**Deloris**

Gene 1. SSC: 432-1193, CP: Yes, SCS: Both, ST: SS, Blast-Start: [BengiVuitton, 1, NCBI-BLAST, 1:1, 100%, 0.0], Gap: 432, LO: No, RBS: [Kibler6, Karlin Medium, 1.954, -5.352, No], F: NKF,SIF-Blast: [NKF], SIF-HHPred: [NKF], SIF-Syn: [NKF]

Gene 2. SSC: 1436-2026, CP: No, SCS: Glimmer, ST:SS, BLAST-Startt; [BengiVuitton, 2, NCBI-BLAST,1:113, 63.6%, 0.0], Gap; 243, LO: No, RBS: [Kibler6, Karlin Medium, 1.984, -5.465, No]F: VIP2-like ADP-ribosyltransferase toxin, SIF-BLAST: [VIP2-like ADP-ribosyltransferase toxin,BengiVuitton, 2, QNJ56952, 99%, 7e-141], SIF-HHPred: [NKF], SIF-Syn: NKF

Gene 3: SSC: 2023-2328, CP: yes, SCS: both, ST: SS, BLAST-Start: [Bengivuitton, 3, NCBI-BLAST, 1:1,100%, 0.0], Gap: -3, LO: yes, RBS: [Kibler6, Karlin Medium, 2.443, -3.812, yes], F: NKF, SIF-BLAST: [NKF], SIF-HHPred: [NKF], SIF-Syn: [NKF]

Gene 4: SSC: 2325-2621, CP: No, SCS: Both, ST: SS, Blast-Start: [First, 4, NCBI-Blast, 1:1, 100%, 0.0],Gap: -3, LO: Yes, RBS: [Kibler6, Karlin Medium, 1.306, -6.024, No], F: HNH Endonuclease,SIF-Blast: [HNH Endonuclease, NCBI-Blast, First, 4, YP\_007677413.1, 98%, 6e-65],SIF-HHPred: [NKF], SIF-Syn: [NKF]

Gene 5: SSC: 2660-3130, CP: Yes, SCS: Both, ST:SS, BLAST-Start; [BengiVuitton, 5, NCBI-BLAST, 1:1,100%, 0.0], Gap:29, LO; No, RBS: [Kibler6, Karlin Medium, 2.951, -2.681, yes], F: terminase,small subunit, SIF-BLAST: [terminase small subunit, NCBI-BLAST, BengiVuitton, 5, QNJ56955,100%, 2e-109], SIF-HHPred: [terminase small subunit, RCSB PDB,Escherichia virus HK97,6Z6E\_B, 36.1%, 98.61%], SIF-Syn: [terminase small subunit, HNH endonuclease, NKF Pham
3016, Drake55, Echild]

Gene 6: SSC: 3221-4192, CP: Yes, SCS: Both, ST: SS, Blast-Start: [Alma, 6, NCBI Blast, 1:1, 100%,0.0], Gap: 91, LO: No, RBS: [Kibler6, Karlin Medium, 2.951, -2.681, yes], F: NKF, SIF-Blast:[NKF], SIF-HHPred: [NKF], SIF-Syn: [NKF]

Gene 7 :SSC: 4189-4794, CP: Yes, SCS: Both, ST: SS, Blast-Start: [BengiVuitton, 7, NCBI-Blast, 1:1,100%, 0.0], Gap: -3, LO: Yes, RBS: [Kibler6, Karlin Medium, 2.443, -4.579, yes], F: NKF,SIF-Blast: [NKF], SIF-HHPred: [NKF], SIF-Syn: [NKF]

Gene 8 :SSC: 4870-4947
tRNA-Gln(ctg)-tRNA was called by Aragorn 1.2.41 and tRNA ScanSE on 2/16/2022. Infernal score was 56.1.

Gene 9 :SSC: 4975-5133, CP: Yes, SCS: Both, ST:SS, BLAST-Start: [BengiVuitton, 9, NCBI-BLAST, 1:1,100%, 9.8e-27], Gap; 28, LO: No, RBS: [Kibler6, Karlin Medium, 3.162, -2.684, yes], F: NKF,SIF-BLAST: NKF, SIF-HHPred: NKF, SIF-Syn: NKF

Gene 10 :SSC: 5133-6422, CP: yes, SCS: both, ST: SS, BLAST-Start: [Bengivuitton, 10, NCBI-blast, 1:1,100%, 0.0], Gap: 0, LO: yes, RBS: [Kibler6, Karlin Medium, 2.121, -4.429, no], F: lysin A,SIF-BLAST: [lysin A, NCBI-blast, Bengivuitton 10, QNJ56959.1, 99%, 0.0], SIF-HHPred: [NKF],
SIF-Syn: [lysin A, holin, Agape74 and Echild]

