-NW_025110834.1_1166903-1169141(-):Leptopilina_heterotoma_GCA_015476425.1 [A] [ORF] [Purifying] 99.4/99 -scf7180005159507_662-2906(-):Leptopilina_clavipes [C] [ORF] [Purifying] 79.4/63 -JADEYJ010000123.1_959555-961820(+):Leptopilina_boulardi_GCA_019393585.1 [A] [ORF] [Purifying] 88.2/72 -scaffold16607lsize4830_482-2753(-):Thrichoplasta [C] [ORF] [Purifying] -scaffold2600lsize22724_18537-20790(-):Rhoptromeris [C] [ORF] [Purifying] -scaffold130369_2821-5083(+):Trybliographa [C] [ORF] [Purifying] -99.5/100 LhFV_contig_682_orf003 [VIRUS] 100/100 83.7/86 -MT496835.1_1419_3632_DFV [VIRUS] -AQQ79925_LbFV [VIRUS] -scaffold10766lsize9301_2278-4437(-):Rhoptromeris [C] [*] 99/98 JAAXZA010078233.1_5956-8103(+):Dolichomitus 100/100 JAAXZA010185432.1_5337-7640(+):Dolichomitus 78.1/49 -PoFV_scaffold_1254_orf010 [VIRUS] 86.1/38 -PcFV_scaffold_5813_orf006 [VIRUS] -B0YLQ8_GpSGHV [VIRUS] 100/100 -B2YG07_MdSGHV [VIRUS] 43.1/56 -EfFV_orf034 [VIRUS] 74.1/35 -CcFV1_orf064 [VIRUS] 100/100 ------CcFV2_orf104 [VIRUS]

```
-JADEYJ010000302.1_2361047-2361818(+):Leptopilina_boulardi_GCA_019393585.1 [A] [ORF] [Purifying]
                 -scf7180005153673_2388-2763(+):Leptopilina_clavipes [C] [ORF] [Purifying]
     <del>54</del>.3/41
                 -NW_025111035.1_242691-243066(-):Leptopilina_heterotoma_GCA_015476425.1 [A] [ORF] [Purifying]
   <del>89</del>|8/43
                 -scaffold144878_4791-5292(-):Trybliographa [A] [ORF] [Purifying]
<del>81</del>.5/44
                  scaffold2616lsize23009_9459-9988(-):Thrichoplasta [C] [ORF] [Purifying]
Root
                  AQQ79930.1_LbFV [VIRUS]
       <del>91</del>.3/95
                 -LhFV_contig_223_orf023 [VIRUS]
   <del>94</del>|3/96
             ----scaffold10766lsize9301_5040-5422(-):Rhoptromeris [C] [ORF]
```

phylum - Virus - Other EVEs - Cynipids EVEs - Bacteria - Eukaryota

-JADEYJ010000244.1_1113492-1113642(+):Leptopilina_boulardi_GCA_019393585.1 [A] [ORF]

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-JADEYJ010000123.1_877336-878082(-):Leptopilina_boulardi_GCA_019393585.1 [A] [Purifying]
     71/8/40
              -NW_025111203.1_2150605-2150865(+):Leptopilina_heterotoma_GCA_015476425.1 [A] [Purifying]
      40/34
              -scf7180005166731_1_1427-2174(-):Leptopilina_clavipes [C] [ORF] [Purifying]
     9<del>9</del>.6/82
              -scaffold1176lsize34095_11706-12546(+):Rhoptromeris [C] [ORF] [Purifying]
              -scaffold8390lsize8880_3313-4078(-):Thrichoplasta [C] [ORF] [Purifying]
<del>86</del>.9/72
              -scaffold54871_7267-8158(-):Trybliographa [A] [ORF] [Purifying]
              -AQQ79992_LbFV [VIRUS]
         ---contig_223_24658_25089_-_LhFV
```

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-scaffold32671lsize3158_803-2192(-):Rhoptromeris [C] [ORF] [Purifying]
           94/91
                     -scaffold8133lsize9105_2520-3921(-):Thrichoplasta [C] [ORF] [Purifying]
          74.8/78
                     -C2925327_5623-7015(-):Trybliographa [A] [ORF] [Purifying]
         99.8/87
                    -JADEYJ010000362.1_3925166-3926564(+):Leptopilina_boulardi_GCA_019393585.1 [A] [ORF] [Purifying]
                    -NW_025111054.1_411478-412858(-):Leptopilina_heterotoma_GCA_015476425.1 [A] [ORF] [Purifying]
        83.8/81
                    -scf7180005174071_1_575-1958(+):Leptopilina_clavipes [A] [ORF] [Purifying]
9<del>9.</del>8/100
                    -LhFV_contig_701_orf007 [VIRUS]
<del>35</del>.1/54
                 ----MT496832.1_7571_8992_DFV [VIRUS]
                    -AQQ80003_LbFV [VIRUS]
               ---EfFV_orf108 [VIRUS]
```

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-scaffold_886_1_4393-5023(+):Leptopilina_clavipes [C] [ORF] [Purifying]
            11.9/51
                           -NW_025111054.1_198580-199204(-):Leptopilina_heterotoma_GCA_015476425.1 [A] [ORF] [Purifying]
            88.8/66
                           -JADEYJ010000396.1_383034-383655(-):Leptopilina_boulardi_GCA_019393585.1 [A] [ORF] [Purifying]
            96.4/93
                           -scaffold17494lsize4597_1344-1962(+):Thrichoplasta [C] [ORF] [Purifying]
           <del>71</del>.2/76
                           -scaffold9084lsize10567_4627-5260(-):Rhoptromeris [C] [ORF] [Purifying]
                           -scaffold89033_16397-17018(+):Trybliographa [A] [ORF] [Purifying]
     <del>- 95</del>.9/93
                           -LhFV_contig_22485_orf011 [VIRUS]
                  <del>(</del>0/99
   83.9/48
                           -MT496838.1_5639_6190_DFV [VIRUS]
                           -AQQ80007_LbFV [VIRUS]
                           -JAAXZA010078233.1_4032-4574(-):Dolichomitus
           <del>-99.</del>7/100
77.5/<del>32</del>
                           -JAAXZA010185432.1_3171-3566(-):Dolichomitus
                           CcFV2_orf105 [VIRUS]
38.8/39
                           -EfFV_orf043 [VIRUS]
   <del>-65</del>.3/55
Root
                           -PoFV_scaffold_1254_orf008 [VIRUS]
                       ----CcFV1_orf063 [VIRUS]
<del>81</del>.3/37
                         ---PcFV_scaffold_5813_orf008 [VIRUS]
```

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-C2812420_1157-1892(-):Trybliographa [C] [ORF] [Purifying]
             174.6/50
                      -scaffold2772Isize21917_9769-10630(+):Rhoptromeris [A] [ORF] [Purifying]
             93.5/76
                      -scaffold15311lsize5232_1490-2228(-):Thrichoplasta [C] [ORF] [Purifying]
                      -JADEYJ010000123.1_867547-868297(-):Leptopilina_boulardi_GCA_019393585.1 [A] [ORF] [Purifying]
                      -scf7180005161552_2259-3015(-):Leptopilina_clavipes [C] [ORF] [Purifying]
                      -NW_025110931.1_376272-377010(+):Leptopilina_heterotoma_GCA_015476425.1 [A] [ORF] [Purifying]
 <del>- 99.</del>2/100
                      -AQQ80014_LbFV [VIRUS]
54.2/56
                      -LhFV_contig_356_orf011 [VIRUS]
        <del>-99.|</del>5/100
Root
              -----MT496834.1_7039_8088_DFV [VIRUS]
                 ---PcFV_scaffold_1710_orf004 [VIRUS]
  <del>90</del>.3/71
            ------PoFV_scaffold_1254_orf005 [VIRUS]
```

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Figure S8-9: Cluster45_redefined - LbFVorf106 (Odv-e66)
Phylogeny of type 2
                                  -scaffold51610lsize1673_7-1049(+):Rhoptromeris [C] [*]
                                  -scaffold7282|size12268_5480-6862(+):Rhoptromeris [C] [*]
                     <del>-10</del>0/100
                                  -AQQ80026_LbFV [VIRUS]
                                  PcFV_scaffold_2714_orf014 [VIRUS]
                  87.3/73
                                 --LhFV_contig_223_orf001 [VIRUS]
                        <del>-10</del>0/100
                                  -MT496840.1_1371_3455_-_DFV [VIRUS]
                 6<del>0</del>.3/55
                                  JAAXZA010245826.1_233-2263(+):Dolichomitus
                      <del>10</del>0/100
                                  -JAAXZA010261437.1_6424-8460(-):Dolichomitus
                871613466
                                  -PoFV_scaffold_11706_orf005 [VIRUS]
                                  -CcFV1_orf094 [VIRUS]
              <del>98.</del>1/<del>100 10</del>0/100
                                  CcFV2_orf101 [VIRUS]
                                  B2YG24_MdSGHV [VIRUS]
