

Dataset S2. Reconstructed genomes of Cannabis virome components and their comparison with other isolates of known viruses or related viruses. (A) Cannabis cryptic virus (CanCV). (B) Cannabis partiti-like virus (CanPLV). (C) Grapevine line pattern virus (GLPV). (D) Cannabis sativa mitovirus 1 (CasaMV1).

>CanCV RNA1 RdRp 304

>CanCV_RNA1_RdRp_306

>CanCV RNA2 CP 304

>CanCV RNA2 CP 306

>NC_031134.1 Cannabis cryptic virus isolate hemp09 RNA-dependent RNA polymerase gene, complete cds

CLUSTAL multiple sequence alignment by MUSCLE (3.8)

JN1_065336.1
NC_031134.1
CanCv_RNA1_RdRp_304
CanCv_RNA1_RdRp_306
MT893743.1

CAAGCCTTCACAAAGCCTGTGCTCTAATTATTCCACCACAAGCTGTCCAGTAGCCTTACAA
CAAGCCTTCACAAAGCCTGTGCTCTAATTATTCCACCACAAGCTGTCCAGTAGCCTTACAA
CAAGCCTTCACAAAGCCTGTGCTCTAATTATTCCACCACAAGCTGTCCAGTAGCCTTACAA
CAAGCCTTCACAAAGCCTGTGCTCTAATTATTCCACCACAAGCTGTCCAGTAGCCTTACAA
CAAGCCTTCACAAAGCCTGTGCTCTAATTATTCCACCACAAGCTGTCCAGTAGCCTTACAA

JN196536.1 CGCTGTCGCAATTAATCTTCTGCTGAACGTATGATCGCGACAAAAAGAGAAATGGCAACTTTA
NC_031134.1 CGCTGTCGCAATTAATCTTCTGCTGAACGTATGATCGCGACAAAAAGAGAAATGGCAACTTTA
CanCV_RNA1_RdRp_304 CAGTCTGTCGCAATTAATCTTCTGCTGAACGTATGATCGCGACAAAAAGAGAAATGGCAACTTTA
CanCV_RNA1_RdRp_306 CAGTCTGTCGCAATTAATCTTCTGCTGAACGTATGATCGCGACAAAAAGAGAAATGGCAACTTTA
MT893743.1 CGCTGTCGCAATTAATCTTCTGCTGAACGTATGATCGCGACAAAAAGAGAAATGGCAACTTTA

JN196536.1
NC_031134.1
CanCV_RNA1_RdRp_304
CanCV_RNA1_RdRp_306
MT893734.1

[illegible]

MT893743.1	TTCAAACCGATACATTGACAGACTTGCTCGTTGCTATTCGACCTTCTTTTCATTAGACTG * * * * *
JN196536.1 NC_031134.1 CanCV_RNA1_RdRp_304 CanCV_RNA1_RdRp_306 MT893743.1	GGCAAGTTATGATCAACCAATGCCCCGTGAATTACTGACATTTATTACACTGACTTCCT GTCAAGTTATGATCAACGACTGCCCGGTGAATTACTGACATTTATTACACTGACTTCCT GTCAAGTTATGATCAACGACTGCCCGGTGAATTACTGACATTTATTACACTGACTTCCT GTCAAGTTATGATCAACGACTGCCCGGTGAATTACTGACATTTATTACACTGACTTCCT * * * * *
JN196536.1 NC_031134.1 CanCV_RNA1_RdRp_304 CanCV_RNA1_RdRp_306 MT893743.1	TCGAAGCCTGATCGTTATTAAACATGGATACCAACCCAGTATGAATACTCCTTTTACCC TCGAAGCCTGATCGTTATTAAACATGGATACCAACCCAGTATGAATACTCCTCTTACCC TCGAAGCCTGATCGTTATTAAACATGGATACCAACCCAGTATGAATACTCCTCTTACCC TCGAAGCCTGATCGTTATTAAACATGGATACCAACCCAGTATGAATACTCCTCTTACCC TCGAAGCCTGATCGTTATTAAACATGGATACCAACCCAGTATGAATACTCCTCTTACCC * * * * *
JN196536.1 NC_031134.1 CanCV_RNA1_RdRp_304 CanCV_RNA1_RdRp_306 MT893743.1	TGACCTTGATGAACATAAGCTCTATGATAGAAGAATAATCTCTTTCTTCTTCATAC TGACCTTGATGAACATAAGCTCTATGATAGAATAATCTCTTTCTTCTTCATAC TGACCTTGATGAACATAAGCTCTATGATAGAATAATCTCTTTCTTCTTCATAC TGACCTTGATGAACATAAGCTCTATGATAGAATAATCTCTTTCTTCTTCATAC TGACCTTGATGAACATAAGCTCTATGATAGAATAATCTCTTTCTTCTTCATAC * * * * *
JN196536.1 NC_031134.1 CanCV_RNA1_RdRp_304 CanCV_RNA1_RdRp_306 MT893743.1	ATGGTATAACAATATGACCTTCCTCTCCCGGATGGTTTGCATACCCGAGATCTTACTG ATGGTATAACAATATGACCTTCCTCTCCCGGATGGTTTGCATACCCGAGATCTTACTG ATGGTATAACAATATGACCTTCCTCTCCCGGATGGTTTGCATACCCGAGATCTTACTG ATGGTATAACAATATGACCTTCCTCTCCCGGATGGTTTGCATACCCGAGATCTTACTG ATGGTATAACAATATGACCTTCCTCTCCCGGATGGTTTGCATACCCGAGATCTTACTG * * * * *
JN196536.1 NC_031134.1 CanCV_RNA1_RdRp_304 CanCV_RNA1_RdRp_306 MT893743.1	TGGAGTCCCTTCTGGCCTCTACAATACTCAATACCTTGATTCTTTTGGCAATCTATTTT TGGAGTCCCTTCTGGCCTCTACAATACTCAATACCTTGATTCTTTTGGCAATCTATTTT TGGAGTCCCTTCTGGCCTCTACAATACTCAATACCTTGATTCTTTTGGCAATCTATTTT TGGAGTCCCTTCTGGCCTCTACAATACTCAATACCTTGATTCTTTTGGCAATCTATTTT TGGAGTCCCTTCTGGCCTCTACAATACTCAATACCTTGATTCTTTTGGCAATCTATTTT * * * * *
JN196536.1 NC_031134.1 CanCV_RNA1_RdRp_304 CanCV_RNA1_RdRp_306 MT893743.1	AATAATTGATGCCATGATTGAATCGGTTTCACTGACTCTGAAATCGATGGATTGTCTCT AATAATTGATGCCATGATTGAATCGGTTTCACTGACTCTGAAATCGATGGATTGTCTCT AATAATTGATGCCATGATTGAATCGGTTTCACTGACTCTGAAATCGATGGATTGTCTCT AATAATTGATGCCATGATTGAATCGGTTTCACTGACTCTGAAATCGATGGATTGTCTCT AATAATTGATGCCATGATTGAATCGGTTTCACTGACTCTGAAATCGATGGATTGTCTCT * * * * *
JN196536.1 NC_031134.1 CanCV_RNA1_RdRp_304 CanCV_RNA1_RdRp_306 MT893743.1	CCTAATTTTAGGTGATGACAACACTGGTATGACACAGATGCACATTATCGCATCTCCCA CCTAATTTTAGGTGATGACAACACTGGTATGACACAGATGCACATTATCGCATCTCCCA CCTAATTTTAGGTGATGACAACACTGGTATGACACAGATGCACATTATCGCATCTCCCA CCTAATTTTAGGTGATGACAACACTGGTATGACACAGATGCACATTATCGCATCTCCCA CCTAATTTTAGGTGATGACAACACTGGTATGACACAGATGCACATTATCGCATCTCCCA * * * * *
JN196536.1 NC_031134.1 CanCV_RNA1_RdRp_304 CanCV_RNA1_RdRp_306 MT893743.1	ATTTCATCAACTTTCTTGAAAAATATGCTTTAGAACGCTACAACTGGTCTCTCTGCGAC ATTTCATCAACTTTCTTGAAAAATATGCTTTAGAACGCTAACAATGGTCTCTCTGCGAC ATTTCATCAACTTTCTTGAAAAATATGCTTTAGAACGCTACAACTGGTCTCTCTGCGAC ATTTCATCAACTTTCTTGAAAAATATGCTTTAGAACGCTACAACTGGTCTCTCTGCGAC ATTTCATCAACTTTCTTGAAAAATATGCTTTAGAACGCTACAACTGGTCTCTCTGCGAC * * * * *
JN196536.1 NC_031134.1 CanCV_RNA1_RdRp_304 CanCV_RNA1_RdRp_306 MT893743.1	CAAAATCTGTTCTAACAACTCTGCGCTCAAAAATTGAGACCTCGGTTACCAATGTAAC CAAAATCTGTTCTAACAACTCTGCGCTCAAAAATTGAGACCTCGGTTACCAATGTAAC CAAAATCTGTTCTAACAACTCTGCGCTCAAAAATTGAGACCTCGGTTACCAATGTAAC CAAAATCTGTTCTAACAACTCTGCGCTCAAAAATTGAGACCTCGGTTACCAATGTAAC CAAAATCTGTTCTAACAACTCTGCGCTCAAAAATTGAGACCTCGGTTACCAATGTAAC * * * * *
JN196536.1 NC_031134.1 CanCV_RNA1_RdRp_304 CanCV_RNA1_RdRp_306 MT893743.1	TGGATCCCCATAAACCGGACATTGATAAACTTGTGCCCACTCTGTTCCCTGAAAAATGG TGGATCCCCATAAACCGGACATTGATAAACTTGTGCCCACTCTGTTCCCTGAAAAATGG TGGATCCCCATAAACCGGACATTGATAAACTTGTGCCCACTCTGTTCCCTGAAAAATGG TGGATCCCCATAAACCGGACATTGATAAACTTGTGCCCACTCTGTTCCCTGAAAAATGG TGGATCCCCATAAACCGGACATTGATAAACTTGTGCCCACTCTGTTCCCTGAAAAATGG * * * * *
JN196536.1 NC_031134.1 CanCV_RNA1_RdRp_304 CanCV_RNA1_RdRp_306 MT893743.1	ACTCAAGCCACACACCATTGTCTGCTAGAGCTGTGCGGAATCGCATATGCCGCTGCCGGCCA ACTCAAGCCACACACCATTGTCTGCTAGAGCTGTGCGGAATCGCATATGCCGCTGCCGGCCA ACTCAAGCCACACACCATTGTCTGCTAGAGCTGTGCGGAATCGCATATGCCGCTGCCGGCCA ACTCAAGCCACACACCATTGTCTGCTAGAGCTGTGCGGAATCGCATATGCCGCTGCCGGCCA ACTCAAGCCACACACCATTGTCTGCTAGAGCTGTGCGGAATCGCATATGCCGCTGCCGGCCA * * * * *
JN196536.1 NC_031134.1 CanCV_RNA1_RdRp_304 CanCV_RNA1_RdRp_306 MT893743.1	AGATTACGTATTTCACTCCTTTTGCCAGGATGTATATAATATGTTTAGGTCTTATTATAA AGATTACGTATTTCACTCCTTTTGCCAGGATGTATATAATATGTTTAGGTCTTATTATAA AGATTACGTATTTCACTCCTTTTGCCAGGATGTATATAATATGTTTAGGTCTTATTATAA AGATTACGTATTTCACTCCTTTTGCCAGGATGTATATAATATGTTTAGGTCTTATTATAA AGATTACGTATTTCACTCCTTTTGCCAGGATGTATATAATATGTTTAGGTCTTATTATAA * * * * *
JN196536.1 NC_031134.1 CanCV_RNA1_RdRp_304 CanCV_RNA1_RdRp_306 MT893743.1	ACCCGATGCTCGTGCAAACTATTCTTCCAACGTCAAGTACTCCAAAATCTTGAAGATGG ACCCGATGCTCGTGCAAACTATTCTTCCAACGTCAAGTACTCCAAAATCTTGAAGATGG ACCCGATGCTCGTGCAAACTATTCTTCCAACGTCAAGTACTCCAAAATCTTGAAGATGG ACCCGATGCTCGTGCAAACTATTCTTCCAACGTCAAGTACTCCAAAATCTTGAAGATGG ACCCGATGCTCGTGCAAACTATTCTTCCAACGTCAAGTACTCCAAAATCTTGAAGATGG * * * * *
JN196536.1 NC_031134.1 CanCV_RNA1_RdRp_304 CanCV_RNA1_RdRp_306 MT893743.1	AATTCCCTGATTAGCCACACCGGTTGTGCCGCCATTCCCTTCATTATTCGAAGTCCGCGA AATTCCCTGATTAGCCACACCGGTTGTGCCGCCATTCCCTTCATTATTCGAAGTCCGCGA AATTCCCTGATTAGCCACACCGGTTGTGCCGCCATTCCCTTCATTATTCGAAGTCCGCGA AATTCCCTGATTAGCCACACCGGTTGTGCCGCCATTCCCTTCATTATTCGAAGTCCGCGA AATTCCCTGATTAGCCACACCGGTTGTGCCGCCATTCCCTTCATTATTCGAAGTCCGCGA * * * * *
JN196536.1 NC_031134.1 CanCV_RNA1_RdRp_304 CanCV_RNA1_RdRp_306 MT893743.1	GATGTACTCTGAATACAAAGGACCTCTCTCTTTTGAACCTAAATGGAACAAAGCTCACTT GATGTACTCTGAATACAAAGGACCTCTCTCTTTTGAACCTAAATGGAACAAAGCTCACTT GATGTACTCTGAATACAAAGGACCTCTCTCTTTTGAACCTAAATGGAACAAAGCTCACTT GATGTACTCTGAATACAAAGGACCTCTCTCTTTTGAACCTAAATGGAACAAAGCTCACTT GATGTACTCTGAATACAAAGGACCTCTCTCTTTTGAACCTAAATGGAACAAAGCTCACTT * * * * *
JN196536.1 NC_031134.1 CanCV_RNA1_RdRp_304 CanCV_RNA1_RdRp_306 MT893743.1	CATAAATGACCCGAATGACATCCCTCCTTTCTCCAAAATATGCGAGACTATGAAAAGGA CATAAATGACCCGAATGACATCCCTCCTTTCTCCAAAATATGCGAGACTATGAAAAGGA CATAAATGACCCGAATGACATCCCTCCTTTCTCCAAAATATGCGAGACTATGAAAAGGA CATAAATGACCCGAATGACATCCCTCCTTTCTCCAAAATATGCGAGACTATGAAAAGGA CATAAATGACCCGAATGACATCCCTCCTTTCTCCAAAATATGCGAGACTATGAAAAGGA * * * * *
JN196536.1 NC_031134.1 CanCV_RNA1_RdRp_304 CanCV_RNA1_RdRp_306 MT893743.1	ACATAATCTTCTGTTCGAGTTTCACTACTTTTGAACGGTGTGCGCTAGCACAAAAAA ACATAATCTTCTGTTCGAGTTTCACTACTTTTGAACGGTGTGCGCTAGCACAAAAAA ACATAATCTTCTGTTCGAGTTTCACTACTTTTGAACGGTGTGCGCTAGCACAAAAAA ACATAATCTTCTGTTCGAGTTTCACTACTTTTGAACGGTGTGCGCTAGCACAAAAAA ACATAATCTTCTGTTCGAGTTTCACTACTTTTGAACGGTGTGCGCTAGCACAAAAAA * * * * *
JN196536.1	TTTGCCGTAAATTTTATCTTCGTTTTTAAATTTTCGTTGATTTTGCAAATTTATATAAA

