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Transcriptome NGS   ACCACCGAGATCTACACTCTTTCCCTACACGACGCTCTTCCGATCTCCGG  50
Viral RNA NGS       ----------------------------------CAATAAGAGCAATCGG
Sanger              ---------------------------------------AGAGCAATCGG
Consensus                                                          ***

Transcriptome NGS   CACACAAAAAAGATATTCAAACAAAGACTTCAAACATTTCCAATTATAAC  100
Viral RNA NGS       CACACAAAAAAGATATTCAAACAAAGACTTCAAACATTTCCAATTATAAC
Sanger              CACACAAAAAAGATATTCAAACAAAGACTTCAAACATTTCCAATTATAAC
Consensus           **************************************************

                                 NSm
Transcriptome NGS   CTCGGGTAAATATGGACATGATCAGCAGGATAGGCAGCAGTATCAACTCC  150
Viral RNA NGS       CTCGGGTAAATATGGACATGATCAGCAGGATAGGCAGCAGTATCAACTCC
Sanger              CTCGGGTAAATATGGACATGATCAGCAGGATAGGCAGCAGTATCAACTCC
Consensus           **************************************************

Transcriptome NGS   ACCGTAACAAATGGATTGCAAAATCTTGGTAGAACAAATGAAGACACTGA  200
Viral RNA NGS       ACCGTAACAAATGGATTGCAAAATCTTGGTAGAACAAATGAAGACACTGA
Sanger              ACCGTAACAAATGGATTGCAAAATCTTGGTAGAACAAATGAAGACACTGA
Consensus           **************************************************

Transcriptome NGS   TGTTTTAGGTTCTGATAATAGAACTCTTATGAGGATGCCTACCAAAAGAG  250
Viral RNA NGS       TGTTTTAGGTTCTGATAATAGAACTCTTATGAGGATGCCTACCAAAAGAG
Sanger              TGTTTTAGGTTCTGATAATAGAACTCTTATGAGGATGCCTACCAAAAGAG
Consensus           **************************************************

Transcriptome NGS   ATGCTGAGAAAGCAAGAGAAACCAGACTGCAGGGATTCAAAGAAAGAAAT  300
Viral RNA NGS       ATGCTGAGAAAGCAAGAGAAACCAGACTGCAGGGATTCAAAGAAAGAAAT
Sanger              ATGCTGAGAAAGCAAGAGAAACCAGACTGCAGGGATTCAAAGAAAGAAAT
Consensus           **************************************************

Transcriptome NGS   GTCATAGAATCAGGGCCATCTGAGCTAGGTGAGTATGATGGAAACCCTGT  350
Viral RNA NGS       GTCATAGAATCAGGGCCATCTGAGCTAGGTGAGTATGATGGAAACCCTGT
Sanger              GTCATAGAATCAGGGCCATCTGAGCTAGGTGAGTATGATGGAAACCCTGT
Consensus           **************************************************

Transcriptome NGS   GATCACATCAGATTTGAGCATACTAGAGAGGCTGGAAGTCAATACTTCAA  400
Viral RNA NGS       GATCACATCAGATTTGAGCATACTAGAGAGGCTGGAAGTCAATACTTCAA
Sanger              GATCACATCAGATTTGAGCATACTAGAGAGGCTGGAAGTCAATACTTCAA
Consensus           **************************************************

Transcriptome NGS   ACCATATCAGCAATTGGAAAACTGATGTGTTTCTAGGGAATGGGCAAGAA  450
Viral RNA NGS       ACCATATCAGCAATTGGAAAACTGATGTGTTTCTAGGGAATGGGCAAGAA
Sanger              ACCATATCAGCAATTGGAAAACTGATGTGTTTCTAGGGAATGGGCAAGAA
Consensus           **************************************************

Transcriptome NGS   ATGGTGAAGAAGGACATAAATCTCATACCAACATGGGATTCCAAAAAAGA  500
Viral RNA NGS       ATGGTGAAGAAGGACATAAATCTCATACCAACATGGGATTCCAAAAAAGA
Sanger              ATGGTGAAGAAGGACATAAATCTCATACCAACATGGGATTCCAAAAAAGA
Consensus           **************************************************

Transcriptome NGS   GTACATGCAAATCAGTAGAGTTATAATCTGGATTGTTCCAGTGGCACCTG  550
Viral RNA NGS       GTACATGCAAATCAGTAGAGTTATAATCTGGATTGTTCCAGTGGCACCTG
Sanger              GTACATGCAAATCAGTAGAGTTATAATCTGGATTGTTCCAGTGGCACCTG
Consensus           **************************************************

Transcriptome NGS   GCACCAAAGGGAAAATCAAAGCAGCATTGGTTGATAGGAACAAGGCAGAG  600
Viral RNA NGS       GCACCAAAGGGAAAATCAAAGCAGCATTGGTTGATAGGAACAAGGCAGAG
Sanger              GCACCAAAGGGAAAATCAAAGCAGCATTGGTTGATAGGAACAAGGCAGAG
Consensus           **************************************************

Transcriptome NGS   TCTGAACAGATAATCTTCCAGAAAGAAGGGGTTCTGACTGATCCATTGTG  650
Viral RNA NGS       TCTGAACAGATAATCTTCCAGAAAGAAGGGGTTCTGACTGATCCATTGTG
Sanger              TCTGAACAGATAATCTTCCAGAAAGAAGGGGTTCTGACTGATCCATTGTG
Consensus           **************************************************