                 <del>99.</del>8/100
                                  Q1PBV4_GpSGHV [VIRUS]
            <del>-99</del>/100
                                  -Q00704_AcMNPV [VIRUS]
                          <del>-10</del>0/100
                                  -S5G8H7_AcMNPV [VIRUS]
                                   Q91F16_CpV [VIRUS]
                      <del>10</del>0/100
                                  -Q9YMJ6_LdMNPV [VIRUS]
                                  -Perigonia_lusca_single_nucleopolyhedrovirus-_Lefavirales_ [VIRUS]
                                  B7SV33_OrNV [VIRUS]
               23.3/84
                                  odv-e66-like_BtBV
               80/76
                                  scaffold_6426_2401-4047(-):Platygaster_equestris [VIRUS]
        <del>10</del>0/100
              81 1/44 8/80
                                   NW_020271170.1_4630-6351(+):Melanaphis_sacchari
                                   _asius_niger–_Hymenoptera_ [EUKARYOTA]
             8#1.2750
                                   NW_020271594.1_6481-7299(+):Melanaphis_sacchari
               <del>85</del>.6/80
                                  Aphis_glycines-_Hemiptera_ [EUKARYOTA]
            84.6/88
                                  odv-e66-3_FaBV
                        69/97
                                  odv-e66-4_FaBV
                       <del>10</del>0/100
                                  odv-e66-2_FaBV
                <del>-10</del>0/100
           <del>99.</del>1/100
                                  odv-e66-1_FaBV
                                  -A0A076FC62_PmNV [VIRUS]
                     8<del>5</del>.2/91
                                  -A0A076FEL8_PmNV [VIRUS]
                    <del>10</del>0/100
                                  -A0A7D5YUG9_DhNV [VIRUS]
                     8<del>.3</del>2/43
                                  -A0A7D5YYH3_DhNV [VIRUS]
                                  odv-e66-14_MdBV
                      6<del>7</del>.8/99
                                  odv-e66-15 MdBV
                     <del>10</del>0/100
                                   CAR31581.1_CcBV
                      8<del>5.</del>1/100
                                  odv-e66-16_MdBV
              <del>86</del>.2/63
                                  -JABMBU010412579.1_779-2386(+):Phanerotoma
                <del>96.</del>7/100
                                  -NW_023276571.1_701371-703128(+):Chelonus_insularis
       Root
             28/45
                                  -odv-e66-11_MdBV
                         <del>10</del>0/100
                                  -odv-e66-3_MdBV
               2<del>5</del>.3/63
                                  odv-e66-12_MdBV
            84 6/64
                                  -JABMBU010391774.1_427-2157(+):Phanerotoma
                 <del>-9</del>6/97
                                  -JABMBU010401119.1_2007-2726(+):Phanerotoma
                                  odv-e66-4_MdBV
              <sup>L</sup>86</mark>.4/65
                                  odv-e66-8_MdBV
            96.3/72
                                  CAR40197.1_CiBV
                                  -Chelonus_inanitus-_Hymenoptera_ [EUKARYOTA]
                 <del>- 96.</del>1/100
                                  NW_023276792.1_508613-510520(-):Chelonus_insularis
              1<del>0</del>0/100<sup>4</sup>
                                  -JABMBU010023573.1_20-1957(+):Phanerotoma
             |9<del>0</del>|.5<del>/99</del>
                                  odv-e66-13_MdBV
                                  odv-e66-10_MdBV
           90.6/84
                    <del>10</del>0/100
                                  odv-e66-9_MdBV
                87.3/69
                                  odv-e66-2_MdBV
                98.1/99
                                  -CAR31580.1 CcBV
                      <del>10</del>0/100
                                  -Glyptapanteles_flavicoxis-_Hymenoptera_ [EUKARYOTA]
                 7<del>9</del>.8/69
                                  odv-e66-20_MdBV
              <del>10</del>0/100
                                  -odv-e66-1-1_MdBV
           <del>56</del>.5/64
                    <del>-10</del>0/100
                                  odv-e66-1-2_MdBV
                  15.5/75
                                  odv-e66-19_MdBV
                 <del>'10</del>07<del>10</del>0
                                  -odv-e66-17_MdBV
                                  odv-e66-6_MdBV
              9<del>3.</del>8/100
                                  ·Cotesia_chilonis-_Hymenoptera_ [EUKARYOTA]
              r<del>4</del>2/76
                                  odv-e66-7_MdBV
            96.5/98
                                  odv-e66-5_MdBV
                  <del>10</del>0/100
                                  -Microplitis_demolitor-_Hymenoptera_ [EUKARYOTA]
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-scf7180005158550_3147-4314(+):Leptopilina_clavipes [C] [ORF] [Purifying]
           96.4/96
                           -NW_025110834.1_1154690-1155974(-):Leptopilina_heterotoma_GCA_015476425.1 [A] [ORF] [Purifying]
                           -JADEYJ010000123.1_776318-777464(+):Leptopilina_boulardi_GCA_019393585.1 [A] [ORF] [Purifying]
          85.3/86
                           -scaffold3325lsize19781_8703-9930(-):Rhoptromeris [A] [ORF] [Purifying]
        9<del>8</del>.9/97
99.9/100
                           -scaffold6293lsize11261_7428-8619(+):Thrichoplasta [C] [ORF] [Purifying]
                            -scaffold47796_1668-2706(+):Trybliographa [C] [ORF] [Purifying]
76.6/64
                            AQQ80028_LbFV [VIRUS]
          <del>96</del>|.5/96
                            -scaffold7282lsize12268_2561-3548(-):Rhoptromeris [C] [ORF]
 <del>- 99.|</del>9/100
                            -JAAXZA010261437.1_10927-11364(+):Dolichomitus
Root
                            -JAAXZA010132348.1_15786-16223(-):Dolichomitus
                            -LhFV_contig_22485_orf001 [VIRUS]
             71.8/78
                            -LhFV_contig_3127_orf004 [VIRUS]
                          --MT496836.1_4337_5491_-_DFV [VIRUS]
   <del>-86</del>.7/73
                       ----CcFV1_orf065 [VIRUS]
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Phylogeny of type 1
                             -scf7180005174113_1_889-2107(+):Leptopilina_clavipes [C] [ORF] [Purifying]
                     94.5/98
                            -NW_025110834.1_1177010-1178225(-):Leptopilina_heterotoma_GCA_015476425.1 [A] [ORF] [Purifying]
                    93 1/95
                            -JADEYJ010000123.1_778552-779719(+):Leptopilina_boulardi_GCA_019393585.1 [A] [ORF] [Purifying]
                    99.6/100
                             -scaffold24379lsize3249_1072-2290(-):Thrichoplasta [C] [ORF] [Purifying]
                             -scaffold2772|size21917_15338-16556(+):Rhoptromeris [A] [ORF] [Purifying]
                             -scaffold142968_2297-3536(-):Trybliographa [C] [ORF] [Purifying]
              <del>48</del>.9/70
                            -LhFV_contig_22588_orf004 [VIRUS]
             16 8 49 10 0 / 100
                            -MT496837.1_952_2190_DFV [VIRUS]
                            -AQQ79980_LbFV [VIRUS]
                             PcFV_scaffold_4799_orf013 [VIRUS]
