTACATCGGTACCACAATGCAG-----GTGATGATGTTGTATTCGTTGCTAATGATTGGCACGCTGCTCTTCTTCCCTGCTACTTAAAAACCATCTACAAC
 Malus. c3. 2A AAATACTAATGATGTAT--CCATGGATGCCACAATGTAG-----GTGATGATGTTGTATTCATAGCTAATGATTGGCACACTGCTCTTCTTCCCTGCTACTTAAAAAGCGATCTACAAC
 Vauquelinia. 2. 2B AATAACTAATGATGTATATCCATCGGTACCACAATGCAG-----GTGATGATGTTGTATTCATAGCTAATGATTGGCACACTGCTCTTCTTCCCTGCTACTTAAAAACCATCTACAAC
 Vauquelinia. 1. 2A AATAACTAATGATGTATATCCACGGGTACCACAATGCAG-----GTGATGATGTTGTGTTTATTGCTAATGATTGGCACACTGCTCTTCTTCCCTGCTACTTAAAAACCATCTACAAC
 Cotoneaster. 14. 2A AATAACTAATGATGTAT--CCATGGGTACCACAATGCAG-----GTGATGAAATGATTCATTGCTAACGATTGGCACACTGCTCTTCTTCCCTGCTACTTAAAAACCATCTACAAC
 Cotoneaster. 1. 2B AATGACTAACGATGTATATCCATCGGTACCACAATGCAG-----GTGATGATGTTGTATTCATTGCTAACGATTGGCACACTGCTCTTCTTCCCTGCTACTTAAAAACCATCTACAAC

Gillenia.a CGAAGGGTATTTACAAAATGCAAG-----GTAAGGCATCCT--GCGTTTGAAGAGCGTCATTTACAGTCT-GACCA---TTATGTTT---ACATGAAAACTGAAAAAAT
 Amelanchier.c2.2B CGAAGGGGATTTACAAAATGCGAAG-----GTAAGGTACCT--GCGTTTGAAGAGCTCCA--TTAGAGTCTACAACAA--TTTTGTTT---AAATGAAAA-CTG-AAACAAT
 Amelanchier.18.2A CGAAGGGGATTTACAAAATGCGAAG-----GTAAGGCATCTCTACGTTTGAAGGGCATTCTTTAGAGTCTTGGC----TTCCTTTTCTT-ACATGAAAA-TT-AAATAAT
 Malus.c14.2B CGAAGGGGATTTACAAAATGCGAAG-----GTAAGGTAGCCT--GCGTTTGAAGAGCACCCTTTAGAGTCCACAACAA--TTTTGTTT---AAATGAAAA-CTG-AAACAAT
 Malus.c3.2A CGAAGGGGATTTACAAAATGCGAAG-----GTAAGGCATCTCTACGTTTGAAGGGCATTCTTTAGAGTCTTGGC----TTTTTTTCTT-ACAAGAAAA-TT-AAATAAT
 Vauquelinia.2.2B CGAAGGGGATTTACAAAATGCGAAG-----GTAAGGTACCT--GAGTTTGAAGAGCACCATTCTTTAGAGCCTACAACAA--TTTTGTTT---AAATGAAAA-CTG-AAACAAT
 Vauquelinia.1.2A CGAAGGGGATTTACAAAATGCGAAG-----GTAAGGCATCTCTGCGTTTGAAGGGCATTCTTTGGAGTCTT-AACTA--TTTT-TTCC--ACATGAAAA-TT-AAATAAT
 Cotoneaster.14.2A CGAAGGGGATTTACAAAATGCGAAG-----GTAAGGCATCTCTGCGTTTGAAGGGCATTCTTTAGAGTCTTGGCTTTTGTTTTGTTTTTCATGAGAAA-----
 Cotoneaster.1.2B CCAAGGGGATTTACAAAATGCGAAG-----GTAAGGTA-GTCT-GCGTTT-----CAGAGTCCACAACAA--TTTTGTTT---AAATGAAAA-CTG-AAACAAT