Transcriptome NGS   TTTCATCTTTTACATGCACTGGTCTTATTTAAAATCCGTGAATAACAAAG  700
Viral RNA NGS       TTTCATCTTTTACATGCACTGGTCTTATTTAAAATCCGTGAATAACAAAG
Sanger              TTTCATCTTTTACATGCACTGGTCTTATTTAAAATCCGTGAATAACAAAG
Consensus           **************************************************
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Transcriptome NGS   CTCTCTGCCCTCAACTTAAATTTATAAGTAATGAAGTATATAAGAAAAAT  750
Viral RNA NGS       CTCTCTGCCCTCAACTTAAATTTATAAGTAATGAAGTATATAAGAAAAAT
Sanger              CTCTCTGCCCTCAACTTAAATTTATAAGTAATGAAGTATATAAGAAAAAT
Consensus           **************************************************

Transcriptome NGS   GTCCCCTTTGCTGTGGCCAACTTTGCATGGAGAAAGGTTTTTTGCAACTC  800
Viral RNA NGS       GTCCCCTTTGCTGTGGCCAACTTTGCATGGAGAAAGGTTTTTTGCAACTC
Sanger              GTCCCCTTTGCTGTGGCCAACTTTGCATGGAGAAAGGTTTTTTGCAACTC
Consensus           **************************************************

Transcriptome NGS   ACCAATTGCAATGACAGAGGTGCAGCCTGATCTTATTGTATTAAATAGAG  850
Viral RNA NGS       ACCAATTGCAATGACAGAGGTGCAGCCTGATCTTATTGTATTAAATAGAG
Sanger              ACCAATTGCAATGACAGAGGTGCAGCCTGATCTTATTGTATTAAATAGAG
Consensus           **************************************************

Transcriptome NGS   GTATAACTATAAGGAACAAAGCTCTCCTCGAAGCTGTGAAGTGTATTGTA  900
Viral RNA NGS       GTATAACTATAAGGAACAAAGCTCTCCTCGAAGCTGTGAAGTGTATTGTA
Sanger              GTATAACTATAAGGAACAAAGCTCTCCTCGAAGCTGTGAAGTGTATTGTA
Consensus           **************************************************

Transcriptome NGS   CCTAATGGGAATAATGGAAAAACTATAAAGAAGCAAATAGAATCACTATC  950
Viral RNA NGS       CCTAATGGGAATAATGGAAAAACTATAAAGAAGCAAATAGAATCACTATC
Sanger              CCTAATGGGAATAATGGGAAAACTATAAAGAAGCAAATAGAATCACTATC
Consensus           ****************** *********************************

Transcriptome NGS   CAAGTCTTTAGAAGCAGCAGCTCTAGAGGATGAAAGTGAATCCACCGGTG  1000
Viral RNA NGS       CAAGTCTTTAGAAGCAGCAGCTCTAGAGGATGAAAGTGAATCCACCGGTG
Sanger              CAAGTCTTTAGAAGCAGCAGCTCTAGAGGATGAAAGTGAATCCACCGGTG
Consensus           **************************************************
                                      NSm end ←
Transcriptome NGS   CTGAAATGAAAGAGTTAACCTTTGATCTTTAGACTGCTGTCATTCTGTTT  1050
Viral RNA NGS       CTGAAATGAAAGAGTTAACCTTTGATCTTTAGACTGCTGTCATTCTGTTT
Sanger              CTGAAATGAAAGAGTTAACCTTTGATCTTTAGACTGCTGTCATTCTGTTT
Consensus           **************************************************

Transcriptome NGS   TTATAAATTTGTTTGTTTTAGTATTTTTAAATCCAATAAATTTATGATTT  1100
Viral RNA NGS       TTATAAATTTGTTTGTTTTAGTATTTTTAAATCCAATAAATTTATGATTT
Sanger              TTATAAATTTGTTTGTTTTAGTATTTTTAAATCCAATAAATTTATGATTT
Consensus           **************************************************

Transcriptome NGS   GTACTTATGTATAAAATCAAAATACAAAATCAGAATTAAAAATCAAGTGC  1150
Viral RNA NGS       GTACTTATGTATAAAATCAAAATACAAAATCAGAATTAAAAATCAAGTGC
Sanger              GTACTTATGTATAAAATCAAAATACAAAATCAGAATTAAAAATCAAGTGC
Consensus           **************************************************

Transcriptome NGS   AACCAAAATTATAAAACAAAAACCTAAAAAACAAATAAACAAAAAACAAA  1200
Viral RNA NGS       AACCAAAATTATAAAACAAAAACCTAAAAAACAAATAAACAAAAAACAAA
Sanger              AACCAAAATTATAAAACAAAAACCTAAAAAACAAATAAACAAAAAACAAA
Consensus           **************************************************

Transcriptome NGS   AAACCAAAAAANNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNN  1250
Viral RNA NGS       AACCAAAAAAACCCGAANNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNN
Sanger              AACCAAAAAAACCCGAAAAAACCTAAAAAACCAAAAAACAAAAAACAAAA
Consensus           ** * ******