Gene 11 SSC: 6419-6868, CP: Yes, SCS: Glimmer, ST: SS, BLAST-start: [BengiVuitton, 11,NCBI-BLAST, 1:1, 100.0%, 0.0], Gap: -3 LO: Yes, RBS: [Kibler6, Karlin Medium, 2.616, -3.386,no], F: holin, SIF-BLAST: [Holin, SIF-BLAST, BengiVuitton 11, QNJ56960.1, 99%, 4e-79],SIF-HHPred: [Membrane protein, HHPred, Rhodothermus marinus DSM 4252, 6F0K\_H, 31%,
71.9], SIF-Syn: [Lysin A, Holin, Lysin B, BengiVuitton and DudeLittle]

Gene 12: SSC: 6865-7842, CP: Yes, SCS: Glimmer, ST: SS, BLAST-start: [BengiVuitton, 12,NCBI-BLAST, 1:1, 100.0%, 0.0], Gap: -4, LO: Yes, RBS: [Kibler6, Karlin Medium, 2.306, -4.038,no], F: lysin B, SIF-BLAST: [Lysin B, SIF-BLAST, BengiVuitton 12, QNJ56963.1, 99%, 0.0],SIF-HHPred: [Lysin B, HHPred, Mycobacteriophage D29, 3HC7\_A, 97%, 100], SIF-Syn: [Holin,
Lysin B, Terminase, KingCyrus and Centaur]

Gene 13 SSC: 7865-9655, CP: Yes, SCS: Glimmer, ST:Yes, BLAST-Start: [VA6\_12,12,NCBI-BLAST, 1:1,100%, 0.0], Gap: 23, LO:Yes, RBS: [Kibler6, Karlin Medium, 3.026, -2.523, Yes], F: Terminase, SIF-BLAST: [Terminase, NCBI-Blast, VA6, 12, QJD51896.1, 99%, 0.0], SIF-HHPred:
[Terminase, PDB, HK97, 6Z6D\_A, 76.2%, 100], SIF-Syn: [Terminase, LysinB, Portal Protein, BengiVuitton and VA6].

Gene 14. SSC: 9652-11112, CP: Yes, SCS: Glimmer, ST: SS, BLAST-start: [BengiVuitton, 14,NCBI-BLAST, 1:1, 100.0%, 0.0], Gap: 0, LO: Yes, RBS: [Kibler6, Karlin Medium, 2.023, -4.696,no], F: portal protein, SIF-BLAST: [Portal protein, SIF-BLAST, BengiVuitton 14, QNJ56963.1,99%, 0.0], SIF-HHPred: [Portal protein,HHPred, Bacillus phage SPP1, 2JES\_Q, 80%, 100],SIF-Syn: [Terminase, Portal protein, Capsid maturation protease, Bactobuster and Tomathan]

Gene 15 SSC: 11142-11993, CP: Yes, SCS: Glimmer, ST: NA, BLAST-start: [BengiVuitton, 15,NCBI-BLAST, 1:1, 100.0%, 0.0], Gap: 0, LO: Yes, RBS: [Kibler6, Karlin Medium, 1.308, -6.201,no], F: capsid maturation protease, SIF-BLAST: [Capsid maturation protease, SIF-BLAST,BengiVuitton 15, QNJ56964.1, 99%, 0.0], SIF-HHPred: NKF, SIF-Syn: [Portal protein, Capsid maturation protease, Scaffolding protein, First and Trooper]

Gene 16 SSC: 12045-12557, CP: Yes, SCS: Glimmer, ST: SS, BLAST-start: [LadyBird, 15, NCBI-BLAST,26:38, 79.7%, 0.0], Gap: 0, LO: No, RBS: [Kibler6, Karlin Medium, 2.951, -3.254, no], F:scaffolding protein, SIF-BLAST: [Scaffolding protein, SIF-BLAST, LadyBird 15,YP\_009193642.1, 84%, 8e-80], SIF-HHPred: [Capsid protein and C-terminal part of scaffoldingprotein, HHPred, Staphylococcus virus 80alpha, 6B0X\_f, 32%, 41.62], SIF-Syn: [Capsidmaturation protease, Scaffolding protein, Major capsid protein, AbbyPaige and QueenBeesly]

Gene 17: SSC: 12587-13543, CP: Yes, SCS: Glimmer, ST: SS, BLAST-start: [BengiVuitton, 17,NCBI-BLAST, 100%, 0.0], Gap: 0, LO: Yes, RBS: [Kibler6, Karlin Medium, 3.006, -2.864, no], F:major capsid protein, SIF-BLAST: [Major Capsid Protein, SIF-BLAST, BengiVuitton 17,QNJ56966.1, 100%, 0], SIF-HHPred: [], SIF-Syn: [Major Capsid Protein BengiVuitton,LittleDude], [Major Capsid protein, HHPred, Staphylococcus virus 80alpha, 6B0X\_f, 99.7%,
1.7e-28]