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NC_031134.1      TTTGCCGTAATTTTTATCTCGTTTTTAAATTTTCGTTGATTTTGCAAATTATAT---
CanCV_RNA1_RdRp_304 -GATTTTTCTAAAGCGCCCCGCTTTAGTTATTAAGAATTTACATTCGCTATATTATCA
CanCV_RNA1_RdRp_306 TTTGCCGTAATTTTTATCTCGTTTTTAAATTTTCGTTGATTTTGCAAAT-----
MT893743.1      TTTGCCG-----
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JN196536.1      AAAAAAAAAAAAAAAAAAAAAA
NC_031134.1      -----
CanCV_RNA1_RdRp_304 -----
CanCV_RNA1_RdRp_306 -----
MT893743.1      -----

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CanCV_RNA2_CP_304 AGATTTTCTAAAGCGCCCCGCTTTAGTTATTAAGAATTTACATTCGCTATATTATCA
JN196537.1      -GATTTTTCTAAAGCGCCCCGCTTTAGTTATTAAGAATTTACATTCGCTATATTATCA
CanCV_RNA2_CP_306 AGATTTTCTAAAGCGCCCCGCTTTAGTTATTAAGAATTTACATTCGCTATATTATCA
NC_031130.1      AGATTTTCTAAAGCGCCCCGCTTTAGTTATTGAGAATTTACATTCGCTATATTATCA
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CanCV_RNA2_CP_304 AGTCCTCGAAAAACCTCTGCTCTAATTTAAGATGCTTCCTCAACCATCACTTCGCGTC
JN196537.1      AGTCCTCGAAAAACCTCTGCTCTAATTTAAGATGCTTCCTCAACCATCACTTCGCGTC
CanCV_RNA2_CP_306 AGTCCTCGAAAAACCTCTGCTCTAATTTAAGATGCTTCCTCAACCATCACTTCGCGTC
NC_031130.1      AGTCCTCGAAAAACCTCTGCTCTAATTTAAGATGCTTCCTCAACCATCACTTCGCGTC
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CanCV_RNA2_CP_304 TCGATGCCCTCAAAGCAAGAAGCTGATAATTGAATTCAAAGAAGCGAAAACTCCTGTCC
JN196537.1      TCGATGCCCTCAAAGCAAGAAGCTGATAATTGAATTCAAAGAAGCGAAAACTCCTGTCC
CanCV_RNA2_CP_306 TCGATGCCCTCAAAGCAAGAAGCTGATAATTGAATTCAAAGAAGCGAAAACTCCTGTCC
NC_031130.1      TCGATGCCCTCAAAGCAAGAAGCTGATAATTGAATTCAAAGAAGCGAAAACTCCTGTCC
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CanCV_RNA2_CP_304 CCTCTGCTGACATTTTGCAACTCTTTGCTGACAACACCGCGCGCGCTCTGACTCATCCA
JN196537.1      CCTCTGCTGACATTTTGCAACTCTTTGCTGACAACACCGCGCGCGCTCTGACTCATCCA
CanCV_RNA2_CP_306 CCTCTGCTGACATTTTGCAACTCTTTGCTGACAACACCGCGCGCGCTCTGACTCATCCA
NC_031130.1      CCTCTGCTGACATTTTGCAACTCTTTGCTGACAACACCGCGCGCGCTCTGACTCATCCA
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CanCV_RNA2_CP_304 ATGAATGGATTATTGATGTTTTCCCAAACCTTCACCTCCCATCCTGATGACATTATGCTCA
JN196537.1      ATGAATGGATTATTGATGTTTTCCCAAACCTTCACCTCCCATCCTGATGACATTATGCTCA
CanCV_RNA2_CP_306 ATGAATGGATTATTGATGTTTTCCCAAACCTTCACCTCCCATCCTGATGACATTATGCTCA
NC_031130.1      ATGAATGGATTATTGATGTTTTCCCAAACCTTCACCTCCCATCCTGATGACATTATGCTCA
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CanCV_RNA2_CP_304 ATGCGATTTCGCCACGCGAACGCCACTGCTCAACGTGAACATTCCAAGTCATCTGTTGCCA
JN196537.1      ATGCGATTTCGCCACGCGAACGCCACTGCTCAACGTGAACATTCCAAGTCATCTGTTGCCA
CanCV_RNA2_CP_306 ATGCGATTTCGCCACGCGAACGCCACTGCTCAACGTGAACATTCCAAGTCATCTGTTGCCA
NC_031130.1      ATGCGATTTCGCCACGCGAACGCCACTGCTCAACGTGAACATTCCAAGTCATCTGTTGCCA
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CanCV_RNA2_CP_304 CCATTGCGATGATCATCTGTCCATTGCTCTATGGATTTTCCCTCATCAATGACCTCAATG
JN196537.1      CCATTGCGATGATCATCTGTCCATTGCTCTATGGATTTTCCCTCATCAATGACCTCAATG
CanCV_RNA2_CP_306 CCATTGCGATGATCATCTGTCCATTGCTCTATGGATTTTCCCTCATCAATGACCTCAATG
NC_031130.1      CCATTGCGATGATCATCTGTCCATTGCTCTATGGATTTTCCCTCATCAATGACCTCAATG
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CanCV_RNA2_CP_304 TCCGTCCTGCTCCGCTGCTCATGCCCCGATCTGCGGCCGAATCCAACCTGGAGATCTGAAT
JN196537.1      TCCGTCCTGCTCCGCTGCTCATGCCCCGATCTGCGGCCGAATCCAACCTGGAGATCTGAAT
CanCV_RNA2_CP_306 TCCGTCCTGCTCCGCTGCTCATGCCCCGATCTGCGGCCGAATCCAACCTGGAGATCTGAAT
NC_031130.1      TCCGTCCTGCTCCGCTGCTCATGCCCCGATCTGCGGCCGAATCCAACCTGGAGATCTGAAT
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CanCV_RNA2_CP_304 TTGTGAAATTTCTGTCCACCTTGCCCTGTACCTGAGTTCCTTATTCCTCATCCTATCCAGT
JN196537.1      TTGTGAAATTTCTGTCCACCTTGCCCTGTACCTGAGTTCCTTATTCCTCATCCTATCCAGT
CanCV_RNA2_CP_306 TTGTGAAATTTCTGTCCACCTTGCCCTGTACCTGAGTTCCTTATTCCTCATCCTATCCAGT
NC_031130.1      TTGTGAAATTTCTGTCCACCTGCGCTGTACCTGAGTTCCTTATTCCTCATCCTATCCAGT
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CanCV_RNA2_CP_304 TTCACGCTTTTGAACCGCAAGAACAAGAATGTTTTCTTTATTCCTCTGCGCGCGGCT
JN196537.1      TTCACGCTTTTGAACCGCAAGAACAAGAATGTTTTCTTTATTCCTCTGCGCGCGGCT
CanCV_RNA2_CP_306 TTCACGCTTTTGAACCGCAAGAACAAGAATGTTTTCTTTATTCCTCTGCGCGCGGCT
NC_031130.1      TTCACGCTTTTGAACCGCAAGAACAAGAATGTTTTCTTTATTCCTCTGCGCGCGGCT
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CanCV_RNA2_CP_304 ATGACCACGACCAATTCTTCGGACGTGTTATCCTTTGAATATGTTCCGCCGAATTCATG
JN196537.1      ATGACCACGACCAATTCTTCGGACGTGTTATCCTTTGAATATGTTCCGCCGAATTCATG
CanCV_RNA2_CP_306 ATGACCACGACCAATTCTTCGGACGTGTTATCCTTTGAATATGTTCCGCCGAATTCATG
NC_031130.1      ATGACCACGACCAATTCTTCGGACGTGTTATCCTTTGAATATGTTCCGCCGAATTCATG
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CanCV_RNA2_CP_304 ACTGTACTGCCACACTGCCCGAAACTCCTCCAAAATCGATGTCCTTAGAGACCTCTACT
JN196537.1      ACTGTACTGCCACACTGCCCGAAACTCCTCCAAAATCGATGTCCTTAGAGACCTCTACT
CanCV_RNA2_CP_306 ACTGTACTGCCACACTGCCCGAAACTCCTCCAAAATCGATGTCCTTAGAGACCTCTACT
NC_031130.1      ACTGTACTGCCACACTGCCCGAAACTCCTCCAAAATCGATGTCCTTAGAGACCTCTACT
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CanCV_RNA2_CP_304 CCAGAGTACTCTACTCAATTACTGACCCAGCCTACACCTGGGTCATTCCCGATCTTTATG
JN196537.1      CCAGAGTACTCTACTCAATTACTGACCCAGCCTACACCTGGGTCATTCCCGATCTTTATG
CanCV_RNA2_CP_306 CCAGAGTACTCTACTCAATTACTGACCCAGCCTACACCTGGGTCATTCCCGATCTTTATG
NC_031130.1      CCAGAGTACTCTACTCAATTACTGACCCAGCCTACACCTGGGTCATTCCCGATCTTTATG
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CanCV_RNA2_CP_304 GAATCACCCCTTAGCGCTGCTGACATTACCCAAGCTCAATACATGAATTCAAAACCTTACC
JN196537.1      GAATCACCCCTTAGCGCTGCTGACATTACCCAAGCTCAATACATGAATTCAAAACCTTACC
CanCV_RNA2_CP_306 GAATCACCCCTTAGCGCTGCTGACATTACCCAAGCTCAATACATGAATTCAAAACCTTACC
NC_031130.1      GAATCACCCCTTAGCGCTGCTGACATTACCCAAGCTCAATACATGAATTCAAAACCTTACC
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CanCV_RNA2_CP_304 AAGTTTCTCTCTGTTATTAATCCTGTCTGTTCCGCGACTTTCAGCGCGGATCCTCCC
JN196537.1      AAGTTTCTCTCTGTTATTAATCCTGTCTGTTCCGCGACTTTCAGCGCGGATCCTCCC
CanCV_RNA2_CP_306 AAGTTTCTCTCTGTTATTAATCCTGTCTGTTCCGCGACTTTCAGCGCGGATCCTCCC
NC_031130.1      AAGTTTCTCTCTGTTATTAATCCTGTCTGTTCCGCGACTTTCAGCGCGGATCCTCCC
*****