                             -JAAXZA010253759.1_823-1959(+):Dolichomitus
                             -scaffold_10234_3641-4645_PoEFV
        <del>79</del>.2/47
                   <del>6</del>$/67
                             -scaffold_84473_914-1241_PoEFV
                 <del>10</del>0/100
                             93.9/95
                             -CcFV1_orf072 [VIRUS]
           <del>53</del>.4/75
                             -CcFV2_orf091 [VIRUS]
                             -EfFV_orf066 [VIRUS]
                             Thiothrix_sp.-_Thiotrichales_ [BACTERIA]
                             Candidatus_Roizmanbacteria_bacterium_RIFCSPHIGHO2_12_FULL_33_9-_-_cellular-organisms_[BACTERIA]
       <del>491</del>,4/94
                             B0YLG0_GpSGHV [VIRUS]
              <del>99.</del>5/100
                            -B2YG23_MdSGHV [VIRUS]
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Phylogeny of type 3
                                                                              -ATY70197_DmNV_tom [VIRUS]
                                                    <del>10</del>0/100
                                                                              -B7SV63_OrNV [VIRUS]
                                            <del>94</del>.6/96
                                                                              -lef-4_FaBV
                                                    <del>10</del>0/100
                                                                              -Fopius_arisanus-_Hymenoptera_ [EUKARYOTA]
                                         <del>95</del>.3/97
                                                                              -AHW98259.1_LEF-4_NIBV [VIRUS]
                                                           <del>10</del>0/100
                                                                              -Nilaparvata_lugens_endogenous_nudivirus-_Lefavirales_ [VIRUS]
                                        23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 | 23/86 
                                                                              -lef-4_VcBV
                                                 <del>93</del>.3/99
                                                                              -Venturia_canescens-_Hymenoptera_ [EUKARYOTA]
                                    <del>- 97</del>1.|5/99
                                                                              -NW_020271170.1_7051-8397(-):Melanaphis_sacchari
                                <del>98.</del>7/100
                                                                              -lef4-like_BtBV
                                                                              -A4L259_GbNV [VIRUS]
                                                                              -NW_023276571.1_73577-74998(+):Chelonus_insularis
                                                                              -Chelonus_insularis-_Hymenoptera_ [EUKARYOTA]
                                                     <del>91.</del>5/100
                                                                               CAR40187.1_CiBV
                                                  1<del>0</del>0/100
                        <del>-96</del>.5/99
                                                                              -JABMBU010243911.1_141-1571(-):Phanerotoma
                                               <del>-86</del>.3/95
                                                                              -lef-4_MdBV
                                      1<del>0</del>0/100 99.6/100
                                                                              -Microplitis_demolitor-_Hymenoptera_ [EUKARYOTA]
                                      <del>24</del>.2/78
                                                                                UXGB01004222.1_2615-3850(+):Eurytoma_brunniventris
                                                                              -A0A0B4VFB9_ToNV [VIRUS]
                                                                              -AAN04392_HzNV-1 [VIRUS]
                              <del>-92</del>.4/96
             98.8/100
                                                                              -A0A076FES6_PmNV [VIRUS]
                                 <del>8</del>0/95
                                                                             --A0A7D5UN95_DhNV [VIRUS]
                                                                             -A0A097P1Z4_CpV [VIRUS]
                                                                           --Q91EW0_CpV [VIRUS]
                                      <del>78</del>.6/43
                                                                               Q919I1_CuniNPV [VIRUS]
                                  8<del>4</del>.5/43
                                                                              -Q6JK98_NeseNPV [VIRUS]
                               <del>99.|</del>9/100
                                                                              -P41477_AcMNPV [VIRUS]
                                              <del>10</del>0/100
                                                                              -S5GFY8_AcMNPV [VIRUS]
                                     <del>-96</del>.5/99
                                                                              -Q9YMN4_LdMNPV [VIRUS]
                                      25.2/66
                                                                              -Adoxophyes_orana_nucleopolyhedrovirus-_Lefavirales_ [VIRUS]
                                                                              -NW_025111203.1_2169177-2171064(-):Leptopilina_heterotoma_GCA_015476425.1 [A] [ORF] [Purifying]
                                                    97,9/100
                                                                              -scf7180005156365_802-2674(-):Leptopilina_clavipes [C] [ORF] [Purifying]
                                                    90.1/97
                                                                              -JADEYJ010000123.1_868877–870749(+):Leptopilina_boulardi_GCA_019393585.1 [A] [ORF] [Purifying]
                                                    92.5/75
                                                                              -scaffold10242lsize9676_642-2541(+):Rhoptromeris [C] [ORF] [Purifying]
                                                                              -scaffold8390lsize8880_5185-7096(+):Thrichoplasta [C] [ORF] [Purifying]
             Root
                                                                              -scaffold62109_7718-9599(-):Trybliographa [C] [ORF] [Purifying]
                                        187.4/91
                                                                              -LhFV_contig_223_orf002 [VIRUS]
                                                             <del>10</del>0/100
                                                                             --MT496840.1_3602_5371_DFV [VIRUS]
                                     <del>-8</del>5/54
                                                                              -JAAXZA010261437.1_9399-10586(+):Dolichomitus