Gillenia.a GCTTGATTAATGAATGGGCAG-----GTTGCATTTTGCATCCACAACATAGCTTACCAGGGCAGATTTCCCTTTTTCGGACTTCTCGCTTCTGGTTTGCAGGAAAACCTGAAAAGTTC
 Amelanchier.c2.2B GCTTGATTAATGAATGG-CAG-----GTTGTGATTTGCATCCACAACATAGCTTACCAGGCAGATTTCCCTTTTTCGGACTTCTCGCTTCTGGTTTGCAGGAAAACCTTAAAGGGTTC
 Amelanchier.18.2A TCTTGTATCAATGAATG-CAG-----GTTGTATTTTGCATCCACAACATAGCTTACCAGGGCAGATTTCCCTTTTTCGGACTTCTCGCTTCTGGTTTGCAGGAAAACCTTAAAGGGTTC
 Malus.c14.2B GCTTGATTAATGAATGG-CAG-----GTCGTATTTTGCATCCACAACATAGCTTACCAGGGCAGATTTCCCTTATTCGGACTTCTCGCTTCTGGTTTGCAGGAAAACCTTAAAGGGTTC
 Malus.c3.2A TCTTGTATCAATGAATG-CAG-----GTTGTATTTTGCATCCACAACATAGCTTACCAGGGCAGATTTCCCTTTTTCGGACTTCTCGCTTCTGGTTTGCAGGAAAACCTTAAAGGGTTC
 Vauquelinia.2.2B GCTTGATTAATGAATGG-CAG-----GTTGCATTTTGCATCCACAACATAGCTTACCAGGGCAGATTTCCCTTTCGGACTTCTCGCTTCTGGTTTGCAGGAAAACCTTAAAGGGTTC
 Vauquelinia.1.2A TCTTGTATCAATGAATG-CAG-----GTTGTATTTTGCATCCACAACATAGCTTACCAGGGCAGATTTCCCTTTTTCGGACTTCTCGCTTCTGGTTTGCAGGAAAACCTTAAAGGGTTC
 Cotoneaster.14.2A --TTGATCAATGAATG-CAG-----GTTGTATTTTGCATCCACAACATAGCTTACCAGGGCAGATTTCCCTTTTTCGGACTTCTCGCTTCTGGTTTGCAGGAAAACCTTAAAGGGTTC
 Cotoneaster.1.2B GCTTGATTAATGAATGG-CAG-----GTCGCATTTTGCATCCACAACATAGCTTACCAGGGCAGATTTCCCTTTTTCGGACTTCTCGCTTCTGGTTTGCAGGAAAACCTTAAAGGGTTC

Gillenia.a TTTTCGACTTCATTGATGG-----GTATGTCTAATGTGTACACACTTGATAT-AGAAATATACACCGGACTTTAAAAGTTTACCTGCGGAAATGATAAGTTATTCCTCTTTCTG
 Amelanchier.c2.2B TTTTCGACTTCATTGATGG-----GTATGTATAATGTATTACACATTTGACATAGAAACTAT--ACGGACTTCAAAGGTTTATTTGCGGAAATGAGAAAATGTTCTTTTGTG
 Amelanchier.18.2A TTTTCGACTTCATTGACGG-----GTATGTATCTTACAT-----TTGATAT-AGAAACTCTATTAAGGACTC-AACACCTTACTCGTCGAGTGACAAAATATTCCTCTTTCTT
 Malus.c14.2B TTTTCGACTTCATTGATGG-----GTATGTATAACATATTACACATTTGATGT-AGAAACTATACGATGGACTTTAAAAGTTTGTTTGCGGAAATGAGAAAATGTTCTTTTGTG
 Malus.c3.2A TTTTCGACTTCATTGACGG-----GTATGTATCTTACAT-----TTGATAT-AGAAACTCTATTAAGGACTC-AACACCTTACTCGTCGAGTGACAAAATATTCCTCTTTCTT
 Vauquelinia.2.2B TTTTCGACTTCATTGATGG-----GTATGTATAATGTATTACACACTTTGATAT-AGAAACTATACGACCGGACTTTAAAAGTTTATTTGCGGAAATGAGAAAATGTTCTTTTGTG
 Vauquelinia.1.2A TTTTCGACTTCATTGACGG-----GTATTAATCTTACAT-----TTGATAA-GGAAACTCTATTAAGGACTTAAACACCTTACTCGTGATGTGACAAAATATTCCTCTTTCTT
 Cotoneaster.14.2A TTTTCGACTTCATTGACGG-----GTATGTATCTTACAT-----TTGATAT-AGAAACTCTATTAAGGACTC-AACACCTTACCCTCGAGTGACAAAATATTCCTCTTTCTT
 Cotoneaster.1.2B TTTTCGACTTCATTGATGG-----GTACGTATAACATATTACACACTTTGATGT-AGAAGTACACGATGGACTTTAAAAGTTTATTTGCGGAAATGAGAAAATGTTCTTTTGTG