CanCV_RNA2_CP_304 TCGCCGCTCTATCATTCAAAGCTCCAACGTTTGCCCTCTGCTAACGTTAACGCTTATGATC
JN196537.1      TCGCCGCTCTATCATTCAAAGCTCCAACGTTTGCCCTCTGCTAACGTTAACGCTTATGATC
CanCV_RNA2_CP_306 TCGCCGCTCTATCATTCAAAGCTCCAACGTTTGCCCTCTGCTAACGTTAACGCTTATGATC
NC_031130.1      TCGCCGCTCTATCATTCAAAGCTCCAACGTTTGCCCTCTGCTAACGTTAACGCTTATGATC
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CanCV_RNA2_CP_304 TGATGTTTTTCAGCCACTTCCGCTAATCTGCGTGAATTAAGGTTTGCTCAACATCAGTCC
JN196537.1      TGATGTTTTTCAGCCACTTCCGCTAATCTGCGTGAATTAAGGTTTGCTCAACATCAGTCC
CanCV_RNA2_CP_306 TGATGTTTTTCAGCCACTTCCGCTAATCTGCGTGAATTAAGGTTTGCTCAACATCAGTCC
NC_031130.1      TGATGTTTTTCAGCCACTTCCGCTAATCTGCGTGAATTAAGGTTTGCTCAACATCAGTCC
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CanCV_RNA2_CP_304 ATGCCGTTATCTCTGATGATGATCATGTAAGACCGCCTTGGTCAATTATTTGCTGATG
JN196537.1      ATGCCGTTATCTCTGATGATGATCATGTAAGACCGCCTTGGTCAATTATTTGCTGATG
CanCV_RNA2_CP_306 ATGCCGTTATCTCTGATGATGATCATGTAAGACCGCCTTGGTCAATTATTTGCTGATG
NC_031130.1      ATGCCGTTATCTCTGATGATGATCATGTAAGACCGCCTTGGTCAATTATTTGCTGATG
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CanCV_RNA2_CP_304 JN196537.1 CanCV_RNA2_CP_306 NC_031130.1	CTACCACCTCAACAATCATTAAACATGGATACTCCACATACGCTCTTCCCACCTGGTCCC CTACCACCTCAACAATCATTAAACATGGATACTCCACATATGCTCTTCCCACCTGGTCCC CTACCACCTCAACAATCATTAAACATGGATACTCCACATATGCTCTTCCCACCTGGTCCC CTACCACCTCAACAATCATTAAACATGGATACTCCACATACGCTCTTCCCACCTGGTCCC *****
CanCV_RNA2_CP_304 JN196537.1 CanCV_RNA2_CP_306 NC_031130.1	ACAGTGAAGTCACCAACAAGGCTCAAACTTTCGTGCCATTACTGCCCAACAACAAAT ACAGTGAAGTCACCAACAAGGCTCAAACTTTCGTGCCATTACTGCCCAACAACAAAT ACAGTGAAGTCACCAACAAGGCTCAAACTTTCGTGCCATTACTGCCCAACAACAAAT ACAGTGAAGTCACCAACAAGGCTCAAACTTTCGTGCCATTACTGCCCAACAACAAAT *****
CanCV_RNA2_CP_304 JN196537.1 CanCV_RNA2_CP_306 NC_031130.1	CTCTGAAGATGCCCGTGCCCAAGACTTCTGTTTCCTTCAACGCCCTACAGCTGAAATTC CTCTGAAGATGCCCGTGCCCAAGACTTCTGTTTCCTTCAACGCCCTACAGCTGAAATTC CTCTGAAGATGCCCGTGCCCAAGACTTCTGTTTCCTTCAACGCCCTACAGCTGAAATTC CTCTGAAGATGCCCGTGCCCAAGACTTCTGTTTCCTTCAACGCCCTACAGCTGAAATTC *****
CanCV_RNA2_CP_304 JN196537.1 CanCV_RNA2_CP_306 NC_031130.1	TCACACCCACAACCTCGAAGAC-GTACGTTACGTACGCACCGATGCCCCACTGAACCAG TCAACCCACAACCTCGAAGACGTACGTTACGTACGCACCGATGCCCCACTGAACCAG TCACACCCACAACCTCGAAGAC-GTACGTTACGTACGCACCGATGCCCCACTGAACCAG TCACACCCACAACCTCGAAGAC-GTACGTTACGTACGCACCGATGCCCCACTGAACCAG *** *****
CanCV_RNA2_CP_304 JN196537.1 CanCV_RNA2_CP_306 NC_031130.1	TGGCTCTGCCCCAGAATCACAGTATCATCCGTAACCTCCCTCTCTGCCTCAGAAACAATA TGGCTCTGCCCCAGAATCACAGTATCATCCGTAACCTCCCTCTCTGCCTCAGAAACAATA TGGCTCTGCCCCAGAATCACAGTATCATCCGTAACCTCCCTCTCTGCCTCAGAAACAATA TGGCTCTGCCCCAGAATCACAGTATCATCCGTAACCTCCCTCTCTGCCTCAGAAACAATA ** *****
CanCV_RNA2_CP_304 JN196537.1 CanCV_RNA2_CP_306 NC_031130.1	CGAATGCCGCCGCTTTCCCGCGTAGACAACAACACACTGATCAATTTTAGTGAAGAAA CGAATGCCGCCGCTTTCCCGCGTAGACAACAACACACTGATCAATTTTAGTGAAGAAA CGAATGCCGCCGCTTTCCCGCGTAGACAACAACACACTGATCAATTTTAGTGAAGAAA CGAATGCCGCCGCTTTCCCGCGTAGACAACAACACACTGATCAATTTTAGTGAAGAAA *****
CanCV_RNA2_CP_304 JN196537.1 CanCV_RNA2_CP_306 NC_031130.1	TCCACACTGTTCCAAGCGTCTTAGTGCTCGACACCGATGGTGATCAAAOCATCACTGCC TCCACACTGTTCCAAGCGTCTTAGTGCTCGACACCGATGGTGATCAAAOCATCACTGCC TCCACACTGTTCCAAGCGTCTTAGTGCTCGACACCGATGGTGATCAAAOCATCACTGCC TCCACACTGTTCCAAGCGTCTTAGTGCTCGACACCGATGGTGATCAAAOCATCACTGCC *****
CanCV_RNA2_CP_304 JN196537.1 CanCV_RNA2_CP_306 NC_031130.1	ACCTGCCACTACTTGCCGGAAGATCATTGAATCTTTTGAACGATGGAACCACTATCG ACCTGCCACTACTTGCCGGAAGATCATTGAATCTTTTGAACGATGGAACCACTATCG ACCTGCCACTACTTGCCGGAAGATCATTGAATCTTTTGAACGATGGAACCACTATCG ACCTGCCACTACTTGCCGGAAGATCATTGAATCTTTTGAACGATGGAACCACTATCG ** *****
CanCV_RNA2_CP_304 JN196537.1 CanCV_RNA2_CP_306 NC_031130.1	AAATGCCCAATGCCATGAAATCACTCGGCATGCAAACTGCATGTTGCTGACTCTGCCA AAATGCCCAATGCCATGAAATCACTCGGCATGCAAACTGCATGTTGCTGACTCTGCCA AAATGCCCAATGCCATGAAATCACTCGGCATGCAAACTGCATGTTGCTGACTCTGCCA AAATGCCCAATGCCATGAAATCACTCGGCATGCAAACTGCATGTTGCTGACTCTGCCA *****
CanCV_RNA2_CP_304 JN196537.1 CanCV_RNA2_CP_306 NC_031130.1	TTCCGTACAAGTATGTTGCCCTGGCTCGGCTTACCATCCCGTTAATGCTGGAACATAC TTCCGTACAAGTATGTTGCCCTGGCTCGGCTTACCATCCCGTTAATGCTGGAACATAC TTCCGTACAAGTATGTTGCCCTGGCTCGGCTTACCATCCCGTTAATGCTGGAACATAC TTCCGTACAAGTATGTTGCCCTGGCTCGGCTTACCATCCCGTTAATGCTGGAACATAC *****
CanCV_RNA2_CP_304 JN196537.1 CanCV_RNA2_CP_306 NC_031130.1	TGCCGCCCGCTTCTCGAGTACTCCCAATTCCACTCCTCGCTGCCTGCCTCGCTCGTTC TGCCGCCCGCTTCTCGAGTACTCCCAATTCCACTCCTCGCTGCCTGCCTCGCTCGTTC TGCCGCCCGCTTCTCGAGTACTCCCAATTCCACTCCTCGCTGCCTGCCTCGCTCGTTC TGCCGCCCGCTTCTCGAGTACTCCCAATTCCACTCCTCGCTGCCTGCCTCGCTCGTTC *****
CanCV_RNA2_CP_304 JN196537.1 CanCV_RNA2_CP_306 NC_031130.1	TATACAATCGACTGCGTGTTAATCTCCCCGATTCAACCTCGCTATCAATGAAGAACGCA TATACAATCGACTGCGTGTTAATCTCCCCGATTCAACCTCGCTATCAATGAAGAACGCA TATACAATCGACTGCGTGTTAATCTCCCCGATTCAACCTCGCTATCAATGAAGAACGCA TATACAATCGACTGCGTGTTAATCTCCCCGATTCAACCTCGCTATCAATGAAGAACGCA *****
CanCV_RNA2_CP_304 JN196537.1 CanCV_RNA2_CP_306 NC_031130.1	TTGGCAACATTCTCCAGGAATGACTCTACTTGATGGAGTCACTGTCTCCGGTATGTT TTGGCAACATTCTCCAGGAATGACTCTACTTGATGGAGTCACTGTCTCCGGTATGTT TTGGCAACATTCTCCAGGAATGACTCTACTTGATGGAGTCACTGTCTCCGGTATGTT TTGGCAACATTCTCCAGGAATGACTCTACTTGATGGAGTCACTGTCTCCGGTATGTT *****
CanCV_RNA2_CP_304 JN196537.1 CanCV_RNA2_CP_306 NC_031130.1	AGTCCTTTCTAGGATTCAACACCGTCAGCCGTGTGACAATGCCGACAATGGAGACAATG AGTCCTTTCTAGGATTCAACACCGTCAGCCGTGTGACAATGCCGACAATGGAGACAATG AGTCCTTTCTAGGATTCAACACCGTCAGCCGTGTGACAATGCCGACAATGGAGACAATG AGTCCTTTCTAGGATTCAACACCGTCAGCCGTGTGACAATGCCGACAATGGAGACAATG *****
CanCV_RNA2_CP_304 JN196537.1 CanCV_RNA2_CP_306 NC_031130.1	TCCCGGCATGCCCGGAACCTGCTTCTGGTCTGGTCCCGTACACGTACACTCCGTATG TCCCGGCATGCCCGGAACCTGCTTCTGGTCTGGTCCCGTACACGTACACTCCGTATG TCCCGGCATGCCCGGAACCTGCTTCTGGTCTGGTCCCGTACACGTACACTCCGTATG TCCCGGCATGCCCGGAACCTGCTTCTGGTCTGGTCCCGTACACGTACACTCCGTATG *****
CanCV_RNA2_CP_304 JN196537.1 CanCV_RNA2_CP_306 NC_031130.1	AATCTGATGACCTGCCTGAACAGCACTTGGCGAATCAAGGCACACTACTTGCACAAAC AATCTGATGACCTGCCTGAACAGCACTTGGCGAATCAAGGCACACTACTTGCACAAAC AATCTGATGACCTGCCTGAACAGCACTTGGCGAATCAAGGCACACTACTTGCACAAAC AATCTGATGACCTGCCTGAACAGCACTTGGCGAATCAAGGCACACTACTTGCACAAAC *****
CanCV_RNA2_CP_304 JN196537.1 CanCV_RNA2_CP_306 NC_031130.1	TCCGTACCATTCTCGGAACGGACTACAATCTTGTTCAAGCCAAGCATCCATGAATCGC TCCGTACCATTCTCGGAACGGACTACAATCTTGTTCAAGCCAAGCATCCATGAATCGC TCCGTACCATTCTCGGAACGGACTACAATCTTGTTCAAGCCAAGCATCCATGAATCGC TCCGTACCATTCTCGGAACGGACTACAATCTTGTTCAAGCCAAGCATCCATGAATCGC *****
CanCV_RNA2_CP_304 JN196537.1 CanCV_RNA2_CP_306 NC_031130.1	TCCCCGTCGTTTAAGCAATCTCTCATCCTCTTAATGTTTAAGTTTATGATGTTTGAT TCCCCGTCGTTTAAGCAATCTCTCATCCTCTTAATGTTTAAGTTTATGATGTTTGAT TCCCCGTCGTTTAAGCAATCTCTCATCCTCTTAATGTTTAAGTTTATGATGTTTGAT TCCCCGTCGTTTAAGCAATCTCTCATCCTCTTAATGTTTAAGTTTATGATGTTTGAT *****
CanCV_RNA2_CP_304 JN196537.1 CanCV_RNA2_CP_306 NC_031130.1	TGGCCTCCTTTTCCGACAAACACGCTGATGCTACGCTGTTTTGTTTTTTCGTTTTATTT TGGCCTCCTTTTCCGACAAACACGCTGATGCTACGCTGTTTTGTTTTTTCGTTTTATTT TGGCCTCCTTTTCCGACAAACACGCTGATGCTACGCTGTTTTGTTTTTTCGTTTTATTT TGGCCTCCTTTTCCGACAAACACGCTGATGCTACGCTGTTTTGTTTTTTCGTTTTATTT *****
CanCV_RNA2_CP_304 JN196537.1 CanCV_RNA2_CP_306 NC_031130.1	CCTGAACTTTTTATTTTCAGTCTTTTTAACGTTATTTTCTACTTTAAG----- CCTGAACTTTTTATTTTCAGTCTTTTTAACGTTATTTTCTACTTTAAGAAAAAAAAA CCTGAACTTTTTATTTTCAGTCTTTTTAACGTTATTTTCTACTTTAAG----- CCTGAACTTTTTATTTTCAGTCTTTTTAACGTTATTTTCTACTTTAAG----- *****
CanCV_RNA2_CP_304 JN196537.1 CanCV_RNA2_CP_306 NC_031130.1	----- AAAAAAAAAAAAA -----