Transcriptome NGS   NNNNNNNNNNNNNNNNNNNNAGGGAGAAATCCCCAAATTGGGACCTAATG  1300
Viral RNA NGS       NNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNN
Sanger              AACCCAAAAAACCAAAAAAGAGGGAGAAATCCCCAAATTGGGACCTAATG
Consensus

Transcriptome NGS   TCCTTTTATCATTTTTATATCTTTTATTTTGATTTTTGATTTTTTTGATT  1350
Viral RNA NGS       NNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNN
Sanger              TCCTTTTATCATTTTTATATCTTTTATTTTGATTTTTGATTTTTTTGATT
Consensus

Transcriptome NGS   TTTTTGATTTGATTTTTGATTTTGATTCTTGGATCTTACATATTAGCATT  1400
Viral RNA NGS       NNNNNNNNNNNNNNNNNNNNNNNNNTTCTTGGATCTTACATATTAGCATT
Sanger              TTTTTGATTTGATTTTTGATTTTGATTCTTGGATCTTACATATTAGCATT
Consensus
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Transcriptome NGS   AGTAACAACTAAATGATTTGATGTTGAAGATCTAGTTAAAAGATGTTTGA  1450
Viral RNA NGS       AGTAACAACTAAATGATTTGATGTTGAAGATCTAGTTAAAAGATGTTTGA
Sanger              AGTAACAACTAAATGATTTGATGTTGAAGATCTAGTTAAAAGATGTTTGA
Consensus           **************************************************

Transcriptome NGS   TTGAACTGTTTTGATCTACTAATTCATAAACCTGCGAGACTAACAATACT  1500
Viral RNA NGS       TTGAACTGTTTTGATCTACTAATTCATAAACCTGCGAGACTAACAATACT
Sanger              TTGAACTGTTTTGATCTACTAATTCATAAACCTGCGAAACTAACAATACT
Consensus           ************************************ ************

                          Gn/Gc end
Transcriptome NGS   TGAAATTACAAATCAATGTATTTCAGCCTTCTCACAAGATTCTTTTCACC  1550
Viral RNA NGS       TGAAATTACAAATCAATGTATTTCAGCCTTCTCACAAGATTCTTTTCACC
Sanger              TGAAATTACAAATCTATGTATTTCAGCCTTCTCACAAGATTCTTTTCACC
Consensus           ************** ***********************************

Transcriptome NGS   ATACATTTCAGAATCGTCAACATCACTGTCATTGTCGTCATGTTTCTTCT  1600
Viral RNA NGS       ATACATTTCAGAATCGTCAACATCACTGTCATTGTCGTCATGTTTCTTCT
Sanger              ATACATTTCAGAATCGTCAACATCACTGTCATTGTCGTCATGTTTCTTCT
Consensus           **************************************************

Transcriptome NGS   TTTTGATATATATAGTTGCATGAGAGTAGGCTTCTTTCCCCAGGTTTACA  1650
Viral RNA NGS       TTTTGATATATATAGTTGCATGAGAGTAGGCTTCTTTCCCCAGGTTTACA
Sanger              TTTTGATATATATAGTTGCATGAGAGTAGGCTTCTTTCCCCAGGTTTACA
Consensus           **************************************************

Transcriptome NGS   CACTTTGATAAGACATATAAACCCAAAATTATGAATCCAAACAACAAGGC  1700
Viral RNA NGS       CACTTTGATAAGACATATAAACCCAAAATTATGAATCCAAACAACAAGGC
Sanger              CACTTTGATAAGACATATAAACCCAAAATTATGAATCCAAACAACAAGGC
Consensus           **************************************************

Transcriptome NGS   AAGTTTTAGCAAATCTAGTGCAGAGTTGGTGAAGTTGGCCACCCAATTAA  1750
Viral RNA NGS       AAGTTTTAGCAAATCTAGTGCAGAGTTGGTGAAGTTGGCCACCCAATTAA
Sanger              AAGTTTTAGCAAATCTAGTGCAGAGTTGGTGAAGTTGGCCACCCAATTAA
Consensus           **************************************************

Transcriptome NGS   AAGGGTAAGTCACAGTTTCTAAAAATGTGTGAAAGTCTGTATCTTCTTTA  1800
Viral RNA NGS       AAGGGTAAGTCACAGTTTCTAAAAATGTGTGAAAGTCTGTATCTTCTTTA
Sanger              AAGGGTAAGTCACAGTTTCTAAAAATGTGTGAAAGTCTGTATCTTCTTTA
Consensus           **************************************************

Transcriptome NGS   TGTTGGAAGCTTTTCTGGATCCTGTGATCCTTGAGAGTTTCTACATTCTT  1850
Viral RNA NGS       TGTTGGAAGCTTTTCTGGATCCTGTGATCCTTGAGAGTTTCTACATTCTT
Sanger              TGTTGGAAGCTTTTCTGGATCCTGTGATCCTTGAGAGTTTCTACATTCTT
Consensus           **************************************************

Transcriptome NGS   ATCGTTGATAATTTCTATCTTAGTCAAAGGGATATCTAAAGATATATTTT  1900
Viral RNA NGS       ATCGTTGATAATTTCTATCTTAGTCAAAGGGATATCTAAAGATATATTTT
Sanger              ATCGTTGATAATTTCTATCTTAGTCAAAGGGATATCTAAAGATATATTTT
Consensus           **************************************************