                                                          <del>10</del>0/100
                                                                              -JAAXZA010132348.1_16935-18353(-):Dolichomitus
                                         <del>92</del>.3/69
                                 6<del>9</del>1.8/46
                                                                              -CcFV1_orf0103 [VIRUS]
                                                       <del>10</del>0/100
                                                                              -CcFV2_orf008 [VIRUS]
                                                                              -AQQ80027_LbFV [VIRUS]
                                      <del>-98</del>|.6/99
                                                                              -scaffold7282lsize12268_3641-5110(-):Rhoptromeris [C]
                                                                              -scaffold_15031_1081-1779_PoEFV
                                                      75/98
                                                                              -scaffold_15031_513-1767_PoEFV
                                                     63.2/93
                                24/57
                                                                              -PoFV_scaffold_11706_orf003 [VIRUS]
                                                   <del>10</del>0/10σ
                                                                             -PoFV_scaffold_11706_orf004 [VIRUS]
                            <del>-99.</del>$/100
                                                                              -EfFV_orf004 [VIRUS]
                 <del>98.</del>7/100
                                                                              -PcFV_scaffold_2714_orf013 [VIRUS]
                                                                              -B0YLK5_GpSGHV [VIRUS]
                        <del>88</del>.3/90
                                                                              -B2YG64_MdSGHV [VIRUS]
```

Figure S8-12: Cluster115-Cluster431-Cluster37 - LbFVorf107 (lef-4)

--Q919I9_CuniNPV [VIRUS]

```
Phylogeny of type 1
                                             ATY70178_DmNV_tom [VIRUS]
                             <del>-10</del>0/100
                                            -B7SV85_OrNV [VIRUS]
                          <del>99</del>.7/99
                                            -lef-8_FaBV
                            <del>10</del>0/100
                                             Fopius_arisanus-_Hymenoptera_ [EUKARYOTA]
                        9計.7/92
                                             -AHW98295.1_LEF-8_NIBV [VIRUS]
                            <del>-10</del>0/100
                                            -Nilaparvata_lugens_endogenous_nudivirus-_Lefavirales_ [VIRUS]
                          8<del>4</del>.8/90
                                            -lef-8_VcBV
                           <del>10</del>0/100
                                            -Venturia_canescens-_Hymenoptera_ [EUKARYOTA]
                        <del>83</del>.5/52
                                             -NW_020271684.1_2365-4968(+):Melanaphis_sacchari
                                             -Melanaphis_sacchari-_Hemiptera_ [EUKARYOTA]
                           1<del>0</del>0/100
                                            -lef8-like_DnBV [VIRUS]
                      <del>89</del>.495751/100
                                             -NW_020270563.1_25575-28466(+):Melanaphis_sacchari
                         92.3/62
                                             Trichogramma_brassicae-_Hymenoptera_ [EUKARYOTA]
                                             -A4L212_GbNV [VIRUS]
                                             -NW_023276793.1_897804-901232(-):Chelonus_insularis
                            9<del>8.</del>5/100
                                             Chelonus_insularis-_Hymenoptera_ [EUKARYOTA]
                           62.6/84
                                             JABMBU010005597.1_23-613(-):Phanerotoma
               <del>10</del>0/100
                           97.7798
                                            -JABMBU010374989.1_1-2793(+):Phanerotoma
                          <del>10</del>0/100
                                             CAR31572.1_CcBV
                           99<del>.</del>9/100
                                             Cotesia_congregata-_Hymenoptera_ [EUKARYOTA]
                          99.3/100
                    <del>60</del>.5/85
                                            -lef-8_MdBV
                           100/100
                                             Microplitis_demolitor—_Hymenoptera_ [EUKARYOTA]
                                             A0A0B4VGT1_ToNV [VIRUS]
                                            -A0A076FIV8_PmNV [VIRUS]
      100/100
                          <del>10</del>0/100
                                            -A0A7D5YJ41_DhNV [VIRUS]
                     <del>93</del>.6/98
                                             -AAN04384_HzNV-1 [VIRUS]
                                            -A0A193DTX8_AcMNPV [VIRUS]
                                <del>-10</del>0/100
                                            -P41452_AcMNPV [VIRUS]
                             <del>99.</del>8/100
                                             Q9YMS3_LdMNPV [VIRUS]
                                            -Q91ES4_CpV [VIRUS]
                    <del>- 85</del>.1/97
                                            -Q6JK79_NeseNPV [VIRUS]
                  <del>10</del>0/10<del>0</del>
                                             Q919P3_CuniNPV [VIRUS]
                                             NW_025110886.1_705010-708058(+):Leptopilina_heterotoma_GCA_015476425.1 [A] [ORF] [Purifying]
                         99,3/100
                                            -scf7180005173345_2_942-3969(-):Leptopilina_clavipes [A] [ORF] [Purifying]
                         75.2/84
                                            -JADEYJ010000341.1_4178628-4181616(-):Leptopilina_boulardi_GCA_019393585.1 [A] [ORF] [Purifying]
                          <del>98</del>/87
                                             -scaffold5022lsize13666_6246-9156(-):Thrichoplasta [C] [ORF] [Purifying]
                                             -scaffold7953lsize11583_6322-9286(-):Rhoptromeris [A] [ORF] [Purifying]
                                             scaffold70212_2574-5574(-):Trybliographa [C] [ORF] [Purifying]
       Root
                    51.5/79
                                             LhFV_contig_22485_orf005 [VIRUS]
                           95.5/99
                                            -MT496836.1_1_1077_DFV [VIRUS]
                           <del>10</del>0/100
                  <del>99.</del>9/100
                                            -MT496838.1_3_2099_-_DFV [VIRUS]
                                            -AQQ80016_LbFV [VIRUS]
                    38.8/71
                                             -EfFV_orf109 [VIRUS]
                                             JAAXZA010084296.1_11-448(+):Dolichomitus
                         9<del>9.</del>8/100
                                             -JAAXZA010227149.1_432-4148(+):Dolichomitus