(B) Cannabis partiti-like virus (CanPLV)

>CanPLV_NewPartiti_315
 CCGTTTTACCAACGCGGAAAGCTTACACTTTTACACTTTCGCTTTAATGTTTTATACGTAAGCAAGCGCG**ATG**CGGTATCGCACTACTTCAAGTCACGGGACTTCAACTTCATATTTCTTCATTTCGACGGCCCTAAAGCGGATATCGCGATT
 ACCCGGTAGTCCCGGGTTTCGACTTGTCTCTCAACCTCGAGAAGATCCACTAGCGCGACGTGCTGTTGAGCATGTCTTTGGGAAAGCCTATGTTGACTCGTGCTTCGCTCGTCTCCATCGAAGTACTATGTCCTATGAGGCGCTGGT
 GTCTGACTTATTCGAGTTTGTATCGGTTGCTTCCCAATCGCCAGTCGATGATCCAGTCTATGCGATGGTTCTCGAGTCGGTGAGGCGAGGACTTACACGCACCGAGATTACTCGTACCACTACTATTCGGAGCGGTGACCAAACTTCCCGA
 CTTTCCCGCGAGAGTCTCCAGGTTTGTGCGTATTAAGAACATCGGTTATTAAGACAAAGGTGAGGTTGTGCGATGACACCTACAGATTAGAGGAGATTAAACGGCGCTGGCACTACATTGGCTTCGGAGTGATCGAGGACCGTTAACCGGA
 TACCTGCTATTTCGCAAGATCTCAGGTATGTGACGTGTCCCAAGCAAAGGTTTCGGGCGGTTTGGGGGTTATCCCTTTTCGTCTATCTTGAAGAAGCCGATTCTTCTATCCGATACTGGAGCACTTAAGAGGTAAAGGTCATAACTTCCC
 AATTGGCTATGCTGTGAATACAGTAAGGGTGGTCTTGTCCGCATATCCGAGATGGCGCTTCGTGTCCGGTGGAAGTATATGATGACTGATTGGAGATAAATTGATAAATCTATACCTCTTGGCTGATTTCGGGATGCTCTTTCTCT
 TTTGGCTGAATAATTGACTCTCCACACGCTGTTGATTTCGAGGGTTTGCATGGCATGTCCGAGGATATCTAGCAAGCAGCCTTGGAGAAGATTGTGACTATTTTGTGAGACTCCAAGTCCGATACCTGTAAGGGTGAGCGTTTCTCT
 TGTTAGATCTGGCTGTGCTTCGGGGTCGTGCTTCAGACAGTATTGATACTACTCAATTAACGTGATTTGCTTACCCGTAACATCTCTATAAATCTGTGGGTTCTTTCTCTCTGTGTAAGTGTACCTTGGGAGCATGGTGTGTGTGTTT
 CTCTCTCTCGGAGCTGATGATGATCTCGGTAGTATGCGCCGCTTGTGCTCACGAGCGCTTTGGCTCTGTCTTACGCCCGATAAATCATATGTTACTACCAAGCTGAGAATCCACTTCTTGGTTACTACATAGGCCCATCGGCATGCC
 TAACAGAGATCAGGCTCTCTGATTGTATCGTTGTTTCATCCTCGAGAAAGTCGCGAGACTGCTGTGAGTGCGCTGTCTGCTGCGCTTGGCCAGTTTGGGCGAAATTTGATCCTCTAATTGCTGAGTCATGGTTTAGGGTCTCTGCTGA
 TGCTCTCAACAGTTACAGAGTCAATTCGGTGACGTTCTCATCAAGTTGCGTCAGACTGCGCATAGACACAAGTATTATCCCATATCGGTGCTAGCTTGAGCCAGCTCACTGTTTCCAAACCCCGTGTGAGTTTGGCGGTATTTTAGAAAT
 CTATGCTTCTCCTGTTCCCTCTCGCTACTCGGATTTCAGGTATTAGGTAATGGGACTACGGAGACTTATATAGGAGGGCTAGGTTAAGGTGGTTGGAGGCCCTTGATCTGGGGGAT**TAA**TGAATTCAGATTGTACGTAGTGTGGAAGACACCAA
 CTGCAAGGCTACAGGACCTCGCAGGGATTCT

>CanPLV_NewPartiti_309
 ccggtTTTACCAACGCGGGAAGCTTACACTTTTACACTTTCGCTTTAATGTTTTATACGTAAGCAAGCGCG**ATG**CGGTATCGCACTACTTCAAGTCACGGGACTTCAACTTCATATTTCTTCATTTCGACGGCCAAAAGCGATATCGCGATT
 ACCCGGTAGTCCCGGGTTTCGACTTGTCTCTCAACCTCGAGAAGATCCACTAGCGCGACGTGCAAGTTGAGCATGTCTTTGGGAAAGCCTATGTTGACTCGTGCTTCGCTCGTCTCCATCGAAGTACTATGTCCTATGAGGCGCTGGT
 GTCTGACTTATTCGAGTTTGTATCGGTTGCT**CTC**CTGTCGCCAGTCGATGATCCAGTCTATGCGATGGTTCTCGAGTCTGTGAGGCGAGGACTTACACGCACCGAGATTACTCGTACCACTACTATTCGGAGCGGTGACCAAACTTCCCGA
 CTTTCCCGCGAGAGTCTCCGGGTTTGGCGTATAAAGAACATGGGTTATAAGACAAAGGAGGTTGTGATGACCTGAGGAGATTAAACAGGCGCTGGCACTACATTGGCTTCGGGCGGTGATCGAGGCGGCTTACCGGA
 TACTCGCTATTTCGAAGATCTCAGGTATGTGACGTGTCCCAAGCAAAGGTTTCGGGCGGTTTGGGGTTATCCCTTTTCGTCTATCTTGAAGAAGCCGATTCTTCTATCCGATACTGGAGCACTTAAGAGGTAAAGGTCATAACTTCCC
 AATTGGCTATGTTGTGAATAACAGTAAGGGTGGTCTTGTGCGCATATCCAGATGGCGCTCTCGTGTGGGCGGTGGCAAGTATATGATGACTGATTGGAGTAAATTTGACAAATCCATACCTCTTGGTGTATTCGGGATGCTCTTTCTCT
 TTTGGCTGAATAATTGACTCTCCACACGCTGTTGATTTCGAGAGGTTTGCAGTGCACTGTCCAGACAGCAGCTTGAAGAGAGATTGTGCACTATTTTGTGAGACTCCAGTCCGACTCTTAAGGCGGAGCGGTTCTCT
 TGTTAGATCTGGCTGTACCTCGGAGCTGCTTCAGACAGTATTGATAACATCAATTAAGTATGATGACTGATTGATCCCGGTACATCTCTATAAATCTGTGGGTTCTTTCTCTCTGTGTAAGTGTACCTTGGGAGCATGGGCTGTGTGTTT
 CTCTCTCTCGGAGCTGGTTGATCTGAGTAGATGCGCCGCTTGTGCTCACGAGCGCTTTGGCTCTGTTCTTACTGCTTGACAAATCATATGTTTACTACCAAGCTGAGAATCCACTTCTTGGATGACTCATATAGGCCCATCGGCATGCC
 TAACAGAGATCAGGCTCTCTAATTGTATCGTTGTTTCATCCTCGAGAAAGTCGCGAGACTGCTGTGAGTGCGCTGTCTGCTGCGCTTGGCCAGTTTGGGCGAAATTTGATCCTCTAATTGCTGAGTCATGGTTTAGGGTCTCTGCTGA
 TGCTCTCAACAGTTATAGAGTCAATTCGGTGACGTTCTCATCAAGTTGCGTCAGACTGCGCATAGACACAAGTATTATCCCATATCGGTGCTAGCTTGAGCCAGCTCACTGTTTCCAAACCCCGTGTGAGTTTGGCGGTATTTTAGAAT
 CTATGCTTCTCCTGTTCCCTCTCGCTACTCGGATTTCAGGTATTAGGTAATGGGACTACGGAGACTTATATAGGAGGGCTAGGTTAAGGTGGTTGGAGGCCCTTGATCTGGGGGAT**TAA**TGAATTCAGATTGTACGTAGTGTGGAAGACACCAA
 CTGCAAGGCTACAGGaccctcgagggattct