Transcriptome NGS   CATTGTCCTCCACAATCATCTTTAAAACAGCGTTTTCAGGAAGTACACCA  1950
Viral RNA NGS       CATTGTCCTCCACAATCATCTTTAAAACAGCGTTTTCAGGAAGTACACCA
Sanger              CATTGTCCTCCACAATCATCTTTAAAACAGCGTTTTCAGGAAGTACACCA
Consensus           **************************************************

Transcriptome NGS   CAATGCAAATTCATCGAAATCTCATTAGAACCTCTTTCTACAATCAAATA  2000
Viral RNA NGS       CAATGCAAATTCATCGAAATCTCATTAGAACCTCTTTCTACAATCAAATA
Sanger              CAATGCAAATTCATCGAAATCTCATTAGAACCTCTTTCTACAATCAAATA
Consensus           **************************************************

Transcriptome NGS   TTGGTGTTTAGACACACAAAAGTCTGAACTTATTCTAGATGCAAAATGTT  2050
Viral RNA NGS       TTGGTGTTTAGACACACAAAAGTCTGAACTTATTCTAGATGCAAAATGTT
Sanger              TTGGTGTTTAGACACACAAAAGTCTGAACTTATTCTAGATGCAAAATGTT
Consensus           **************************************************

Transcriptome NGS   TGTTACTATTGATTTTGTATTTACAATCTAGGCCTTTAAAACATTCTAAA  2100
Viral RNA NGS       TGTTACTATTGATTTTGTATTTACAATCTAGGCCTTTAAAACATTCTAAA
Sanger              TGTTACTATTGATTTTGTATTTACAATCTAGGCCTTTAAAACATTCTAAA
Consensus           **************************************************
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Transcriptome NGS   CATCCTGAACAGAAATGATCTATGATGTTGACTTTAGGTGCTTCTGTTGT  2150
Viral RNA NGS       CATCCTGAACAGAAATGATCTATGATGTTGACTTTAGGTGCTTCTGTTGT
Sanger              CATCCTGAACAGAAATGATCTATGATGTTGACTTTAGGTGCTTCTGTTGT
Consensus           **************************************************

Transcriptome NGS   CTCAACAAAAAGCTCAATAGGCAGATCCAGAACAGTTTTGATTTTGCCCA  2200
Viral RNA NGS       CTCAACAAAAAGCTCAATAGGCAGATCCAGAACAGTTTTGATTTTGCCCA
Sanger              CTCAACAAAAAGCTCAATAGGCAGATCCAGAACAGTTTTGATTTTGCCCA
Consensus           **************************************************

Transcriptome NGS   AAGAATAATCTTTTAACATGGTTATCTTGTTTAGTCCTGTTATGACAAAG  2250
Viral RNA NGS       AAGAATAATCTTTTAACATGGTTATCTTGTTTAGTCCTGTTATGACAAAG
Sanger              AAGAATAATCTTTTAACATGGTTATCTCGTTTAGTCCTGTTATGACAAAG
Consensus           *************************** **********************

Transcriptome NGS   GATCCTTCATTAAGCTTCTCTAAACCAGAGAAGTGATCAAATGTGTAAAA  2300
Viral RNA NGS       GATCCTTCATTAAGCTTCTCTAGACCAGAGAAGTGATCAAATGTGTAAAA
Sanger              GATCCTTCATTAAGCTTCTCTAGACCAGAGAAGTGATCAAATGTGTAAAA
Consensus           ********************** ***************************

Transcriptome NGS   CCCGCATTTTTTAATATACACTTTCTTGGGTCCAATGAACTCACAGTCCC  2350
Viral RNA NGS       CCCGCATTTTTTAATATACACTTTCTTGGGTCCAATGAACTCACAGTCCC
Sanger              CCCGCATTTTTTAATATACACTTTCTTGGGTCCAATGAACTCACAGTCCC
Consensus           **************************************************

Transcriptome NGS   ATGACAGCTGTTCTTTGCCTATGTATTCTTCTGCAAATAGTAATTCTCCT  2400
Viral RNA NGS       ATGACAGCTGTTCTTTGCCTATGTATTCTTCTGCAAATAGTAATTCTCCT
Sanger              ATGACAGCTGTTCTTTGCCTATGTATTCTTCTGCAAATAGTAATTCTCCT
Consensus           **************************************************

Transcriptome NGS   TGCTTGTTCAGTTGAGGATGACCAAACGTCATGTCTGCACTCATAAGATC  2450
Viral RNA NGS       TGCTTGTTCAGTTGAGGATGACCAAACGTCATGTCTGCACTCATAAGATC
Sanger              TGTTTGTTCAGTTGAGGATGACCAAACGTCATGTCTGCACTCATAAGATC
Consensus           ** *********************************************

Transcriptome NGS   AGCTATGTTTCCTGTGTAAGCAGAGCCATCTTTAGCTAATGCAAGTTTGT  2500
Viral RNA NGS       AGCTATGTTTCCTGTGTAAGCAGAGCCATCTTTAGCTAATGCAAGTTTGT
Sanger              AGCTATGTTTCCTGTGTAAGCAGAGCCATCTTTAGCTAATGCAAGTTTGT
Consensus           **************************************************