                <del>- 97</del>.3/89
                        <del>10</del>0/97
                                             JAAXZA010272532.1_911-4440(+):Dolichomitus
                         <del>82</del>.9/87
                   <del>95</del>.7/96
                                            -scaffold_3866_14985-15276_-_PoEFV
                                             -PoFV_scaffold_1254_orf004 [VIRUS]
                  6<del>2</del>.2<del>/89</del>.4/98
                                            -scaffold_3866_16769-16194_-_PoEFV
             <del>r 7.9</del>8/48
                                             -PcFV_scaffold_2714_orf002 [VIRUS]
                 43|.8<del>/59</del>
                                             CcFV1_orf053 [VIRUS]
                      <del>10</del>0/100
                                             CcFV2_orf015 [VIRUS]
          <del>-95</del>|.6/9|9
                                             B0YLJ4_GpSGHV [VIRUS]
                         <del>10</del>0/100
                                            -B2YG47_MdSGHV [VIRUS]
                                            -AKY03234_AmFV [VIRUS]
```

Figure S8-14: Cluster1614–Cluster91_redefined – LbFVorf96 (lef–8)

```
Phylogeny of type 1
                                        -ATY70205_DmNV_tom [VIRUS]
                                        -B7SVB7_OrNV [VIRUS]
                                        -lef-9 FaBV
                                <del>-10</del>0/100
                                        -Fopius_arisanus-_Hymenoptera_ [EUKARYOTA]
                            7<del>6</del>.5/82 •
                                        -ATY70249_DmNV_tom [VIRUS]
                               <del>- 99.</del>|9/100
                                        -B7SVB9_OrNV [VIRUS]
                                        -AHW98255.1_LEF-9_NIBV [VIRUS]
                                  0/86
                                        -Nilaparvata_lugens_endogenous_nudivirus-_Lefavirales_ [VIRUS]
                                        -AHW98254.1_OrNV_gp098-like_protein_NIBV [VIRUS]
                          847597688
                                        -lef-9_VcBV
                              <del>10</del>0/100
                                        -Venturia_canescens-_Hymenoptera_ [EUKARYOTA]
                                        -lef9-like_BtBV
                         4<del>5</del>l.4/69
                                        NW_020271524.1_3376-3795(+):Melanaphis_sacchari
                            9<del>8.</del>5/100
                                        -lef9-like_DnBV [VIRUS]
                           91.2/97
                                        NW_020271316.1_42534-44367(-):Melanaphis_sacchari
                         3.4/61<sub>1.0</sub>0/100
89.9/94
                                        -Melanaphis_sacchari-_Hemiptera_ [EUKARYOTA]
                                         NW_020271171.1_20024-21898(-):Melanaphis_sacchari
                                        -scaffold_6426_6391-8865(-):Platygaster_equestris [VIRUS]
                                        -A4L1Y7_GbNV [VIRUS]
             29.8/37
                                        -A0A076FIZ4_PmNV [VIRUS]
                      <del>10</del>0/100
                                        ·Viruses-_d_Viruses_ [VIRUS]
             941/<u>5</u>7.8/100
                                         A0A7D5YKQ3_DhNV [VIRUS]
           90.4/55
                                        -AAN04369_HzNV-1 [VIRUS]
                                        -A0A0B4VGI1_ToNV [VIRUS]
                                         NW_023276451.1_2156244-2158205(+):Chelonus_insularis
          <del>10</del>0/100
                                         Chelonus_insularis-_Hymenoptera_ [EUKARYOTA]
              100/100
                                         JABMBU010048401.1_137-2077(+):Phanerotoma
        <sub>66</sub>.3/52 78.3/96
                                        -lef-9_MdBV
                <del>10</del>0/100
                                        -Microplitis_demolitor—_Hymenoptera_ [EUKARYOTA]
                                         UXGB01007671.1_298-1704(-):Eurytoma_brunniventris
                                         Dictyoglomus_turgidum-_Dictyoglomales_ [BACTERIA]
              <del>99.</del>9/100
                                         Physcomitrium_patens-_Funariales_ [EUKARYOTA]
        <del>-8</del>6/98
                                         Araneus_ventricosus-_Araneae_ [EUKARYOTA]
                                        -scf7180005177077_2_6093-7893(+):Leptopilina_clavipes [C] [ORF] [Purifying]
                            99<del>.</del>6/100
                                        -NW_025111054.1_416171-417872(+):Leptopilina_heterotoma_GCA_015476425.1 [A] [ORF] [Purifying]
                            98<sub>F</sub>1/100
                                        -JADEYJ010000362.1_3920120-3921875(-):Leptopilina_boulardi_GCA_019393585.1 [A] [ORF] [Purifying]
                            90.5/99
                                        -scaffold20907lsize5235_1565-3584(-):Rhoptromeris [C] [ORF] [Purifying]
                           <del>188/</del>5600
                                        -scaffold6671lsize10727_8133-10179(+):Thrichoplasta [C] [ORF] [Purifying]
                                        -scaffold80982_4461-6138(-):Trybliographa [A] [ORF] [Purifying]
                       <del>89</del>.8/97 '
                                        -LhFV_contig_356_orf007 [VIRUS]
                      97.9/<del>10010</del>0/100
                                        -MT496834.1_9061_11013_DFV [VIRUS]
                    <del>88</del>.7/89
       Root
                                        -AQQ79998_LbFV [VIRUS]
                                        -EfFV_orf025 [VIRUS]
                                       --PoFV_scaffold_15158_orf005 [VIRUS]
                                        -scaffold_7180_1612-4084_-_PoEFV
                   75.5/7<mark>896</mark>.5/99
                                         scaffold_6401_17630-18491_PoEFV
                     89.7/65
                                         JAAXZA010252657.1_3650-5956(-):Dolichomitus
                     <del>4</del>1/56
                                        -CcFV1_orf036 [VIRUS]
                <del>99.</del>87<del>4</del>00640/100
                                        -CcFV2_orf012 [VIRUS]
                                        -PcFV_scaffold_2882_orf003 [VIRUS]
                                    ----B2YG51_MdSGHV [VIRUS]
                                        -B0YLI7_GpSGHV [VIRUS]
                                        -B0YLI6_GpSGHV [VIRUS]
         <del>-98.</del>1/100
                                       --P41465_AcMNPV [VIRUS]
                             <del>10</del>0/100
                                        -S5G678_AcMNPV [VIRUS]
                           <del>98.</del>8/100
                                        -Q9YMR2_LdMNPV [VIRUS]
                        <del>99.</del>7/100
                                       --A0A097P2H9_CpV [VIRUS]
                            <del>10</del>0/100
                     <del>-96</del>.2/99
                                        -Q91ET8_CpV [VIRUS]
                 <del>-99.</del>9/100
                                        -Q6JKC0_NeseNPV [VIRUS]