>MW063112.1 Maize associated partiti-like virus isolate MAPLV.19P-149 RNA-dependent RNA polymerase (RdRp) gene, partial cds

>MF372918.1 Maize associated partiti-like virus isolate SS9A RdRp gene, partial cds

>MW063111.1 Maize associated partiti-like virus isolate MAPLV.19P-96-98 RNA-dependent RNA polymerase (RdRp) gene, partial cds

CLUSTAL multiple sequence alignment by MUSCLE (3.8)

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CanPLV_309      -CCGTTTACCAACGCGGGAAGCTTACACTTTTATACCT-----TGCCTTTAATG---TT
CanPLV_315      -CCGTTTACCAACGCGGGAAGCTTACACTTTTATACCT-----TGCCTTTAATG---TT
MW063111.1      CCGCTTTTA-CAACGTGGAA-----TTCATTGTGCCAGCTGGACCTACGCTTTAAGAATCG
MW063112.1      CCGCTTTTA-CAACGTGGAA-----TTCATTGTGCCAGCTGGACCTACGCTTTAAGAATCG
MF372918.1      CCGCTTTTA-CAACGTGGAA-----TTCATTGTGCCAGCTGGACCTACGCTTTAAGAATCG
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NewPartiti_309  TTATACGTAAG---CAAGCGGATGTGGGTATCGCACTACTTCAAGTCACGGGACTTCAAC
NewPartiti_315  TTATACGTAAG---CAAGCGGATGTGGGTATCGCACTACTTCAAGTCACGGGACTTCAAC
MW063111.1      TTGTGCTGGGTTTATAGACCGATGGTCGACCACATTGCG---GGTGATGGGCGCTCAAC
MW063112.1      TTGTGCTGGGTTATAGACCGATGGTCGACCACATTAGC---GGTGATGGGCGCTCAAC
MF372918.1      TTGTGCTGGGTTATAGACCGATGGTCGACCACATTAGC---GGTGATGGGCGCTCAAC
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NewPartiti_309  TITCATATCTTCATTTCGACGGCCAAAAGCGATATCGGAGTATACCCGCTAGTCCCGGGTT
NewPartiti_315  TITCATATCTTCATTTCGACGGCCATAAGCGATATCGGAGTATACCCGCTAGTCCCGGGTT
MW063111.1      CTC-----CTCC-----CGCTCTCAGGTTATAATTCGGCTCCCTAGGAAGGAAGGGTT
MW063112.1      CTC-----CTCC-----CGCTCTCAGGTTATAATTCGGCTCCCTAGGAAGGAAGGGTT
MF372918.1      CTC-----CTCC-----CGCTCTCAGGTTATAATTCGGCTCCCTAGGAAGGAAGGGTT
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NewPartiti_309  CGCATTTGATCTGTCTCAACCTCGAGAAGATCCACTAGCGCGACGTGCAAGTTGAGCATGT
NewPartiti_315  CGCATTTGATCTGTCTCAACCTCGAGAAGATCCACTAGCGCGACGTGCTGTTGAGCATGT
MW063111.1      TGCCCTTGATCTTGCCCCAAGTCGGGAAGATCCACTAGCGCGCGCTGCTGCAGAGCACGT
MW063112.1      TGCTTTTGATCTTGCCCCAGTCGGGAAGATCCACTAGCGCGCGCTGCTGCAGAGCACGT
MF372918.1      TGCCCTTGATCTTGCCCCAGTCGGGAAGATCCACTAGCGCGCGCTGCTGCAGAGCACGT
          ** ***** * * * * * * * * * * * * * * * *

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NewPartiti_309  CTTTGGGAAAGCCTATGTTGACTCGTGCTTCGCTCGTCTCCATCGAAGTACTATGTCCTA
NewPartiti_315  CTTTGGGAAAGCCTATGTTGACTCGTGCTTCGCTCGTCTCCATCGAAGTACTATGTCCTA
MW063111.1      GTTTGGGAAAGTCGATGTTGACGGGTGCTTTACAGAGGCTACACAGGAGCACCTGTCTCTA
MW063112.1      GTTTGGGAAAGTCGATGTTGACGGGTGCTTTACAGAGGCTACACAGGAGCACCTGTCTCTA
MF372918.1      GTTTGGGAAAGTCGATGTTGACGGGTGCTTTACAGAGGCTACATAGGAGCACCTGTCTCTA
          ***** * * * * * * * * * * * * * * * *

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NewPartiti_309  TGAGGCGCTGGTGTCTGACTTATTCGAGTTTGATCGGTTGCTTCTTGTGCGCCAGTCGA
NewPartiti_315  TGAGGCGCTGGTGTCTGACTTATTCGAGTTTGATCGGTTGCTTCCCATCGCCAGTCGA
MW063111.1      CGATGCGCTGGTGTCTGATATCATGGGCTACGAGCGGCTTCATCCGCGCCGCGGCACAG
MW063112.1      CGATGCGCTGGTGTCTGACATCATGGGCTACGAGCGGCTTCATCCGCGCCGCGGCACAG
MF372918.1      CGATGCGCTGGTGTCTGACATCATGGGCTACGAGCGGCTTCATCCGCGCCGCGGCACAG
          ** ***** * * * * * * * * * * * * * * * *

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NewPartiti_309  TGATCCAGCTCTATGCGATGGTTCTCGAGTCTGTGAGGCAGGACTTACACGCACCGAGATT
NewPartiti_315  TGATCCAGCTCTATGCGATGGTTCTCGAGTCTGTGAGGCAGGACTTACACGCACCGAGATT
MW063111.1      TGATCCCGGTGATCGCTATGGCTCTTGAGTCTGTGCGCGGGATTTCCTGCTCAACGGCGAA
MW063112.1      TGATCCCGGTGATCGCTATGGCTCTTGAGTCTGTGCGCGGGATTTCCTGCTCAACGGCGAA
MF372918.1      TGATCCCGGTGATCGCTATGGCTCTTGAGTCTGTGCGCGGGATTTCCTGCTCAACGGCGAA
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NewPartiti_309  ACTCGTACCACATACTATCGGAGCGGTGACCAAACTTCCCGACTTTCCCGCGGAGAAGTC
NewPartiti_315  ACTCGTACCACATACTATCGGAGCGGTGACCAAACTTCCCGACTTTCCCGCGGAGAAGTC
MW063111.1      GCTCATCCACACACATGCGGGCGGTGCGCGCATCTCGGTGACTTCCCTCGGAGAAAG
MW063112.1      GCTCATCCACACACATGCGGGCGGTGCGCGCATCTCGGTGACTTCCCTCGGAGAAAG
MF372918.1      GCTCATCCACACACATGCGGGCGGTGCGCGCATCTCGGTGACTTCCCTCGGAGAAAG
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NewPartiti_309  TCCGGGTTTGGCGTATAAGAATG---GGTTATAAGACCAAAGGTGAGGTTGTCATGA
NewPartiti_315  TCCAGGTTTGGCGTATAAGAATG---GGTTATAAGACCAAAGGTGAGGTTGTCATGA
MW063111.1      CGCCGGCTACCTTACAAGAATGGCCCGGTTACCGATCCAAGGTTGATGCTGATAGTA
MW063112.1      CGCCGGCTACCTTACAAGAATGGCCCGGTTACCGATCCAAGGTTGATGCTGATAGTA
MF372918.1      CGCCGGCTACCTTACAAGAATGGCCCGGTTACCGATCCAAGGTTGATGCTGATAGTA
          * * * * * * * * * * * * * * * *

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NewPartiti_309  CACCTACCAGTTAGAGGAGATTAAACAGGCGCTGGCACTACATTGGCTTCGGGCGTGATCG
NewPartiti_315  CACCTACCAGTTAGAGGAGATTAAACAGGCGCTGGCACTACATTGGCTTCGGGAGTGATCG
MW063111.1      TCCTGATGAATATGGAAGATCAATACTCTATGGCAACCATAAAGCGCCGGAAGGCCA
MW063112.1      TCCTGATGAATTATGGAAGATCAATACTCTATGGCAACCATAAAGCGCCGGAAGGCCA
MF372918.1      TCCTGATGAATTATGGAAGATCAATACTCTATGGCAACCATAAAGCGCCGGAAGGCCA
          * * * * * * * * * * * * * * * *

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NewPartiti_309  AGGCGCGTTACCGGATACCTGCTATTTGCAAGATCTCAGTATGTGACGTGTCCAAGCA
NewPartiti_315  AGGACCGTTACCGGATACCTGCTATTTGCAAGATCTCAGTATGTGACGTGTCCAAGCA
MW063111.1      CAAGCCCTTGAAGATGTATGCTTATTGACGCTCACAGGTTTGTCTGTTGAGAAGCA
MW063112.1      TAAGCCCTTGAAGATGTATGTTTATTGACGCTCGCAGGTTTGTCTGTTGAGAAGCA
MF372918.1      CAAGCCCTTGAAGATGTATGTTTATTGACGCTCGCAGGTTTGTCTGTTGAGAAGCA
          * * * * * * * * * * * * * * * *