Gillenia.a GATGTTTGGTTTGCAG-----GTATAACAAGCCCGTGAAGGGAAGAAAAATCAATTGGATGAAGGCCGGAATAAATGAATCGGACAGGGGTGTAACGTGAGCCATACTATGCCAG
 Amelanchier.c2.2B AATGTTTTGTTTACAG-----GCATGACAAAGCCCGTGAAGGGAAGAAAAATCAATTGGATGAAGGCCGGAATAAATGAATCGGACAGGGGTGTAACGTGAGCCATACTATGCCAG
 Amelanchier.18.2A AATGTTTCGCTGTCAG-----GTATAACAAGCCCGTGAAGGGAAGAAAAATCAATTGGATGAAGGCCGGAATAAATGAATCGGACAGGGGTGTAACGTGAGCCATACTATGCCAG
 Malus.c14.2B AATGTTTTGTTTGCAG-----GCATGACAAAGCCCGTGAAGGGAAGAAAAATCAATTGGATGAAGGGTGAATAACTTGAATCCGACAGGGGTGTAACGTGAGCCATACTATGCCAG
 Malus.c3.2A AATGTTCTGTTTGCAG-----GTATAACAAGCCCGTGAAGGGAAGAAAAATCAATTGGATGAAGGCCGGAATAAATGAATCGGACAGGGGTGTAACGTGAGCCATACTATGCCAG
 Vauquelinia.2.2B AATGTTATG--AGCAG-----GTATCACAAGCCCGTGAAGGGAAGAAAAATCAATTGGATGAAGGCCGGAATAAATGAATCGGACAGGGGTGTAACGTGAGCCATACTATGCCAG
 Vauquelinia.1.2A AATGTTTGGTTTGCAG-----GTATAACAAGCCCGTGAAGGGAAGAAAAATCAATTGGATGAAGGCCGGAATAAATGAATCGGACAGGGGTGTAACGTGAGCCATACTATGCCAG
 Cotoneaster.14.2A AATGTTTCGCTGTCAG-----GTATAACAAGCCCGTGAAGGGAAGAAAAATCAATTGGATGAAGGCCGGAATAAATGAATCGGACAGGGGTGTAACGTGAGCCATACTATGCCAG
 Cotoneaster.1.2B AATGTTTTGTTTGCAG-----GTATGACAAAGCCCGTGAAGGGAAGAAAAATCAATTGGATGAAGGCCGGAATAAATGAATCGGACAGGGGTGTAACGTGAGCCATACTATGCCAG

Gillenia.a GAACTTGTTTTCCGGAGAAGACAAAGCGTGGAAATGGATAACATTATTCGCAAGACCCGCATCACTGGTATCGTGAATGGCATGGACGTTCAAGAGTGGAAATCCGGCCACAGACAATAC
 Amelanchier.c2.2B GAACTTGTTTTCCGGAGAAGACAAAGCGTGGAAATGGATAACATTATTCGCAAGACCCGCATCACTGGTATCGTGAATGGCATGGACGTTCAAGAGTGGAAATCCGGCCACAGACAATAC
 Amelanchier.18.2A GAACTTGTTTTCCGGAGAAGACAAAGCGTGGAAATGGATAACATTATTCGCAAGACCCGCATCACTGGTATCGTGAATGGCATGGACGTTCAAGAGTGGAAATCCGGCCACAGACAATAC
 Malus.c14.2B GAACTTGTTTTCCGGAGAAGACAAAGCGTGGAAATGGATAACATTATTCGCAAGACCCGCATCACTGGTATCGTGAATGGCATGGACGTTCAAGAGTGGAAATCCGGCCACTGACAATAC
 Malus.c3.2A GAACTTGTTTTCCGGAGAAGACAAAGCGTGGAAATGGATAACATTATTCGCAAGACCCGCATCACTGGTATCGTGAATGGCATGGACGTTCAAGAGTGGAAATCCGGCCACAGACAATAC
 Vauquelinia.2.2B GAACTTGTTTTCCGGAGAAGACAAAGCGTGGAAATGGATAACATTATTCGCAAGACCCGCATCACTGGTATCGTGAATGGCATGGACGTTCAAGAGTGGAAATCCGGCCACTGACAATAC
 Vauquelinia.1.2A GAACTTGTTTTCCGGAGAAGACAAAGCGTGGAAATGGATAACATTATTCGCAAGACCCGCATCACTGGTATCGTGAATGGCATGGACGTTCAAGAGTGGAAATCCGGCCACTGACAATAC
 Cotoneaster.14.2A GAACTTGTTTTCCGGAGAAGACAAAGCGTGGAAATGGATAACATTATTCGCAAGACCCGCATCACTGGTATCGTGAATGGCATGGACGTTCAAGAGTGGAAATCCGGCCACAGACAATAC
 Cotoneaster.1.2B GAACTTGTTTTCCGGAGAAGACAAAGCGTGGAAATGGATAACATTATTCGCAAGACCCGCATCACTGGTATCGTGAATGGCATGGACGTTCAAGAGTGGAAATCCGGCCACTGACAAGTTC