                                        -Q919L7_CuniNPV [VIRUS]
```

Figure S8-15: Cluster15 – LbFVorf78 (lef-9)

phylum 者 Virus 者 Other EVEs 🤰 Cynipids EVEs 者 Bacteria 者 Eukaryota

```
----LhFV_contig_701_orf009 [VIRUS]
             <del>10</del>0/100
               <del>193</del>.5/65
                     -AQQ79922_LbFV [VIRUS]
      <del>98</del>.3/99
                     -scaffold7282lsize12268_1199-2225(-):Rhoptromeris [C] [ORF]
  100/100
                     -JAAXZA010237346.1_181-1182(+):Dolichomitus
                     -JAAXZA010132348.1_13060-14061(-):Dolichomitus
                     -scaffold_15031_5725-6763_PoEFV
  5<del>9</del>.9/20
           90.2/96
                     -scaffold_18363_299-734_-_PoEFV
           <del>10</del>0/100
                     -PoFV_scaffold_64266_orf001 [VIRUS]
    <del>87</del>.3/42
<del>|53</del>.9/52
| <del>|1</del>9/25
                     -EfFV_orf147 [VIRUS]
                     -PcFV_scaffold_2714_orf011 [VIRUS]
                     -CcFV1_orf0100 [VIRUS]
   <del>- 96</del>.4/99
                     -CcFV2_orf083 [VIRUS]
Root
                 +---B0YLI5_GpSGHV [VIRUS]
               <del>99.</del>7/100
                     -A0A0Y0KBC0_GpSGHV [VIRUS]
        30.8/70
                -----B2YG59_MdSGHV [VIRUS]
      <del>99.</del>9/100
                     -A0A0Y0M3C6_GpSGHV [VIRUS]
                -----B0YLI4_GpSGHV [VIRUS]
```

```
Figure S8-18: Cluster2683–Cluster470–Cluster79–Cluster2592 (Helicase2)
Phylogeny of type 1
                                      NW_023276387.1_1363223-1367734(+):Chelonus_insularis
                                      Chelonus_insularis-_Hymenoptera_ [EUKARYOTA]
                     1<del>0</del>0/100
                                      -JABMBU010144361.1_3021-7616(+):Phanerotoma
                   <del>- 99.|</del>9/100
                                      -helicase_MdBV
                1<del>0</del>0/100 100 100
                                      -Microplitis_demolitor—_Hymenoptera_ [EUKARYOTA]
                                      Capsaspora_MELD_virus_2-_d_Viruses_ [VIRUS]
                                      A0A076FCD0_PmNV [VIRUS]
               <del>86</del>.6/62
                      <del>10</del>0/100
                                      A0A7D5YJ67_DhNV [VIRUS]
                  <del>-9</del>9/98
                                      A0A0B4VFE6_ToNV [VIRUS]
            90.7/60.5/92
5/91
                                      AAN04398_HzNV-1 [VIRUS]
                                      A0A0B4VGV3_ToNV [VIRUS]
                                      Lasius_niger-_Hymenoptera_ [EUKARYOTA]
                                      helicase_VcBV
                            <del>-10</del>0/100
                                      -Venturia_canescens-_Hymenoptera_ [EUKARYOTA]
                        <del>3</del>7/76
                                      helicase_FaBV
          <del>95</del>.8/85
                      96.7/97
                                      -ATY70176_DmNV_tom [VIRUS]
                            <del>10</del>0/100
                                     -B7SV55_OrNV [VIRUS]
                     7<del>6</del>.4/57
                                      -AHW98270.1_helicase_NIBV [VIRUS]
                             <del>10</del>0/100
                              -----Nilaparvata_lugens_endogenous_nudivirus-_Lefavirales_ [VIRUS]
                    90529951
      99<sub>F</sub>9/100
                                      helicase-like_BtBV
                  <del>-10</del>þ/<u>100</u>
                                      A4L251_GbNV [VIRUS]
                                      NW_020271170.1_12012-15776(-):Melanaphis_sacchari
                    <del>78</del>.2/89
                                      NW_020271171.1_9730-13968(-):Melanaphis_sacchari
                                      B0YLJ9_GpSGHV [VIRUS]
          <del>-10</del>0/100
                                      B2YG60_MdSGHV [VIRUS]
                                      -scaffold_1017_18369-23376(-):Leptopilina_clavipes [A] [ORF] [Purifying]
                      99,9/100
                                     -NW_025111203.1_2163172-2168314(+):Leptopilina_heterotoma_GCA_015476425.1 [A] [ORF] [Purifying]
                      99.5/98
                                     -JADEYJ010000123.1_871195-876265(-):Leptopilina_boulardi_GCA_019393585.1 [A] [ORF] [Purifying]
                      99.2/99
                                      -scaffold2427lsize23614_2590-7741(+):Rhoptromeris [C] [ORF] [Purifying]
                      100/100
                                      -scaffold6316lsize11231_2357-7496(-):Thrichoplasta [C] [ORF] [Purifying]
       Root
                                      -scaffold6371_16128-21291(+):Trybliographa [A] [ORF] [Purifying]
                  1<del>9</del>7/97
                                     -LhFV_contig_356_orf012 [VIRUS]
                        <del>-10</del>0/100
                <del>99</del>.2<del>/99</del>
                                     -MT496834.1_1738_6981_DFV [VIRUS]
                                      AQQ80012_LbFV [VIRUS]
              96.3/94
                                      JAAXZA010185209.1_1466-4189(-):Dolichomitus
                  94.9/98
                                      -PoFV_scaffold_1254_orf006 [VIRUS]
                9<del>9.</del>7/100
                                      PcFV_scaffold_1710_orf003 [VIRUS]
                                      -JAAXZA010273280.1_50-2746(+):Dolichomitus
             <del>88</del>.3/69
                           <del>199.</del>5/100
                                     -JAAXZA010227149.1_6410-7171(+):Dolichomitus
                         <del>10</del>0/100
                                      JAAXZA010237213.1_628-5734(+):Dolichomitus
               90.8/70
                                     -CcFV1_orf020 [VIRUS]
          <del>99.</del>|7/1|||0
             76 8/44 100/100
                                     -CcFV2_orf025 [VIRUS]
                                      -EfFV_orf073 [VIRUS]
                                     -AKY03192_AmFV [VIRUS]
```

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Figure S8-19: Cluster59 – LbFVorf92 (Putative Lef-3)
Phylogeny of type 1
                                     -NW_025110870.1_1014983-1016993(-):Leptopilina_heterotoma_GCA_015476425.1 [A] [ORF] [Purifying]
                           96/100
                                     -scf7180005174277_5015-7037(+):Leptopilina_clavipes [C] [ORF] [Purifying]
                         98<sub>..</sub>6/100
                                     -JADEYJ010000123.1_813178-815146(-):Leptopilina_boulardi_GCA_019393585.1 [A] [ORF] [Purifying]
                         61.9774
                                     -scaffold97118_4940-7124(+):Trybliographa [A] [ORF] [Purifying]
                         <del>10</del>0/100
                                     -scaffold13471Isize5871_2603-4616(+):Thrichoplasta [C] [ORF] [Purifying]
                   82.6/867.92/55
                                     -scaffold3317lsize19814_8810-10868(+):Rhoptromeris [A] [ORF] [Purifying]
                   6<del>5</del>.9/86
                                     LhFV_contig_223_orf032 [VIRUS]
                  62.6/56
                                     -AQQ79988_LbFV [VIRUS]