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NewPartiti_309  AAAGGTTTCGGGCGGTTTGGGGTTATCCCTTTTCGCTATCTTGAAGAAGCCGAGTTCTT
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NewPartiti_315	AAAGGTTGCGGGCGTTTGGGCTATCCCTTTTCGTCTATCTTGAAGAAGCCGATTCTT
MW063111.1	AAAGATTCTGGCGTGTGGGGGTACCTATTGAGGTGACCTAGAAGAAGCCGATTCTT
MW063112.1	AAAGATTCTGGCGTGTGGGGGTACCTATTGAGGTGACCTAGAAGAAGCCGATTCTT
MF372918.1	AAAGATTCTGGCGTGTGGGGGTACCTATTGAGGTGACCTAGAAGAAGCCGATTCTT
	**** * * * * *
NewPartiti_309	CTATCCGATACTGGAGCACCTAAAGAGTAAGGTCATAACTTCCCAATTGGCTATGGTTG
NewPartiti_315	CTATCCGATACTGGAGCACCTAAAGAGTAAGGTCATAACTTCCCAATTGGCTATGGTTG
MW063111.1	CTACCCCTCGATGGACTGGTGAAGTCGCGGGAATGTAATTTCCCTATCTTATGGCCT
MW063112.1	CTACCCCTCGATGGACTGGTGAAGTCGCGGGAATGTAATTTCCCTATCTTATGGCCT
MF372918.1	CTACCCCTCGATGGACTGGTGAAGTCGCGGGAATGTAATTTCCCTATCTTATGGCCT
	*** * * * * * * * * * *
NewPartiti_309	TGAAATCAGTAAGGGTGGCTTGTGCGCATATCCGAGATGGCGCTTCGTGTGCGCGGTGG
NewPartiti_315	TGAAATCAGTAAGGGTGGCTTGTGCGCATATCCGAGATGGCGCTTCGTGTGCGCGGTGG
MW063111.1	TGAGATGGCAAAATGGAGGATGGTTGCGATAGCCGACTTGCACAGCGCTCGGCACCGA
MW063112.1	TGAGATGGCAAAATGGAGGATGGTTGCGATAGCCGACTTGCACAGCGCTCGGCACCGA
MF372918.1	TGAGATGGCAAAATGGAGGATGGTTGCGATAGCCGACTTGCACAGCGCTCGGCACCGA
	*** * * * * * * * * * * * * * * *
NewPartiti_309	---CAAGTATATGATGACTGATTGGAGTAAATTTGACAAATCCATACCTCCTTGGCTGAT
NewPartiti_315	---CAAGTATATGATGACTGATTGGAGTAAATTTGACAAATCCATACCTCCTTGGCTGAT
MW063111.1	CTCCAAGTACTTAATGATAGACTGGTCCAAGTTTGATAAGTCTATTCCGCCATGGCTAAT
MW063112.1	CTCCAAGTACTTAATGATAGACTGGTCCAAGTTTGATAAGTCTATTCCGCCATGGCTAAT
MF372918.1	CTCCAAGTACTTAATGATAGACTGGTCCAAGTTTGATAAGTCTATTCCGCCATGGCTAAT
	***** * * * * * * * * * * * * * * *
NewPartiti_309	TCGGGATGCCTTTTCTCTTTTGGCTGAATTAATTGACTTCGACCACGTGTGTGATTCCGA
NewPartiti_315	TCGGGATGCCTTTTCTCTTTTGGCTGAATTAATTGACTTCGACCACGTGTGTGATTCCGA
MW063111.1	CCGGACGCTTTTGTATATAATAGCAGATGTCATAGATTTCGACCATGTCAGAGATTCTGA
MW063112.1	CCGGACGCTTTTGTATATAATAGCAGATGTCATAGATTTCGACCATGTCAGAGATTCTGA
MF372918.1	CCGGACGCTTTTGTATATAATAGCAGATGTCATAGATTTCGACCATGTCAGAGATTCTGA
	* *
NewPartiti_309	GGGTTTGCAGTGGCATGTCGAGGATATCGTAGCAAGGCAGTTGGAAGAAGATTGTCGA
NewPartiti_315	GGGTTTGCAGTGGCATGTCGAGGATATCGTAGCAAGGCAGTTGGAAGAAGATTGTCGA
MW063111.1	AGGCAAGGTTTGGCCTGTCCGAGCCTATCGGAGTCGACGGCGTTGGAAGAAGTTAATTGA
MW063112.1	AGGCAAGGTTTGGCCTGTCCGAGCCTATCGGAGTCGACGAGCTTGAAGAAGTTAATTGA
MF372918.1	AGGCAAGGTTTGGCCTGTCCGAGCCTATCGGAGTCGACGAGCTTGAAGAAGTTAATTGA
	* *
NewPartiti_309	CTATTTTGTGAGACTCCAGTCCGTACCTGTAAGGGCGAGCGTTTCCCTTGTAGATCTGG
NewPartiti_315	CTATTTTGTGAGACTCCAGTCCGTACCTGTAAGGGCGAGCGTTTCCCTTGTAGATCTGG
MW063111.1	CTATTTTATTTAGACACCACTCCGTACCTGCAAAAGGTGAGCGCTTCTTGGTTCGAGGAGG
MW063112.1	CTATTTTATTTAGACACCACTCCGTACCTGCAAAAGGTGAGCGCTTCTTGGTTCGAGGAGG
MF372918.1	CTATTTTATTTAGACACCACTCCGTACCTGCAAAAGGTGAGCGCTTCTTGGTTCGAGGAGG
	***** *
NewPartiti_309	TGTACCGTCGGGATCGTGCTTACGAACGTTATTGATACCATCATTAACGTATTGTTAC
NewPartiti_315	TGTACCGTCGGGATCGTGCTTACGAACGTTATTGATACCATCATTAACGTATTGTTAC
MW063111.1	TGTACCGTCGGGTCCTGCTTACGAACGTAATTGACTCAATCATTAATTGTGTTGTGAG
MW063112.1	TGTACCGTCGGGTCCTGCTTACGAACGTAATTGACTCAATCATTAATTGTGTTGTGAG
MF372918.1	TGTACCGTCGGGTCCTGCTTACGAACGTAATTGACTCAATCATTAATTGTGTTGTGAG
	* *
NewPartiti_309	CCGGTACATCTCTTATAATACTGTGGGTTCTTTCCCTCTTGGTGAAATGTACCTTGGGGA
NewPartiti_315	CCGGTACATCTCTTATAATACTGTGGGTTCTTTCCCTCTTGGTGAAATGTACCTTGGGGA
MW063111.1	CCGGTACATTTCCCTATCAGACGACCGGAGCCTTCCCTCTGGGAACTCTACCTTGGGGA
MW063112.1	CCGGTACATTTCCCTATCAGACGACCGGAGCCTTCCCTCTGGGAACTCTACCTTGGGGA
MF372918.1	CCGGTACATTTCCCTATCAGACGACCGGAGCCTTCCCTCTGGGAACTCTACCTTGGGGA
	***** *
NewPartiti_309	CGATGGTGTGTGTGTTTCTCTCTGTCGAGCTCGTTGATCTGAGTAGTATGGCCGCTCT
NewPartiti_315	CGATGGTGTGTGTGTTTCTCTCTGTCGAGCTCGTTGATCTGCGTAGTATGGCCGCTCT
MW063111.1	TGATGGTGTGTGTTTCTTCCCGCATCCTCCTATCTCGATTGGGCAATTTAGCGAAAGT
MW063112.1	TGATGGTGTGTGTTTCTTCCCGCATCCTCCTATCTCGATTGGGCAATTTAGCGAAAGT
MF372918.1	TGATGGTGTGTGTTTCTTCCCGCATCCTCCTATCTCGATTGGGCAATTTAGCGAAAGT
	***** *
NewPartiti_309	TGCTCAGGAGCGCTTTGGCCTTGTCTTAGTCTGACAAATCATATGTTACTACCCAAGC
NewPartiti_315	TGCTCAGGAGCGCTTTGGCCTTGTCTTAGTCTGACAAATCATATGTTACTACCCAAGC
MW063111.1	TGCCTTTGACTGCTTCGGATTAGTCTTAAACAGAGACAAATCATATGTGACATCTGTGT
MW063112.1	TGCCTTTGACTGCTTCGGATTAGTCTTAAACAGAGACAAATCATACGTGACATCTGTGT
MF372918.1	TGCCTTTGACTGCTTCGGGTTAGTCTTAAACAGAGACAAATCATACGTGACATCTGTGT
	* *
NewPartiti_309	TGAGAACATCCACTTCCCTGGATACTACAATAGGCCCATCGGCATGCCATACAGAGATCA
NewPartiti_315	TGAGAACATCCACTTCCCTGGTACTACAATAGGCCCATCGGCATGCCATACAGAGATCA
MW063111.1	TGAGAACATCCACTTCAATGGCTATCATAACGCACCAATTTGTGCGCCCAATCGGGATCA
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	***** *
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MW063112.1	TGCGCGTGC CGCTAGGCAACTCTGGGCTAAGTTGACCCCAAGAAATAGCTGGGCTTTG
MF372918.1	TGCGCGTGC CGCTAGGCAACTCTGGGCTAAGTTGACCCCAAGAAATAGCTGGGCTTTG
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MW063111.1	GTACCGCGCTGTGATCTTTGTGTCGATGCAATCTGTGTTACACATGATGATATCGTGGT
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MF372918.1	GTACCGCGCTGTGATCTTTGTGTCGATGCAATCTGTGTTACACATGATGATATCGTGGT
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MW063111.1	TCAGCTCAGACGGACGCCACCGCTATAAATATCTTTTCGCATCTTGGGCGCCATTT--T
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MF372918.1	CCATCCTCTGACGATACCTCTCTTAATGAGTGGGTCATCTGTTAGAGGTACTTCTGCG
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NewPartiti_315	CCTGTTCC-----CTCTCGTACTGCGATTTGAGGTACTGGGACTACGGAGACTTATA
MW063111.1	CCGTTTCCGAAGCGGCTTTTGCCAATTCGAC---GGTAT---GAGTATGGCCTCCTCTG
MW063112.1	CCGTTTCCGAAGCGGCTTTTGCCAATTCGAC---GGTAT---GAGTATGGCCTCCTCTG
MF372918.1	CCGTTTCCGAAGCGGCTTTTGCCAATTCGAC---GGTAT---GAGTATGGCCTCCTCTG

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MW063112.1 GGAAAGACACCAACAG-----CT
MF372918.1 GGAAAGACACCAACAG-----CT
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>MW826382.1 Partitiviridae sp. isolate XZN141309 segment RNA1 genomic sequence

CLUSTAL multiple sequence alignment by MUSCLE (3.8)

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* * * * *
MW826382.1 -----
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(C) Grapevine line pattern virus (GLPV)

Host: *Cannabis sativa*

>GLPV_RNA1_alyu302
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GATAAAGGCTGGTGCATGAGTAAAGGATCATCACTCACTTAAATGGGTATCGGTTTCTTGGTCTCCGATGACTCACTAAGTTCGAGTGGAGGCTCTGTACCTTTATCATTAAGAGGATCTGGATGGCTCCCTCACCGATCCCTCACTGATAC
AGTTTGTAAAGGCTTTAAGCTCATTCGAGAGTCTGCTCTTTTAAACGACAGATTACGATCTTGTTCGAGAGATGATCAAACTGGGAGACAGAGGCGAGATGCGAAGGATGTTCTTATTGTTCAGGCAAGGATGATGGCTTATGTT
GGAGCAGGAGATGCGTTATCGCTTTTCCCATTTTGGGATTCGGAATTTTGTCTCTTCTTGCACAACTATGAGGTTGTTTCGGTGTGCTTCTGTGCTTATACCAGATGATCATCGGTTTCGATGTTTCTGAGTTGCGGTTTCAATCGG
TAGTAAAGAGAACTCTTCTATTCTTCCAGAGGATTCGGCTCTTGGGCGCAAGGTTTGGCGCGCTGAGGCTGATGATCAAAACAAAGAGCTGTGAGTCTGATTCTCGCACTGCTGTGGTGTGCTGAGTCTTGTGCTTGTGCTTCCCTCGG
CAGGGAATTAGCGACGAGCCCGCTTTTGTAAATGGTGTGAGGATGTGCTCAAGGAAGTAATTCGGAAGATACCTTAATCTCTTCTGTGCTCATGCTATTAGTTTATGTTGATGTAGTGTGGTGGAGGAAGTATGATAGATACAGTTTGA
GTCTGCGACAGATCAAGGGTTGGTCTTCAAGAGGTTATCTCCTTAAAGAAGATTGTTGAAATGAGTATGAGTTTGGTTCGAGTGAAGATGATGCTCATCTATCCGAGTTCTGGTTCACTCTGATTTACTGATTTCACTCCCTGTC

ATTTAGATAGTTTGGCATTGTATATCTTTATCTTAGCATGAGTCAAAATCCTAATCGACGAAGAAATAGGCGCAACGCAATAGATCGCGCGCAACGCAAGCTCAAGACGCTGCTGCGTTTCGTGCGCTTCTGCTCTCTTAGATT
GGGTCCGGTCACATCCGGTATGGTGTATCCGGTGTATCCGGTTACTCCAGGTTTGTGGTCACTTCGGTGACATTGAACGAGCCTTTTCAGTGGGCTGGTGCATGCACAGGTGCTTCCGAGAGCGTAGCTTGGTGAT
TCTCTCGCTCTTCTCCCGAGACTCGCTGAATTAATGTGATCTTAAGAGTGACACCCACCCCTGGGTTAAGTTCTTTTGATATTTGGCGCGGATTTGCTGCGGCTAAGGCTCTCTCCGACTGCGCGGATTTTGATGCTTTAATGT
GCGGTTTTTGACCAATGAACGGTACGTCGTGATTTCGGCATGTGGTTATACCAATTGCTAATCGTACGGTGGCTGACCTCTCGCAGCAACGTGCTGGCTTGGTGCCAGAAGTGGGACAGTGACTGCTGATAACTTAGTTTGGCTTGGT
GAGGGTGTATTGAACACCGCCCAATACCCCAAGTACAAGTTGCTCCCGGATAGAGGTACATGGTTTTAACAGTTTCTCTTAACTGTAAGCGTCTGTTGCGACGTGATACCTGATACGGATGAGTGTGGGAATCTCATTCAGTGAAGCAC
TACTCCCTCCGTCGCGAAGCGGAGTATGTGGTGTGGTTCAGGTGTGGTGTCAAGTTTTAACAGTTTCTTAACTGTAGTCTGTTGCTGAACGCAAGTGTATGCTGAGTACTATAACTCGAAGTCTGGTGTGACACGCCAGTTACTTATA
CAAGAGGTATAAGTATTGAGTATAGGAATCCATCTCCTCGTTGGATGCATCTGTGCGAATCTCATGAGATTTCATAGGACAGCTATACGCTGATGCAGCAATGCTGCATCGGTCTCTAGGGGAGACCA