Gillenia.a **TTAGATATCAAATATGATAACCAACT**-----GTGAGTAACTCCTAAGGATTTT-AATTCCTTGACGTATGGGGCAGGAAAAGAAAACTTTTACTGATCAGAATTGTACGTT
Amelanchier.c2.2B **TTAGATATCAAATATGATAACCAACT**-----GTGAGTAACTCCTAAGGATTTT-AATTCCTTGACGTATGGGGCAGGAAAAGAAAACTTTTACTGATCAGAATTGTGTGTT
Amelanchier.18.2A **TTAGATACCAAATATGATAACCAACT**-----GTGAGTAACTCCTAAGGATTTT-AATTCCTTGAAAGATGGGGCAGGAAAAGAAAACTTTTACTGACCAGAATTGTATGTT
Malus.c14.2B **TTAGATATCAAATATGATAACCAACT**-----GTGAGTAACTCCTAAGGATTTT-AATTCCTTGATGCATGGAGCAGGAAAAGAAAACTTTTACTGATCAGAATTGTATGTT
Malus.c3.2A **TTAGATACCAAATATGATAACCAACT**-----GTGAGTAACTCCTAAGGATTTT-AATTCCTTGAAAGATGGGGCAGGAAAAGAAAACTTTTACTGACCAGAATTGTATGTT
Vauquelinia.2.2B **TTGGATATCAAATATGATAACCAACT**-----GTGAGTAACT--TA-GAATTTTG-AATTCCTTGACGTATGGGGCAGGAAAAGAAAACTTTTACTGATCAGAATTATATGTT
Vauquelinia.1.2A **TTAGATATCAAATATGATAGCAACT**-----GTGAGTAACTCCTAAGGATTTTAAATTCCTTGAAAGATGGGGCAGGAAAAGAAAACTTTTACTGATCAGAATTGTATGTT
Cotoneaster.14.2A **TTAGATACCAAATATGATAACCAACT**-----GTGAGTAACTCCTAAGGATTTT-AATTCCTTGAAAGATGGGGCAGGAAAAGAAAACTTTTACTGATCAGAATTGTATGTT
Cotoneaster.1.2B **TTGAAATCAAATATGATAACCAACT**-----GTGAGTAACTCGTAAGGATTTT-AATTCCTTGATGTATGGAGGAGGAAAAGAAAACTTTTACTGATCAGAATTGTATGTT

Gillenia.a CAG-----GTA CTGGATGCAAAGCCTCTTTTGAAGGAGGCCCTCAAGCAGAAGTTGGGCTGCCAGTTGACAGGAACATCCCTGTGATCGGGTTCATTGGCAGGCTAGAAGAG
Amelanchier.c2.2B CAG-----GTA CTAGATGCAAAGCCTTTGTTGAAGGAGGCCCTCAAGCAGAAGTTGGGCTGCCAGTTGACAGGAACATCCCGTGTTCGGGTTTCATTGGCAGGCTAGAAGAG
Amelanchier.18.2A TAG-----GTA CTGGATGCTAAGCCTCTGGTGAAGGAGGCCCTCAAGCAGAAGTTGGGTTGCCAGTTGACAGGAACATCCCTGTGATCGGGTTCATTGGCAGGCTAGAAGAG
Malus.c14.2B CAG-----GTA CTAGATGCAAAGCCTTTGTTGAAGGAGGCCCTCAAGCAGAAGTTGGGCTGCCAGTTGACAGGAACATCCCTGTGATCGGGTTCATTGGCAGGCTAGAAGAG
Malus.c3.2A TAG-----GTA CTGGATGCAAAGCCTCTGGTGAAGGAGGCCCTCAAGCAGAAGTTGGGTTGCCAGTTGACAGGAACATCCCTGTGATCGGGTTCATTGGCAGGCTAGAAGAG
Vauquelinia.2.2B CAG-----GTA CTAGATGCAAAGCCTTTGTTGAAGGAGGCCCTCAAGCAGAAGTTGGGCTGCCAGTTGACAGGAACATCCCTGTGATCGGGTTCATTGGCAGGCTAGAAGAG
Vauquelinia.1.2A CAG-----GTA CTGGATGCAAAGCCTCTGTGGAAGGAGGCCCTCAAGCAGAAGTTGGGCTGCCAATTGACAGGAACATCCCTGTGATCGGGTTCATTGGCAGGCTAGAAGAG
Cotoneaster.14.2A TAG-----GTA CTGGATGCAAAGCCTCTGGTGAAGGAGGCCCTCAAGCAGAAGTTGGGTTGCCAGTTGACAGGAGCATCCCTGTGATCGGGTTCATTGGCAGGCTAGAAGAG
Cotoneaster.1.2B CAG-----GTA CTAGATGCAAAGCCTCTGTGGAAGGAGGCCCTCAAGCAGAAGTTGGGCTCCGGTTGACAGGAACATCCCGTGTTCGGGTTTCATTGGCAGGCTAGAAGAG