Transcriptome NGS   GGCCAACAGAAATGTAATCATTCTGCAGAGTAGATGTTATTGATACTTGA  2550
Viral RNA NGS       GGCCAACAGAAATGTAATCATTCTGCAGAGTAGATGTTATTGATACTTGA
Sanger              GGCCAACAGAAATGTAATCATTCTGCAGAGTAGATGTTATTGATACTTGA
Consensus           **************************************************

Transcriptome NGS   TAGTTATCATTAGTGTAAGCTTTCCTATCATCATGATTGAAGCAATTATA  2600
Viral RNA NGS       TAGTTATCATTAGTGTAAGCTTTCCTATCATCATGATTGAAGCAATTATA
Sanger              TAGTTATCATTAGTGTAAGCTTTCCTATCATCATGATTGAAGCAATTATA
Consensus           **************************************************

Transcriptome NGS   CCCTTTGCCTGCATTTGCACAGGCTGTTGATGAAACATGGACCTCCTTAA  2650
Viral RNA NGS       CCCTTTGCCTGCATTTACACAGGCTGTTGATGAAACATGGACCTCCTTAA
Sanger              CCCTTTGCCTGCATTTACACAGGCTGTTGATGAAACATGGACCTCCTTAA
Consensus           **************** *********************************

Transcriptome NGS   CCCTGTACACATCTAAAGAATTGCTCATATCATAAACATTATCACAGTGA  2700
Viral RNA NGS       CCCTGTACACATCTAAAGAATTGCTCATATCATAAACATTATCACAGTGA
Sanger              CCCTGTACACATCTAAAGAATTGCTCATATCATAAACATTATCACAGTGA
Consensus           **************************************************

Transcriptome NGS   CCACAAGTTGAGCCTTCATTCATAGCTATGCACATAAGATCTTCACAGCC  2750
Viral RNA NGS       CCACAAGTTGAGCCTTCATTCATAGCTATGCACATAAAATCTTCACAGCC
Sanger              CCACAAGTTGAGCCTTCATTCATAGCTATGCACATAAAATCTTCACAGCC
Consensus           ************************************* ************

Transcriptome NGS   CCATTGGGATGTAGGTTCTAGACAAAATTTATGATATGATGGATTGTCTG  2800
Viral RNA NGS       CCATTGGGATGTAGGTTCTAGACAAAATTTATGATATGATGGATTGTCTG
Sanger              CCATTGGGATGTAGGTTCTAGACAAAATTTATGATATGATGGATTGTCTG
Consensus           **************************************************
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Transcriptome NGS   TGGATCCTAAACCTTCCCAGCATTTTTCACAATTTCCAGTGCAAGAAGAA  2850
Viral RNA NGS       TGGATCCTAAACCTTCCCAGCATTTTTCACAATTTCCAGTGCAAGAAGAA
Sanger              TGGATCCTAAACCTTCCCAGCATTTTTCACAATTTCCAGTGCAAGAAGAA
Consensus           **************************************************

Transcriptome NGS   TAAATAGATGTTTTTGTAGTCACAATGTCAGCAGTTGTGTAGAGATATTC  2900
Viral RNA NGS       TAAATAGATGTTTTTGTAGTCACAATGTCAGCAGTTGTGTAGAGATATTC
Sanger              TAAATAGATGTTTTTGTAGCCACAATGTCAGCAGTTGTGTAGAGATATTC
Consensus           ******************* ******************************

Transcriptome NGS   AATAGTATAAGTGACTCCAACATTTTTGTGTGTGATCATCAATTTTTTTG  2950
Viral RNA NGS       AATAGTATAAGTGACTCCAACATTTTTGTGTGTGATCATCAATTTTTTTG
Sanger              AATAGTATAAGTGACTCCAACATTTTTGTGTGTGATCATCAATTTTTTTG
Consensus           **************************************************

Transcriptome NGS   AATGGCTCATTGTTCCGTCAACCATCTCAAACACAGTCCCTGTGTCTGAT  3000
Viral RNA NGS       AATGGCTCATTGTTCCGTCAACCATCTCAAACACAGTCCCTGTGTCTGAT
Sanger              AATGGCTCATTGTTCCGTCAACCATCTCAAACACAGTCCCTGTGTCTGAT
Consensus           **************************************************

Transcriptome NGS   ATCAAGTCTTGCTCTATCATGTAGCGGTATTTCCCATCTACTTTAGAAGA  3050
Viral RNA NGS       ATCAAGTCTTGCTCTATCATGTAGCGGTATTTCCCATCTACTTTAGAAGA
Sanger              ATCAAGTCTTGCTCTATCATGTAGCGGTATTTCCCATCTACTTTAGAAGA
Consensus           **************************************************

Transcriptome NGS   ATACATGAGAGTAGTTCGAGACAAGGTGTTACTATCTGAAATGCTGGACA  3100
Viral RNA NGS       ATACATGAGAGTAGTTCGAGACAAGGTGTTACTATCTGAAATGCTGGACA
Sanger              ATACATGAGAGTAGTTCGAGACAAGGTGTTACTATCTGAAATGCTGGACA
Consensus           **************************************************