Alignment of 5' and 3'-termini of genomic RNAs

5'-terminus

```
GLPV_RNA3_alyu302      GT---AGTCTTTTCTTTTGGCTTTAAGTTTGCATAGCATAAGTTG-----AGTCAATATTT
GLPV_RNA1_alyu302      GTTTGATGCAACTCTTTTGGTTCCAATCCAATTGATTGATTGCTCTTACGTACCATTT
GLPV_RNA2_alyu302      GTTTGATGCAACTCTTTTGGTTCCAATCCAATTGATTGATTGCTCTTACACACCGTTT
                        **  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *
GLPV_RNA3_alyu302      GCCTGCAATAA-----CTGGTTTTCAAGTCTTCG-----
GLPV_RNA1_alyu302      CTCAGCGACGAGATGGCTTTTAGTTTTAATGTTGCGTACCTTGTGACGCCGAGGGAGT
GLPV_RNA2_alyu302      CTCACGCCGAAATGGAT--TTGTTTTCAATGTTT-----
                        *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *
```

3'-terminus with a conserved tRNA-like structure ending with the universal CCA required for aminoacylation

```
GLPV_RNA3_alyu302      TTCAGG-----TGTGGGTGTCAAGTTTTAACAGTTTCTTAACTGTAGTCTG
GLPV_RNA1_alyu302      -CCTTCAAATTAATTT--TGAAGGTATATAAGTTGATGAGTACTATACTCATAGTCTG
GLPV_RNA2_alyu302      TTCTTGAGAAATATCTCATGAATCAGGTGTTAGTTGATGAGTACTATACTCATAGTCTG
                        *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *
GLPV_RNA3_alyu302      TTGCTGAAACGCAGTTGATCGAGTACTATAACTCGAAGTCGTGGTTGACACGCCAGTTAC
GLPV_RNA1_alyu302      TTGTTGTAACGCAGTTGATTGGGTACTATAACCCAAAGTCGTGGTTGACACGCCCTTTTGC
GLPV_RNA2_alyu302      TTGCTGAAACGCAGTTGATTGGGTACTATAACCCAAAGTCGTGGTTGACACGCCCTTTTGC
                        *** ** ***** * ***** * ***** * ***** * ***** *
GLPV_RNA3_alyu302      TTATACAAGAGGTATAAGTATTGAGTATAGGAATCCATTCCTCGTTGGATGCATCTG
GLPV_RNA1_alyu302      TTATATAAGAGATATAAGTAATTGAGTATAGGAATCCGTTCTTCCGCTCGGATGCATCTG
GLPV_RNA2_alyu302      TTATATAAGAGATTTAAGTAATTGAGTATAGGAATCCGTTCTTCCGCTCGGATGCATCTG
                        ***** * ***** * ***** * ***** * ***** *
GLPV_RNA3_alyu302      TCCGAATCTCATGAGATTCATTAGGGACAGCTATACGCTGATGCAGCAATGCTGCATCGG
GLPV_RNA1_alyu302      TTCAGGTCTCATGAGGCTCATTAGGAACAGCTATACGCTGATGCAGCAATGCTGCATCGG
GLPV_RNA2_alyu302      TTCAGGTCTCATGAGGCTCATTAGGAACAGCTATACGCTGATGCAGCAATGCTGCATCGG
                        * ** ***** * ***** * ***** * ***** *
GLPV_RNA3_alyu302      TCTCTAGGGGAGAGCCA
GLPV_RNA1_alyu302      TCTCTAGGGGAGAGCCA
GLPV_RNA2_alyu302      TCTCTAGGGGAGAGCCA
                        *****
```

Host: **grapevine**

>MT319109.1 Grapevine line pattern virus isolate Baco22A segment RNA1, complete sequence

>MT319110.1 Grapevine line pattern virus isolate Baco22A segment RNA2, complete sequence

>MT319111.1 Grapevine line pattern virus isolate Baco22A segment RNA3, complete sequence

Alignment of 5' and 3'-termini of genomic RNAs

5'-terminus

```
MT319111.1 RNA3 GT---AGTCTTTTCTTTTGGCTTTAAGT-----TTGCATAGCAT--
MT319109.1 RNA1 GTTTGATGCAACTCTTTTGGTTCCAATCCAATTGATTGATTGCTCTTACACACCATTT
MT319110.1 RNA2 GTTTGATGCAACTCTTTTGGTTCCAATCCAATTGATTGATTGCTCTTACACACCGTTT
                        **  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *
MT319111.1 RNA3 ---AAGTTGAGTCAATATTTGCCTACAATAAC-----TGGTTTTCAAGTCTTCGA---
MT319109.1 RNA1 CTCAGCGACGAGATGGCTTTTAGTTTTAATGTTCTG---TGACCTTGTGACGCCGAGGG
MT319110.1 RNA2 CTCACGCCGAAATGG-ATTGTTTTCAATGTTAATTCTGGTCTCTTACCCTGTA---
                        *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *
```

3'-terminus with a conserved tRNA-like structure NOT ending with the universal CCA required for aminoacylation

```
MT319111.1      TCGGGGTGTTCAAGTTTAAACAGTTTCTTTAAACTGTAGTCGTTGCTGAAACGCAGTTGA
MT319109.1      -----CTATAACTCATAGTCGTTGTTGTAACGCAGTTGA
MT319110.1      -----CTAAACTGTAGTCGTTGCTGAAACGCAGTCGA
                        *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *
MT319111.1      TCGGGTACTATAACTCGAAGTCGTGGTTGACACGCCAGTTACTTATACAAGAGATATAAG
MT319109.1      TTGGGTACTATAACCCAAAGTCGTGGTTGACACGCCCTTTTGCTTATATAAGAGATGTAAG
MT319110.1      TTGGGTACTATAACCCAAAGTCGTGGTTGACACGCCCTTTTGCTTATATAAGAGATGTAAG
                        * ***** * ***** * ***** * ***** * ***** *
MT319111.1      TGATTGAGTATAGGAATCCATT-CTCCTCGTTGGATGCATCTGTGCGAATCTCATGAGAT
MT319109.1      TAATTGAGTATAGGAATCCGTTCTTCCGCTCGGATGCATCTGTTCGAGTCTCATGAGGC
MT319110.1      TAATTGAGTATAGGAATCCGTTGCTTCCGCTCGGATGCGCTGTGCGATCTCATGAGAC
                        * ***** * ***** * ***** * ***** * ***** *
MT319111.1      TCATTAGGGACAGCTATACGCTGATGCAGCAATGCTGCATCGGTCTCTAGGGGAGACC
MT319109.1      TCATTAGGAACAGCTATACGCTCAATGCAGCAATGCTGCATTGGTCTCTAGGGGAGACC
MT319110.1      TCATTAGGAACAGCTATACGCTCAATGCAGCAATGCTGCATTGGTCTCTAGGGGAGACC
                        *****
```

Host: **Rehmannia glutinosa**

>M2395976.1 Grapevine line pattern virus isolate Rg24 segment RNA1, complete sequence

>M2395977.1 Grapevine line pattern virus isolate Rg24 segment RNA2, complete sequence

>M2395978.1 Grapevine line pattern virus isolate Rg24 segment RNA3, complete sequence

Alignment of 5' and 3'-termini of genomic RNAs

5'-terminus

```
M2395978.1 RNA3 -----GTAGTCTTTTCTTTTGGCTTTAAGTTTGCATAGCAT-----AAGTTG
M2395976.1 RNA1 TTTTGGTTCAATTCCAATTGATTGATTGCT-----CTTACGTACCATTTCTCAGCGACG
M2395977.1 RNA2 -----CCAATTGATTGATTGCT-----CTTACACACCGTTTCTCAACGCGG
                        *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *
M2395978.1      AGTCAATATTTGCTGCAATAACTGTTTTCAGTCTCCTGAATCTTAGTTGATTGCTTGT
M2395976.1      AGATGGCTTTTAGTTTTAATGTTCTG---TGACCTTGTGACGCCGAGGGAGTCAAGGCT
M2395977.1      AAATGG-ATTTGTTTCAATGTTTAAATCTTGGCTCTTACCGCTGATT-----
                        *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *
```

3'-terminus with a conserved tRNA-like structure NOT ending with the universal CCA required for aminoacylation

```
M2395978.1      GTGTGGTTC---AGGTGTGAGTGTTCAGT-----TTTAAACAGTTTCTTTAAACTG
M2395976.1      -----TCTTCAAATTTAATTT--TGAAGATGATATTAGTTGAATGAGTACTATAACTCA
M2395977.1      TCATGATTCTTGAGAAGCATCTCATGAATCAGGTGTTAGTTGAATGAGTACTATAACTCA
                        *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *
M2395978.1      TAGTCGTTGCTGAAACGCAGTGTATCGAGTACTATAACTCGAAGTCGTGGTTGACACGCC
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>MT878082.1 Cannabis sativa mitovirus 1 isolate ConeRdRp RNA-dependent RNA polymerase gene, complete cds
>MT878081.1 Cannabis sativa mitovirus 1 isolate DeltaRdRp RNA-dependent RNA polymerase gene, complete cds
>MT878080.1 Cannabis sativa mitovirus 1 isolate RBRdRp RNA-dependent RNA polymerase gene, complete cds
>BK010437.1 TPA_inf: Cannabis sativa mitovirus 1 strain CasaMV1-MPC/MSU RNA-dependent RNA polymerase (RdRp) gene, complete cds
>BK010438.1 TPA_inf: Cannabis sativa mitovirus 1 strain CasaMV1-Finola RNA-dependent RNA polymerase (RdRp) gene, complete cds
>BK010436.1 TPA_inf: Cannabis sativa mitovirus 1 strain CasaMV1-UC-COE RNA-dependent RNA polymerase (RdRp) gene, complete cds
>BK010428.1 TPA_inf: Cannabis sativa mitovirus 1 strain CasaMV1-PurpleKush RNA-dependent RNA polymerase (RdRp) gene, complete cds

CLUSTAL multiple sequence alignment by MUSCLE (3.8)

