Appendix A The conserved silencing suppressor gene regions of the mixed CTV stains and TR-L514 severe strain

> conserved p20 sequence used as ‘inverted-repeat’ cloned form mixed CTV strains
CGATCCCAAGCTAATTCCTGCGGAAAGTGATGGAACGAAAATTAAGATCTTTTACTCTGTTTTCTC
GCTTTGGTACACTCTATGGAATCGCAGATCAAGCAGGCGATCTACAAATGGGTGCTTTGCTC
ATGGGTGAAACAAAGCTCGTATGTTTGTGTAATATAGACGAGCTGTTGACTTTGAGGAGG
GACATCATAAGAGCTCAGTTTACTCGCGACAAGACTGCTCTGTCTACCCAGCAACAGATGTC
ATGGGCTCTTCTC

> conserved p25 sequence used as ‘inverted-repeat’ cloned form mixed CTV strains
TGAAGTGAGTTTGTGCAAGATCGTACTGTGTTTTAATCTGACAGGGAAGCAGTACTTCTG
GACGTAGTTAGTATTGTTGAGCTCGATAGTACATGGAATGCGGCTGCTGTAAGATGCAGG
GACATCATAAGAGCTCAGTTTACTCGCGACAAGACTGCTCTGTCTACCCAGCAACAGATGTC
ATGGGCTCTTCTC

> conserved p23 sequence used as ‘inverted-repeat’ cloned form mixed CTV strains
CAACAATACGCAGTGTCAGAACGAGGTGGCGCATATGTTAATGCACGATCCCGTTAAGTA
TTTAAATAAGGAAAAGCTAGAGACTCTTTCTTAACGCAAGATTTGCGATCTGTTTCTG
ATGGCACAACAAAGGCGAATGATGGGTGCTTTGCGGTAAAAGGGAAGCAGTACTTCTG
GACGTAGTTAGTATTGTTGAGCTCGATAGTACATGGAATGCGGCTGCTGTAAGATGCAGG
GACATCATAAGAGCTCAGTTTACTCGCGACAAGACTGCTCTGTCTACCCAGCAACAGATGTC
ATGGGCTCTTCTC

> conserved p20 sequence of TR-L514
CGATCCCAAGCTAATTCCTGCGGAAAGTGATGGAACGAAAATTAAGATCTTTTACTCTGTTTTCTC
GCTTTGGTACACTCTATGGAATCGCAGATCAAGCAGGCGATCTACAAATGGGTGCTTTGCTC
ATGGGTGAAACAAAGCTCGTATGTTTGTGTAATATAGACGAGCTGTTGACTTTGAGGAGG
GACATCATAAGAGCTCAGTTTACTCGCGACAAGACTGCTCTGTCTACCCAGCAACAGATGTC
ATGGGCTCTTCTC

> conserved p25 sequence of TR-L514
TGAAGTGAGTTTGTGCAAGATCGTACTGTGTTTTAATCTGACAGGGAAGCAGTACTTCTG
GACGTAGTTAGTATTGTTGAGCTCGATAGTACATGGAATGCGGCTGCTGTAAGATGCAGG
GACATCATAAGAGCTCAGTTTACTCGCGACAAGACTGCTCTGTCTACCCAGCAACAGATGTC
ATGGGCTCTTCTC

> conserved p23 sequence TR-L514
CAACAATACGCAGTGTCAGAACGAGGGGGGCCATAAGCATAAGCTACAGATCGACAGGCGGCTT
TTAAATAAGGAAAAGCTAGAGACTCTTTCTTAACGCAAGATTTGCGATCTGTTTCTG
ATGGCACAACAAAGGCGAATGATGGGTGCTTTGCGGTAAAAGGGAAGCAGTACTTCTG
GACGTAGTTAGTATTGTTGAGCTCGATAGTACATGGAATGCGGCTGCTGTAAGATGCAGG
GACATCATAAGAGCTCAGTTTACTCGCGACAAGACTGCTCTGTCTACCCAGCAACAGATGTC
ATGGGCTCTTCTC

> conserved p20 sequence of TR-L514
CGATCCCAAGCTAATTCCTGCGGAAAGTGATGGAACGAAAATTAAGATCTTTTACTCTGTTTTCTC
GCTTTGGTACACTCTATGGAATCGCAGATCAAGCAGGCGATCTACAAATGGGTGCTTTGCTC
ATGGGTGAAACAAAGCTCGTATGTTTGTGTAATATAGACGAGCTGTTGACTTTGAGGAGG
GACATCATAAGAGCTCAGTTTACTCGCGACAAGACTGCTCTGTCTACCCAGCAACAGATGTC
ATGGGCTCTTCTC

> conserved p23 sequence TR-L514
CAACAATACGCAGTGTCAGAACGAGGGGGGCCATAAGCATAAGCTACAGATCGACAGGCGGCTT
TTAAATAAGGAAAAGCTAGAGACTCTTTCTTAACGCAAGATTTGCGATCTGTTTCTG
ATGGCACAACAAAGGCGAATGATGGGTGCTTTGCGGTAAAAGGGAAGCAGTACTTCTG
GACGTAGTTAGTATTGTTGAGCTCGATAGTACATGGAATGCGGCTGCTGTAAGATGCAGG
GACATCATAAGAGCTCAGTTTACTCGCGACAAGACTGCTCTGTCTACCCAGCAACAGATGTC
ATGGGCTCTTCTC