Transcriptome NGS   CATCTAACTTGTCTAGTGAAGCTATAGCCTTCGACATCACAGAATTAGTT  3150
Viral RNA NGS       CATCTAACTTGTCTAGTGAAGCTATAGCCTTCGACATCACAGAATTAGTT
Sanger              CATCTAACTTGTCTAGTGAAGCTATAGCCTTCGACATCACAGAATTAGTT
Consensus           **************************************************

Transcriptome NGS   TTTTCCCAGGTGCTCAAAGATGGCTCTTGTCTTGATAAAATAGTCCTGTT  3200
Viral RNA NGS       TTTTCCCAGGTGCTCAAAGATGGCTCTTGTCTTGATAAAATAGTCCTGTT
Sanger              TTTTCCCAGGTGCTCAAAGATGGCTCTTGTCTTGATAAAATAGTCCTGTT
Consensus           **************************************************

Transcriptome NGS   GTCTATAACCCCTGTTCTGCTCTTCTGGAGGGAATACAGGTCTATAGGTT  3250
Viral RNA NGS       GTCTATAACCCCTGTTCTGCTCTTCTGGAGGGAATACAGGTCTATAGGTT
Sanger              GTCTATAACCCCTGTTCTGCTCTTCTGGAGGGAATACAGGTCTATAGGTT
Consensus           **************************************************

Transcriptome NGS   TCATTTTCCCGTAAGCCTCACCTTTATAGCTTTCATGAACACTAGGCAAT  3300
Viral RNA NGS       TCATTTTCCCGTAAGCCTCACCTTTATAGCTTTCATGAACACTAGGCAAT
Sanger              TCATTTTCCCGTAAGCCTCACCTTTATAGCTTTCATGAACACTAGGCAAT
Consensus           **************************************************

Transcriptome NGS   GGTTCATATATGTACATCTTTAAAGCTCCACAACTATAAGCACAAGCTAA  3350
Viral RNA NGS       GGTTCATATATGTACATCTTTAAAGCTTCACAACTATAAGCACAAGCTAA
Sanger              GGTTCATATATGTACATCTTTAAAGCTTCACAACTATAAGCACAAGCTAA
Consensus           *************************** **********************

Transcriptome NGS   GATTCTCAAAACTTCTGTATCTAAGTGGTCCGCACAATCGTCGTCGAAGT  3400
Viral RNA NGS       GATTCTCAAAACTTCTGTATCTAAGTGGTCCGCACAATCGTCGTCGAAGT
Sanger              GATTCTCAAAACTTCTGTATCTAAGTGGTCCGCACAATCGTCGTCGAAGT
Consensus           **************************************************

Transcriptome NGS   CAGGATAACACTTTTTATTAGCTATATTTGTCTGTGTTTTCCCAGTTATG  3450
Viral RNA NGS       CAGGATAACACTTTTTATTAGCTATATTTGTCTGTGTTTTCCCAGTTATG
Sanger              CAGGATAACACTTTTTATTAGCTATATTTGTCTGTGTTTTCCCAGTTATG
Consensus           **************************************************

Transcriptome NGS   TCTTTATAAGTCTCTACAACTTTGAAGGGGAAATCTAAGCTACCAGAGTC  3500
Viral RNA NGS       TCTTTATAAGTCTCTACAACTTTGAAGGGGAAATCTAAGCTACCAGAGTC
Sanger              TCTTTATAAGTCTCTACAACTTTGAAGGGGAAATCTAAGCTACCAGAGTC
Consensus           **************************************************
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Transcriptome NGS   TTTTGTGATTTTACAATCACATTCTCGGGCAGAAGGCATAGAATGGGATC  3550
Viral RNA NGS       TTTTGTGATTTTACAATCACATTCTCGGGCAGAAGGCATAGAATGGGATC
Sanger              TTTTGTGATTTTACAATCACATTCTCGGGCAGAAGGCATAGAATGGGATC
Consensus           **************************************************

Transcriptome NGS   CAATGTACAAGAATTTTGACTGCTCGAGATCAGCATAACAATTATAGCCA  3600
Viral RNA NGS       CAATGTACAAGAATTTTGACTGCTCGAGATCAGCATAACAATTATAGCCA
Sanger              CAATGTACAAGAATTTTGACTGCTCGAGATCAGCATAACAATTATAGCCA
Consensus           **************************************************

Transcriptome NGS   CAGGATGCTTGCAGAGCTAAAGTGTTTGGTAGAATTGAAATAACAATTGT  3650
Viral RNA NGS       CAGGATGCTTGCAGAGCTAAAGTGTTTGGTAGAATTGAAATAACAATTGT
Sanger              CAGGATGCTTGCAGAGCTAAAGTGTTTGGTAGAATTGAAATAACAATTGT
Consensus           **************************************************

Transcriptome NGS   GCTAAGCATGAATCTCGTTAGATAAAATGTGACATTTCTAGTAATACCCG  3700
Viral RNA NGS       GCTAAGCATGAATCTCGTTAGATAAAATGTGACATTTCTAGTAATACCCG
Sanger              GCTAAGCATGAATCTCGTTAGATAAAATGTGACATTTCTAGTAATACCCG
Consensus           **************************************************

Transcriptome NGS   TATTCATCAAAAATTGAAATTTTTTAGATGGTTTTTTGGGAAATCCGCGG  3750
Viral RNA NGS       TATTCATCAAAAATTGAAATTTTTTAGATGGTTTTTTGGGAAATCCGCGG
Sanger              TATTCATCAAAAATTGAAATTTTTTAGATGGTTTTTTGGGAAATCCGCGG
Consensus           **************************************************