```
MT878083.1 -----GAGCATTATGTTCCCGACGGGGTGTGGTTTCCCAACCCCGACAC
MT878082.1 -----GAGCATTATGTTCCCGACGGGGTGTGGTTTCCCAACCCCGACAC
MT878081.1 -----CATTATGTTCCCGACGGGGTGTGGTTTCCCAACCCCGACAC
MT878080.1 -----GAGCATTATGTTCCCGACGGGGTGTGGTTTCCCAACCCCGACAC
MT878084.1 -----GAGCTTTATGTTCCCGACGGGGTGTGGTTTCCCAACCCCGACAC
BK010428.1 GGGGGTACCATTCCGGAGCTTTTCATGTTCCCGACGGGGTGTGGTTTCCCAACCCCGACAC
BK010437.1 -----CGGGAGCTTTTCATGTTCCCGACGGGGTGTGGTTTCCCAACCCCGACAC
CasaMV1_newconsensus_sample311_3 --GGTACCATCGGAGCTTTTCATGTTCCCGACGGGGTGTGGTTTCCCAACCCCGACAC
BK010438.1 -----CTTTATGTTCCCGACGGGGTGTGGTTTCCCAACCCCGACAC
BK010436.1 -----TCGGAGCTTTATGTTCCCGACGGGGTGTGGTTTCCCAACCCCGACAC
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MT878083.1 AATATGAGTACATAGTGAAGATAAACCAACAAAATTA-AACTTATCTTCTAGGAAAGTGT
MT878082.1 AATATGAGTACATAGTGAAGATAAACCAACAAAATTA-AACTTATCTTCTAGGAAAGTGT
MT878081.1 AATATGAGTACATAGTGAAGATAAACCAACAAAATTA-AACTTATCTTCTAGGAAAGTGT
MT878080.1 AATATGAGTACATAGTGAAGATAAACCAACAAAATTA-AACTTATCTTCTAGGAAAGTGT
MT878084.1 -ATTTGAGTACATAGTGAAGATAATTATCAAAATTAACAACTTATCTTCCATGGAATTTAT
BK010428.1 -ATTTGAGTACATAGTGAAGATAATTATCAAAATTAACAACTTATCTTCCATGGAATTTAT
BK010437.1 -ATTTGAGTACATAGTGAAGATAATTATCAAAATTAACAACTTATCTTCCATGGAATTTAT
CasaMV1_newconsensus_sample311_3 -ATTTGAGTACATAGTGAAGATAATTATCAAAATTAACAACTTATCTTCCATGGAATTTAT
BK010438.1 -ATTTGAGTACATAGTGAAGATAATTATCAAAATTAACAACTTATCTTCCATGGAATTTAT
BK010436.1 -ATTTGAGTACATAGTGAAGATAATTATCAAAATTAACAACTTATCTTCCATGGAATTTAT
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MT878083.1 GTGTTACCTCCAAGAGGCATCCACGGGTTGATGGATATATTGATTAATCAGCTPAT
MT878082.1 GTGTTACCTCCAAGAGGCATCCACGGGTTGATGGATATATTGATTAATCAGCTPAT
MT878081.1 GTGTTACCTCCAAGAGGCATCCACGGGTTGATGGATATATTGATTAATCAGCTPAT
MT878080.1 GTGTTACCTCCAAGAGGCATCCACGGGTTGATGGATATATTGATTAATCAGCTPAT
MT878084.1 GTGTTACCTCCAAGAGGCATCCACGGGTTGATGGATATATTGATTAATCGGTATAT
BK010428.1 GTGTTACCTCCAAGAGGCATCCACGGGTTGATGGATATATTGATTAATCGGTATAT
BK010437.1 GTGTTACCTCCAAGAGGCATCCACGGGTTGATGGATATATTGATTAATCGGTATAT
CasaMV1_newconsensus_sample311_3 GTGTTACCTCCAAGAGGCATCCACGGGTTGATGGATATATTGATTAATCGGTATAT
BK010438.1 GTGTTACCTCCAAGAGGCATCCACGGGTTGATGGATATATTGATTAATCGGTATAT
BK010436.1 GTGTTACCTCCAAGAGGCATCCACGGGTTGATGGATATATTGATTAATCGGTATAT
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MT878083.1 CCACAATAACTTGTGGACAACCTTAATAGTTATCTAGACCAAGAATGAATCTAGATAAA
MT878082.1 CCACAATAACTTGTGGACAACCTTAATAGTTATCTAGACCAAGAATGAATCTAGATAAA
MT878081.1 CCACAATAACTTGTGGACAACCTTAATAGTTATCTAGACCAAGAATGAATCTAGATAAA
MT878080.1 CCACAATAACTTGTGGACAACCTTAATAGTTATCTAGACCAAGAATGAATCTAGATAAA
MT878084.1 CCACAATAACTTGTGGACAACCTTAACAGGTTACTAGACCCAATAATGAATCTAGTAACA
BK010428.1 CCACAATAACTTGTGGACAACCTTAACAGGTTACTAGACCCAATAATGAATCTAGTAACA
BK010437.1 CCACAATAACTTGTGGACAACCTTAACAGGTTACTAGACCCAATAATGAATCTAGTAACA
CasaMV1_newconsensus_sample311_3 CCACAATAACTTGTGGACAACCTTAACAGGTTACTAGACCCAATAATGAATCTAGTAACA
BK010438.1 CCACAATAACTTGTGGACAACCTTAACAGGTTACTAGACCCAATAATGAATCTAGTAACA
BK010436.1 CCACAATAACTTGTGGACAACCTTAACAGGTTACTAGACCCAATAATGAATCTAGTAACA
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MT878083.1 CTAGATCCAGTATAGGGATA-CCTGGACGCCCCCATCACTTGGACTTGATCCAGGGTT
MT878082.1 CTAGATCCAGTATAGGGATA-CCTGGACGCCCCCATCACTTGGACTTGATCCAGGGTT
MT878081.1 CTAGATCCAGTATAGGGATA-CCTGGACGCCCCCATCACTTGGACTTGATCCAGGGTT
MT878080.1 CTAGATCCAGTATAGGGATA-CCTGGACGCCCCCATCACTTGGACTTGATCCAGGGTT
MT878084.1 CTGGATCCAGTATAGGGATATCCTGGACGCCCCCATCATTCGGACTTGATCCGAAGGTT
BK010428.1 CTGGATCCAGTATAGGGATATCCTGGACGCCCCCATCATTCGGACTTGATCCGAAGGTT
BK010437.1 CTGGATCCAGTATAGGGATATCCTGGACGCCCCCATCATTCGGACTTGATCCGAAGGTT
CasaMV1_newconsensus_sample311_3 CTGGATCCAGTATAGGGATATCCTGGACGCCCCCATCATTCGGACTTGATCCGAAGGTT
BK010438.1 CTGGATCCAGTATAGGGATATCCTGGACGCCCCCATCATTCGGACTTGATCCGAAGGTT
BK010436.1 CTGGATCCAGTATAGGGATATCCTGGACGCCCCCATCATTCGGACTTGATCCGAAGGTT
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MT878083.1 AAGGAGAGAA-GATTCTACCGGAGGCTACTCCACCAAGTTGCTGTAATGA-CATGATTTCG
MT878082.1 AAGGAGAGAA-GATTCTACCGGAGGCTACTCCACCAAGTTGCTGTAATGA-CATGATTTCG
MT878081.1 AAGGAGAGAA-GATTCTACCGGAGGCTACTCCACCAAGTTGCTGTAATGA-CATGATTTCG
MT878080.1 AAGGAGAGAA-GATTCTACCGGAGGCTACTCCACCAAGTTGCTGTAATGA-CATGATTTCG
MT878084.1 AAGGAGAGAAGGATTCTACCGGAGGCTACTCCACCAAGTTGCGGTACTGAGTTTAATTTCG
BK010428.1 AAGGAGAGAAGGATTCTACCGGAGGCTACTCCACCAAGTTGCGGTACTGAGTTTAATTTCG
BK010437.1 AAGGAGAGAAGGATTCTACCGGAGGCTACTCCACCAAGTTGCGGTACTGAGTTTAATTTCG
CasaMV1_newconsensus_sample311_3 AAGGAGAGAAGGATTCTACCGGAGGCTACTCCACCAAGTTGCGGTACTGAGTTTAATTTCG
BK010438.1 AAGGAGAGAAGGATTCTACCGGAGGCTACTCCACCAAGTTGCTGTAATGAGTTTAATTTCG
BK010436.1 AAGGAGAGAAGGATTCTACCGGAGGCTACTCCACCAAGTTGCGGTACTGAGTTTAATTTCG
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MT878083.1 TTGTTATACTAGATTTCCTCCTAGTTATTAGAGGATTAGTC-CCTTTGACTAGGATTG
MT878082.1 TTGTTATACTAGATTTCCTCCTAGTTATTAGAGGATTAGTC-CCTTTGACTAGGATTG
MT878081.1 TTGTTATACTAGATTTCCTCCTAGTTATTAGAGGATTAGTC-CCTTTGACTAGGATTG
MT878080.1 TTGTTATACTAGATTTCCTCCTAGTTATTAGAGGATTAGTC-CCTTTGACTAGGATTG
MT878084.1 TTGTTATACTAGATTTCCTCCTAGTTATTAGAGGATTAGTC-CCTTTGACTAGGATTG
BK010428.1 TTGTTATACTAGATTTCCTCCTAGTTATTAGAGGATTAGTC-CCTTTGACTAGGATTG
BK010437.1 TTGTTATACTAGATTTCCTCCTAGTTATTAGAGGATTAGTC-CCTTTGACTAGGATTG
CasaMV1_newconsensus_sample311_3 TTGTTATACTAGATTTCCTCCTAGTTATTAGAGGATTAGTC-CCTTTGACTAGGATTG
BK010438.1 TTGTTATACTAGATTTCCTCCTAGTTATTAGAGGATTAGTC-CCTTTGACTAGGATTG
BK010436.1 TTGTTATACTAGATTTCCTCCTAGTTATTAGAGGATTAGTC-CCTTTGACTAGGATTG
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MT878083.1 AATCAAAATATATTAGCG-TATCATGCTTTTACCAACTTTGTGGAGCGCCTAAGGCAAG
MT878082.1 AATCAAAATATATTAGCG-TATCATGCTTTTACCAACTTTGTGGAGCGCCTAAGGCAAG
MT878081.1 AATCAAAATATATTAGCG-TATCATGCTTTTACCAACTTTGTGGAGCGCCTAAGGCAAG
MT878080.1 AATCAAAATATATTAGCG-TATCATGCTTTTACCAACTTTGTGGAGCGCCTAAGGCAAG
MT878084.1 AATC-TAATATAATAATAAAATTTATGCTCTTTTACCAACTTTGTGGAGCGCCTAAGGCAAG
BK010428.1 AATC-TAATATAATAATAAAATTTATGCTCTTTTACCAACTTTGTGGAGCGCCTAAGGCAAG
BK010437.1 AATC-TAATATAATAATAAAATTTATGCTCTTTTACCAACTTTGTGGAGCGCCTAAGGCAAG
CasaMV1_newconsensus_sample311_3 AATC-TAATATAATAATAAAATTTATGCTCTTTTACCAACTTTGTGGAGCGCCTAAGGCAAG
BK010438.1 AATC-TAATATAATAATAAAATTTATGCTCTTTTACCAACTTTGTGGAGCGCCTAAGGCAAG
BK010436.1 AATC-TAATATAATAATAAAATTTATGCTCTTTTACCAACTTTGTGGAGCGCCTAAGGCAAG
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MT878083.1 AACCTTGGCGTGGAAATGTTTGAACATTTACAGGTTACTGCGTGGGTTCCCTATCAGAATTC
MT878082.1 AACCTTGGCGTGGAAATGTTTGAACATTTACAGGTTACTGCGTGGGTTCCCTATCAGAATTC
MT878081.1 AACCTTGGCGTGGAAATGTTTGAACATTTACAGGTTACTGCGTGGGTTCCCTATCAGAATTC
MT878080.1 AACCTTGGCGTGGAAATGTTTGAACATTTACAGGTTACTGCGTGGGTTCCCTATCAGAATTC
MT878084.1 AACCTTGGCGTGGAAATGTTTGAACATTTACAGGTTACTGCGTGGGTTCCCTATCAGAATTC
BK010428.1 AACCTTGGCGTGGAAATGTTTGAACATTTACAGGTTACTGCGTGGGTTCCCTATCAGAATTC
BK010437.1 AACCTTGGCGTGGAAATGTTTGAACATTTACAGGTTACTGCGTGGGTTCCCTATCAGAATTC
CasaMV1_newconsensus_sample311_3 AACCTTGGCGTGGAAATGTTTGAACATTTACAGGTTACTGCGTGGGTTCCCTATCAGAATTC
BK010438.1 AACCTTGGCGTGGAAATGTTTGAACATTTACAGGTTACTGCGTGGGTTCCCTATCAGAATTC
BK010436.1 AACCTTGGCGTGGAAATGTTTGAACATTTACAGGTTACTGCGTGGGTTCCCTATCAGAATTC
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