> conserved p25 sequence of TR-L514
TGAAGTGAGTTTGTGCAAGATCGTACTGTGTTTTAATCTGACAGGGAAGCAGTACTTCTG
GACGTAGTTAGTATTGTTGAGCTCGATAGTACATGGAATGCGGCTGCTGTAAGATGCAGG
GACATCATAAGAGCTCAGTTTACTCGCGACAAGACTGCTCTGTCTACCCAGCAACAGATGTC
ATGGGCTCTTCTC

> conserved p20 sequence of TR-L514
CGATCCCAAGCTAATTCCTGCGGAAAGTGATGGAACGAAAATTAAGATCTTTTACTCTGTTTTCTC
GCTTTGGTACACTCTATGGAATCGCAGATCAAGCAGGCGATCTACAAATGGGTGCTTTGCTC
ATGGGTGAAACAAAGCTCGTATGTTTGTGTAATATAGACGAGCTGTTGACTTTGAGGAGG
GACATCATAAGAGCTCAGTTTACTCGCGACAAGACTGCTCTGTCTACCCAGCAACAGATGTC
ATGGGCTCTTCTC

> conserved p23 sequence TR-L514
CAACAATACGCAGTGTCAGAACGAGGGGGGCCATAAGCATAAGCTACAGATCGACAGGCGGCTT
TTAAATAAGGAAAAGCTAGAGACTCTTTCTTAACGCAAGATTTGCGATCTGTTTCTG
ATGGCACAACAAAGGCGAATGATGGGTGCTTTGCGGTAAAAGGGAAGCAGTACTTCTG
GACGTAGTTAGTATTGTTGAGCTCGATAGTACATGGAATGCGGCTGCTGTAAGATGCAGG
GACATCATAAGAGCTCAGTTTACTCGCGACAAGACTGCTCTGTCTACCCAGCAACAGATGTC
ATGGGCTCTTCTC

> conserved p25 sequence of TR-L514
TGAAGTGAGTTTGTGCAAGATCGTACTGTGTTTTAATCTGACAGGGAAGCAGTACTTCTG
GACGTAGTTAGTATTGTTGAGCTCGATAGTACATGGAATGCGGCTGCTGTAAGATGCAGG
GACATCATAAGAGCTCAGTTTACTCGCGACAAGACTGCTCTGTCTACCCAGCAACAGATGTC
ATGGGCTCTTCTC

> conserved p20 sequence of TR-L514
CGATCCCAAGCTAATTCCTGCGGAAAGTGATGGAACGAAAATTAAGATCTTTTACTCTGTTTTCTC
GCTTTGGTACACTCTATGGAATCGCAGATCAAGCAGGCGATCTACAAATGGGTGCTTTGCTC
ATGGGTGAAACAAAGCTCGTATGTTTGTGTAATATAGACGAGCTGTTGACTTTGAGGAGG
GACATCATAAGAGCTCAGTTTACTCGCGACAAGACTGCTCTGTCTACCCAGCAACAGATGTC
ATGGGCTCTTCTC

> conserved p23 sequence TR-L514
CAACAATACGCAGTGTCAGAACGAGGGGGGCCATAAGCATAAGCTACAGATCGACAGGCGGCTT
TTAAATAAGGAAAAGCTAGAGACTCTTTCTTAACGCAAGATTTGCGATCTGTTTCTG
ATGGCACAACAAAGGCGAATGATGGGTGCTTTGCGGTAAAAGGGAAGCAGTACTTCTG
GACGTAGTTAGTATTGTTGAGCTCGATAGTACATGGAATGCGGCTGCTGTAAGATGCAGG
GACATCATAAGAGCTCAGTTTACTCGCGACAAGACTGCTCTGTCTACCCAGCAACAGATGTC
ATGGGCTCTTCTC

> conserved p25 sequence of TR-L514
TGAAGTGAGTTTGTGCAAGATCGTACTGTGTTTTAATCTGACAGGGAAGCAGTACTTCTG
GACGTAGTTAGTATTGTTGAGCTCGATAGTACATGGAATGCGGCTGCTGTAAGATGCAGG
GACATCATAAGAGCTCAGTTTACTCGCGACAAGACTGCTCTGTCTACCCAGCAACAGATGTC
ATGGGCTCTTCTC
Appendix B: Electrophorsis of ‘P25’ (A), ‘P20’ (B) and ‘P23’ (C) PCR amplified products. M: DL 2000 marker (from bottom to top: 100, 250, 500, 750, 1000 and 2000bp); 1: PCR products.

Appendix C: Electrophoresis of RT-PCR and nested PCR products. M: DL2000 marker
Appendix D Electrophoresis results of restriction enzyme digested products of the plasmids generated in this study using *Sac* I and *Bam* HI. m: DL2000 marker; M: DL15000 marker (from bottom to top: 100, 250, 500, 750, 1000, 2000, 2500, 5000, 7500, 10000 and 15000bp); 1-6: double digestion identification of pTZ57R-hp23, pTZ57R-hp25, pTZ57R-hp20, pCAMBIA2301G, pCAMBIA2301G-hp20, and pCAMBIA2301G-hp25.