Transcriptome NGS   TTAAAGTAACAATCAGGATTATGCAAAGCTCCAGAATCTGATCTACCACA  3800
Viral RNA NGS       TTAAAGTAACAATCAGGATTATGCAAAGCTCCAGAATCTGATCTACCACA
Sanger              TTAAAGTAACAATCAGGATTATGCAAAGCTCCAGAATCTGATCTACCACA
Consensus           **************************************************

Transcriptome NGS   AACACACTTTGGTGGACAATCATGAGACAGCAGAGACAAATATCCACACA  3850
Viral RNA NGS       AACACACTTTGGTGGACAATCATGAGACAGCAGAGACAAATATCCACACA
Sanger              AACACACTTTGGTGGACAATCATGAGACAGCAGAGACAAATATCCACACA
Consensus           **************************************************

Transcriptome NGS   TATCACATCTATATGGCATTTTAGACCATAAATTGTTTAACAGGTAAATC  3900
Viral RNA NGS       TATCACATCTATATGGCATTTTAGACCATAAATTGTTTAACAGGTAAATC
Sanger              TATCACATCTATATGGCATTTTAGACCATAAATTGTTTAACAGGTAAATC
Consensus           **************************************************

Transcriptome NGS   AGAGGATACAAAACTATAGAAAGCAAATCATACCATAGGGATAGTGGACC  3950
Viral RNA NGS       AGAGGATACAAAACTATAGAAAGCAAATCATACCATAGGGATAGTGGACC
Sanger              AGAGGATACAAGACTATAGAAAGCAAATCATACCATAGGGATAGTGGACC
Consensus           *********** ************************************

Transcriptome NGS   TTTGGTTTTGTTCATGATCCAGGTTATTGGCATCATTATTAGGAAGAATA  4000
Viral RNA NGS       TTTGGTTTTGTTCATGATCCAGGTTATTGGCATCATTATTAGGAAGAATA
Sanger              TTTGGTTTTGTTCATGATCCAGGTTATTGGCATCATTATTAGGAAGAATA
Consensus           **************************************************

Transcriptome NGS   AAAATGCCCATTTCAACCAATAAAAATTCACACAAGTATACAACATTGTC  4050
Viral RNA NGS       AAAATGCCCATTTCAACCAATAAAAATTCACACAAGTATACAACATTGTC
Sanger              AAAATGCCCATTTCAACCAATAAAAATTCACACAAGTATACAACATTGTC
Consensus           **************************************************

Transcriptome NGS   TTATTATCTTGATACTTATGGACACACCTTCGAAGACCATTGTCGACATT  4100
Viral RNA NGS       TTATTATCTTGATACTTATGGACACACCTTCGAAGACCATTGTCGACATT
Sanger              TTATTATCTTGATACTTATGGACACACCTTCGAAGACCATTGTCGACATT
Consensus           **************************************************

Transcriptome NGS   AGGTAAGTGGAAGAACTTATCTCCGCATATTAGGTAATGAAACCCGTCTA  4150
Viral RNA NGS       AGGTAAGTGGAAGAACTTATCTCCGCATATTAGGTAATGAAACCCGTCTA
Sanger              AGGTAAGTGGAAGAACTTATCTCCGCATATTAGGTAATGAAACCCGTCTA
Consensus           **************************************************

Transcriptome NGS   AGGAATCCTCAGACAACTGATATTGGAATGTTCCTGTAAAAGATTGAACC  4200
Viral RNA NGS       AGGAATCCTCAGACAACTGATATTGGAATGTTCCTGTAAAAGATTGAACC
Sanger              AGGAATCCTCAGACAACTGATATTGGAATGTTCCTGTAAAAGATTGAACC
Consensus           **************************************************
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Transcriptome NGS   TTAGAGTCAAGCTGACCCATTTGTTTCACAGTGACTCCAATCAATTTTTC  4250
Viral RNA NGS       TTAGAGTCAAGCTGACCCATTTGTTTCACAGTGACTCCAATCAATTTTTC
Sanger              TTAGAGTCAAGCTGACCCATTTGTTTCACAGTGACTCCAATCAATTTTTC
Consensus           **************************************************

Transcriptome NGS   TGTGGTTTCCAAGTTGACATTAAAAGTCTCATCACTATTCAACTGCGAGA  4300
Viral RNA NGS       TGTGGTTTCCAAGTTGACATTAAAAGTCTCATCACTATTCAACTGCGAGA
Sanger              TGTGGTTTCCAAGTTGACATTAAAAGTCTCATCACTATTCAACTGCGAGA
Consensus           **************************************************

Transcriptome NGS   TATTGCAATCACCTGATAACTTCACAGAGTGTAAAACAATATGCTGCTTT  4350
Viral RNA NGS       TATTGCAATCACCTGATAACTTCACAGAGTGTAAAACAATATGCTGCTTT
Sanger              TATTGCAATCACCTGATAACTTCACAGAGTGTAAAACAATATGCTGCTTT
Consensus           **************************************************