                                     EfFV_orf115 [VIRUS]
                                     -PoFV_scaffold_21671_orf004 [VIRUS]
                           44.8/87
                 7<del>5</del>.1/42
                                     -scaffold_242276_409-269_-_PoEFV
                          <del>10</del>0/100
                                     scaffold_33452_1_865-44_-_PoEFV
                   12.4/29
                                     CcFV1_orf099 [VIRUS]
                     <del>-9</del>2/84
                                     CcFV2_orf082 [VIRUS]
               <del>98.</del>6/1|00
                                     -JAAXZA010000438.1_203-1009(+):Dolichomitus
                         <del>10</del>0/100
                                     -JAAXZA010132348.1_5907-8192(+):Dolichomitus
           <del>99.|</del>9/10¢
                                     -PcFV_scaffold_7513_orf015 [VIRUS]
                         <del>10</del>0/100
                                     -PcFV_scaffold_7960_orf005 [VIRUS]
                                     B0YLM8_GpSGHV [VIRUS]
                 <del>-10</del>0/100
                                     B2YG81_MdSGHV [VIRUS]
                                     A0A076FER7_PmNV [VIRUS]
                    <del>99.</del>8/100
                                     -A0A7D5UN40_DhNV [VIRUS]
                <del>91</del>.6/92
                                      UXGB01017917.1_1051-2655(+):Eurytoma_brunniventris
               54.8/83
                                     Eufriesea_mexicana-_Hymenoptera_ [EUKARYOTA]
              <del>89</del>.9/90
      100/100
                                     AAN04354_HzNV-1 [VIRUS]
                  <del>10</del>0/100
                                     Danaus_plexippus_plexippus__Lepidoptera_ [EUKARYOTA]
                                     Apis_dorsata-_Hymenoptera_ [EUKARYOTA]
            <del>56</del>.3/83
                      8<del>9</del>.9/98
                                     Bombus_impatiens-_Hymenoptera_ [EUKARYOTA]
                     87.8/98
                                     ·Ceratina_calcarata-_Hymenoptera_ [EUKARYOTA]
                    94.4/98
                                     ·Habropoda_laboriosa-_Hymenoptera_ [EUKARYOTA]
          88.9/<del>92 10</del>0/100
                                     Dufourea_novaeangliae-_Hymenoptera_ [EUKARYOTA]
                     <del>99.</del>7/100
                                     Nomia_melanderi-_Hymenoptera_ [EUKARYOTA]
        <del>| 95</del>|.9|/99
                                     A0A076FCB6_PmNV [VIRUS]
            <del>98.</del>9/100
                                     A0A7D5UN80_DhNV [VIRUS]
       Root
                                     A0A0B4VFM0_ToNV [VIRUS]
                                     -NW_020271170.1_38387-39595(+):Melanaphis_sacchari
                                     Melanaphis_sacchari-_Hemiptera_ [EUKARYOTA]
                     <del>10</del>0/100
                                     NW_020270751.1_5942-8254(-):Melanaphis_sacchari
                  <del>70</del>.9/88
                                     -helicase2-like_ApBV [VIRUS]
                99.9/99.7/1
                                     -helicase2-like_DnBV [VIRUS]
                                     -helicase2-like_BtBV
                                     -AHW98301.1_helicase_2_NIBV [VIRUS]
                       <del>10</del>0/100
             <del>87</del>.1/93
                                     -Nilaparvata_lugens_endogenous_nudivirus-_Lefavirales_ [VIRUS]
                                     -ATY70179_DmNV_tom [VIRUS]
           <del>93</del>.4/<del>97_10</del>0/100
                                     -B7SVC9_OrNV [VIRUS]
                                     -A4L209_GbNV [VIRUS]
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Phylogeny of type 2
                                         FN557484.1_38K_TnBV [VIRUS]
                         80 18/100
                                         Toxoneuron_nigriceps-_Hymenoptera_ [EUKARYOTA]
                        97.4/100
                                         -CAR31574.1_CcBV
                         98<del>.</del>9/100
                                         -Cotesia_congregata-_Hymenoptera_ [EUKARYOTA]
                       99.2/400
                                         -38K_MdBV
                         9<del>9.</del>7/100
                                         -Microplitis_demolitor=_Hymenoptera_ [EUKARYOTA]
                     <del>83</del>.2/96
                                         NW_023276469.1_492707-493594(+):Chelonus_insularis
                                         -Chelonus_insularis-_Hymenoptera_ [EUKARYOTA]
                          <del>98.</del>8/100
                  99.3/99
                                         -CAR40188.1_CiBV
                      100/100
                                         JABMBU010396014.1_340-1209(+):Phanerotoma
                 <del>34</del>.9/89
                                         AAN04447_HzNV-1 [VIRUS]
             9<del>6</del>.3/99
                                         A0A0B4VGM8_ToNV [VIRUS]
                                          UXGB01007671.1_1880-2809(+):Eurytoma_brunniventris
            <del>21</del>.8/66
                                         -A0A076FCA4_PmNV [VIRUS]
                           <del>10</del>0/100
                                         ·Viruses__d_Viruses_ [VIRUS]
                <del>- 97.</del>9/100
                                         A0A7D5YSI3_DhNV [VIRUS]
                                        -A0A097P2C8_CpV [VIRUS]
                              <del>10</del>0/100
                                         -Q91EW7_CpV [VIRUS]
          <del>84</del>.5/89
                       <del>45</del>1.6/83
                                         Q9YMM8_LdMNPV [VIRUS]
                         9<del>3</del>.9/98
                                         -Buzura_suppressaria_nucleopolyhedrovirus-_Lefavirales_ [VIRUS]
                     <del>99.</del>|4/10<del>0</del>•
                                         -A0A097PV53_AcMNPV [VIRUS]
                 7<del>9</del>.1/94 <del>99.</del>3/100
                                         P24745_AcMNPV [VIRUS]
                <del>98</del>.9/97
                                         -Q6JKA1_NeseNPV [VIRUS]
                                         Q919I8_CuniNPV [VIRUS]
                                         -38k-like_BtBV
        39.2/65
                              <del>10</del>0/100
                                         Capsicum_chinense-_Solanales_ [EUKARYOTA]
                       <del>68</del>.6/56
                                         A4L1W4_GbNV [VIRUS]
                     <del>59</del>.4/52
                                         -AHW98243.1_38K_protein_NIBV [VIRUS]
                         <del>99.</del>9/100
                                         -Nilaparvata_lugens_endogenous_nudivirus-_Lefavirales_ [VIRUS]
                    <del>81</del>.6/71
                                         -NW_020271316.1_20700-21557(-):Melanaphis_sacchari
                              <del>99.|</del>9/100
                                         -Melanaphis_sacchari-_Hemiptera_ [EUKARYOTA]
                          2<del>1</del>|.2/77
                                         -38k-like_DnBV [VIRUS]
                         <del>99</del>/100
                 <del>99.</del>9/100
                                         NW_020270563.1_22477-23295(+):Melanaphis_sacchari
                                         -ATY70228_DmNV_tom [VIRUS]
                     <del>- 99</del>/100
                                         -B7SVA8_OrNV [VIRUS]
                    <del>2</del>4/57
                                         -38K_FaBV
                                         PoFV_scaffold_2702_orf008 [VIRUS]
                        13.2/54
                                         scaffold_7821_12681-13122_PoEFV
       Root
                       <del>99.</del>5/100
                                         scaffold_983_9780-10269_PoEFV
                   711.8/84
                                         JAAXZA010227479.1_4386-5019(-):Dolichomitus
                             90.4/99
                                         -JAAXZA010110262.1_33351-33853(+):Dolichomitus
                 <del>91</del>.4/87
                                         -JAAXZA010228571.1_8097-8549(+):Dolichomitus
                                         CcFV1_orf083 [VIRUS]
               84.4/<del>81</del>.8/88
                                         ·CcFV2_orf065 [VIRUS]
                                         EfFV orf063 [VIRUS]
                 <del>71</del>.6/85
                                        -PcFV_scaffold_4799_orf004 [VIRUS]
                                         -scaffold52008lsize1653_998-1493(-):Rhoptromeris [C] [ORF]
              <del>-95</del>.8/99
                           0/55
                                         -scaffold10766lsize9301_7573-7872(+):Rhoptromeris [C]
                         1/93
                                         -scaffold98928lsize393_1-174(+):Rhoptromeris [C]
                       <del>90</del>.7/93
                                         -scaffold49329lsize1793_119-211(+):Rhoptromeris [C]
                 <del>63</del>.2/84
      48.3/70
                                         AQQ79939_LbFV [VIRUS]
               77.7/82
                                         LhFV_contig_223_orf016 [VIRUS]
                                        --MT496833.1_7501_8217_DFV [VIRUS]
                                         -scaffold_6426_1427-2291(+):Platygaster_equestris [VIRUS]
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Figure S8-20: Cluster38 - LbFVorf19 (38k)

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Phylogeny of type 1
                                 -JAAXZA010192707.1_7-255(-):Dolichomitus
                         77.2/81
                                 JAAXZA010217886.1_2444-3157(+):Dolichomitus
                        <del>99.|</del>9/100
                                 -JAAXZA010011009.1_21059-21739(-):Dolichomitus
                   29 7/78 43 4/82
                                  JAAXZA010110262.1_15002-15709(-):Dolichomitus
                                  PcFV_scaffold_1710_orf030 [VIRUS]
                  7<del>5</del>.4/83
                                 -PoFV_scaffold_2702_orf003 [VIRUS]
                          d/48
                                 -scaffold_983_16235-16619_-_PoEFV
                 <del>92</del>.4/82
                                 -scaffold_17380_961-1714_-_PoEFV
                                 CcFV1_orf011 [VIRUS]
                     <del>99.</del>5/100
                                 -CcFV2_orf087 [VIRUS]
                                 -scf7180005171671_3016-3691(+):Leptopilina_clavipes [C] [ORF] [Purifying]
                      84.7/93
                30 8/48
                                 -NW_025110834.1_1174270-1174948(+):Leptopilina_heterotoma_GCA_015476425.1 [A] [ORF] [Purifying]
                      83.9/91
                                 -JADEYJ010000123.1_775290-775971(+):Leptopilina_boulardi_GCA_019393585.1 [A] [ORF] [Purifying]
                      90.5/97
                                 -scaffold2846lsize21627_13914-14595(-):Rhoptromeris [A] [ORF] [Purifying]
                                 -scaffold7143lsize10132_6978-7677(-):Thrichoplasta [C] [ORF] [Purifying]
               <del>90</del>.8/85
                                 scaffold156805_7370-8099(+):Trybliographa [A] [ORF] [Purifying]
                                 -LhFV_contig_22485_orf009 [VIRUS]
                       <del>10</del>0/100
                                 -MT496838.1_4529_5230_DFV [VIRUS]
             <del>81</del>|.5/96
                                 -AQQ80005_LbFV [VIRUS]
                                 B0YLN2_GpSGHV [VIRUS]
                 <del>99.</del>5/100
                                 B2YG85_MdSGHV [VIRUS]
                                 -EfFV_orf040 [VIRUS]
                                 -A0A193DTK7_AcMNPV [VIRUS]
         <del>94</del>.5/99
                  <del>г99.</del>|5/100
                                 Q06694_AcMNPV [VIRUS]
                 49.1/92
                                 -A0A097P1N5_CpV [VIRUS]
                      <del>10</del>0/100
                89.3/99
                                 -Q91EV2_CpV [VIRUS]
             <del>- 97.|</del>1/1<u>|00_</u>
                                 Q9YMN8_LdMNPV [VIRUS]
                                 Q6JKB2_NeseNPV [VIRUS]
                                 NW_020270455.1_17899-18039(-):Melanaphis_sacchari
                           92.7/85
                           100/100 NW_020271171.1_24608-24853(+):Melanaphis_sacchari
                                --NW_020271171.1_499-807(+):Melanaphis_sacchari
                96.3/100
                                 -AHW98244.1_AC81-like_protein_NIBV [VIRUS]
                                 Nilaparvata_lugens_endogenous_nudivirus-_Lefavirales_ [VIRUS]
                <del>50</del>.1/25
                                 -Ac81-1_VcBV
                     <del>99.</del>8/100
                                 -Venturia_canescens-_Hymenoptera_ [EUKARYOTA]
                   87.6/88
       Root
                                 -Ac81-2_VcBV
                  <del>95</del>.3786
                                 -Ac81-3_VcBV
                                 ac81-like_DnBV [VIRUS]
                   <del>-55</del>.9/89
                                 NW_020270782.1_8815-9285(+):Melanaphis_sacchari
             88.5/44
88.5/44
                                  NW_020271205.1_460078-460398(+):Melanaphis_sacchari
                                 -A4L1X7_GbNV [VIRUS]
                                 ac81-like_FaBV
             <del>68</del>.6/45
                                 -A0A076FES3_PmNV [VIRUS]
                      <del>95.</del>8/100
                                 -A0A7D5YW98_DhNV [VIRUS]
                                  AAN04328_HzNV-1 [VIRUS]
           <del>76</del>.1/58
                                   JXGB01017917.1_468-971(+):Eurytoma_brunniventris
                                 A0A0B4VGV6_ToNV [VIRUS]
                                 ATY70250_DmNV_tom [VIRUS]
      96.8/90
             <del>89</del>.7/99
                                 -B7SV25_OrNV [VIRUS]
                                 -AKY03212_AmFV [VIRUS]
       <del>75</del>.2/81
                                 -Q919H1_CuniNPV [VIRUS]
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Figure S8-21: Cluster965-Cluster60-Cluster519-Cluster44 - LbFVorf85 (Ac81)