Transcriptome NGS   GAACCGATTTTCTCTTCGAAGTATTTACTACCTACTTCAAGTAGCCTTTT  4400
Viral RNA NGS       GAACCGATTTTCTCTTCGAAGTATTTACTACCTACTTCAAGTAGCCTTTT
Sanger              GAACCGATTTTCTCTTCGAAGTATTTACTACCTACTTCAAGTAGCCTTTT
Consensus           **************************************************

Transcriptome NGS   GTTTTCCACATTCATGACAGGGACCACTGGAATTGTAATTTCAGAATTGA  4450
Viral RNA NGS       GTTTTCCACATTCATGACAGGGACCACTGGAATTGTAATTTCAGAATTGA
Sanger              GTTTTCCACATTCATGACAGGGACCACTGGAATTGTAATTTCAGAATTGA
Consensus           **************************************************

Transcriptome NGS   AATCTGAAAGAAGATTAATGTTTTTGCATTTTTTATAGAATGTAACGTTT  4500
Viral RNA NGS       AATCTGAAAGAAGATTAATGTTTTTGCATTTTTTATAGAATGTAACGTTT
Sanger              AATCTGAAAGAAGATTAATGTTTTTGCATTTTTTATAGAATGTAACGTTT
Consensus           **************************************************

Transcriptome NGS   TCTGAAGGACATGTATAATAATCATCTCCTTCATTCATTGTTGCAAGAAA  4550
Viral RNA NGS       TCTGAAGGACATGTATAATAATCATCTCCTTCATTCATTGTTGCAAGAAA
Sanger              TCTGAAGGACATGTATAATAATCATCTCCTTCATTCATTGTTGCAAGAAA
Consensus           **************************************************

Transcriptome NGS   GTTGAAAGTGGATTTCCCCACTATCATACAGTTAGATGGCAATGGAGGTT  4600
Viral RNA NGS       GTTGAAAGTGGATTTCCCCACTATCATACAGTTAGATGGCAATGGAGGTT
Sanger              GTTGAAAGTGGATTTCCCCACTATCATACAGTTAGATGGCAATGGAGGTT
Consensus           **************************************************

Transcriptome NGS   CATGATTTTGCTCAGTGTACCTGCATTTTTCTTTATCTGTATAACTATCA  4650
Viral RNA NGS       CATGATTTTGCTCAGTGTACCTGCATTTTTCTTTATCTGTATAACTATCA
Sanger              CATGATTTTGCTCAGTGTACCTGCATTTTTCTTTATCTGTATAACTATCA
Consensus           **************************************************

Transcriptome NGS   GACAGCATCACACTCCTATATGTCCCAGAGTATTTCTTCTTCCCAGACTG  4700
Viral RNA NGS       GACAGCATCACACTCCTATATGTCCCAGAGTATTTCTTCTTTCCAGACTG
Sanger              GACAGCATCACACTCCTATATGTCCCAGAGTATTTCTTCTTTCCAAACTG
Consensus           ****************************************** *** ****

Transcriptome NGS   GCTTTCGAGGCTTGGTGACTTCTCTGAACTGGACAATTGGCGGAGATTGA  4750
Viral RNA NGS       GCTTTCGAGGCTTGGTGACTTCTCTGAACTGGACAATTGGCGGAGATTGA
Sanger              GCTTTCGAGGCTTGGTGACTTCTCTGAACTGGACAATTGGCGGAGATTGA
Consensus           **************************************************

Transcriptome NGS   GGATTAGACAAAGCATGAGTATCATTATTACTAGCAATGATGTGACATAA  4800
Viral RNA NGS       GGATTAGACAAAGCATGAGTATCATTATTACTAGCAATGATGTGACATAA
Sanger              GGATTAGACAAAGCATGAGTATCATTATTACTAGCAATGATGTGACATAA
Consensus           **************************************************

Transcriptome NGS   AATATAAAGCCAGATAAGTAAATAGGTAAGCTTGATGACATTTTTTTACG  4850
Viral RNA NGS       AATATAAAGCCAGATAAGTAAATAGGTAAGCTTGATGACATTTTTT-ACG
Sanger              AATATAAAGCCAGATAAGTAAATAGGTAAGCTTGATGACATTTTTT-ACG
Consensus           ********************************************** ***
                          Gn/Gc ←┐
Transcriptome NGS   GTTTAGTAGAGTCATTTCAAGGGTTATTCTCGTGTGCCGATTGCTC----  4900
Viral RNA NGS       GTTTAGTAGAGTCTTTTCAAGGGTTATTCTCGTGTGCCGATTGCTCTATT
Sanger              GTTTAGTAGAGTCATTTCAAGGGTTATTCTCGTGTGCCGATTGCTCT---
Consensus           ************* ********************************
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Transcriptome NGS   -------------------------                    4950
Viral RNA NGS       AAACCGTAAAAAATGTCATCAAGCT
Sanger              -------------------------
Consensus
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S3 Fig. Comparison of the sequences of the Groundnut chlorotic fan-spot virus (GCFSV) M RNA as determined by next-generation sequencing (NGS) and Sanger sequencing methods. The nucleotide sequences from the transcriptome and viral RNA sequenced by RNA-seq are aligned with those sequenced by the Sanger method for comparison. The underlines indicate the nucleotides that are lost in the obtained sequences. The bold characters represent the nucleotides that are diverse among the three sequences.