Gene 18: SSC: 13613-13795, CP: Yes, SCS: Glimmer, ST: SS, BLAST-Start: [Ladybird 17, NCBI-BLAST,Query 1 to Subject 2, 95.00%, 3e-14], Gap: 70, LO: Yes, RBS: [Kibler6, Karlin Medium,2.627, -4.113,yes], F: NKF, SIF: SIF-BLAST: NKF, SIF-HHPred: NKF, SIF-Syn: NKF

Gene 19: SSC: 13799-14176, CP: Yes, SCS: Glimmer, ST: SS, BLAST-Start: [], Gap: 4, LO: Yes, RBS:[ Kibler6, Karlin Medium, 3.116 -2.253, yes], F: Head to tail adapter protein, SIF-BLAST: [head-to-tail adapter protein, NCBI Genbank, VA6, 18, QJD51902.1, 100%, 1e-84], SIF-HHPred: NKF,
SIF-Syn: [Head-to-tail adapter, BengiVuitton and DudeLittle]

Gene 20: 14173-14367 SSC: 14173-14367, CP: Yes, SCS: Glimmer, ST: SS, BLAST-start: [BengiVuitton, 20,NCBI-BLAST, 1:1, 100.0%, 6.1e-39], Gap: 0, LO: No, RBS: [Kibler6, Karlin Medium, 1.039,-6.767, yes], F: NKF, SIF-BLAST: [Head-to-tail connector protein, SIF-BLAST, Ladybird 19,YP\_009193646.1, 98%, 1e-38], SIF-HHPred: NKF, SIF-Syn: NKF

Gene 21: SSC: 14364-14732 CP: Yes, SCS: Both, ST: SS, BLAST-Start: [BenjiVuitton, 21, NCBI-Blast, 1:1,100%, 9.15e-85], Gap: -4, LO: yes, RBS: [Kibler6, Karlin Medium, 1.212 -6.266, no], F: Head-to-tail stopper SIF BLAST BengiVuitton, QNJ56970, 100% 9.15 e-85,] SIF-HHPred: minor capsid protein PF10665.12 90.16 1.3 e-10, SIF-Syn: NKF

Gene 22: SSC: 14732-15067 CP: Yes SCS: Both ST: SS BLAST-Start: [BengiVuitton, 22, NCBI-BLAST,1:1, 100%, 0.0] Gap: 0 LO: No RBS: [Kibler6, Karlin Medium, 2.579, -4.212, yes] F:NKFSIF-BLAST: [NKF] SIF-HHPred: [NKF] SIF-Syn: [NKF]

Gene 23: SSC: 15077-15502 CP:Yes SCS: Neither ST: SS BLAST-Start: [BengiVuitton, 23, NCBI-BLAST,1:1, 100%, 0.0] Gap: 10 LO: Yes RBS: [Kibler6, Karlin Medium, 3.269, -2.011, yes] F: tail terminator SIF-BLAST: [tail terminator, NCBI-BLAST, BengiVuitton, 23, QNJ56972.1, 99%,3e-82] SIF-HHPred: [tail terminator, HHPred, Rcc01690, 6TE9\_F, 89%, 99.33] SIF-Syn: [tail
terminator, NKF, major tail protein, BengiVuitton, Echild]

Notes: We changed the start site from 15143 to 15077. This start, although not called by either Glimmer or GeneMark, includes all of the coding potential for this gene, and has the longest ORF at 426 bp to the original 360 bp. Additionally, this start site has a preferable RBS z-value

Gene 24: SSC: 15520-16110 CP: Yes SCS: Glimmer ST: SS BLAST-Start: [BengiVuitton, 24,NCBI-BLAST, 1:1, 100%, 0.00] Gap: 18 LO: Yes RBS: [Kibler6, Karlin Medium, 2.732, -3.124,yes] F: major tail protein SIF-BLAST: [major tail protein, NCBI-BLAST, BengiVuitton, 24,QNJ56973.1, 99%, 2e-140] SIF-HHPred: [major tail protein, HHPred, YSD1\_22, 6XGR\_M,1.93, 98.05] SIF-Syn: [major tail protein, tail terminator, tail assembly chaperone, BengiVuitton,CRB1]

Gene 25: SSC: 16220-16627 CP: Yes SCS: Glimmer ST: SS BLAST-Start: [BengiVuitton, 25,NCBI-BLAST, 1:1, 100%, 0.00] Gap: 110 LO: No RBS: [Kibler6, Karlin Medium, 2.530, -4.015,no] F: tail assembly chaperone SIF-BLAST: [tail assembly chaperone, NCBI-BLAST,BengiVuitton, 25, QNJ56974.1, 99%, 3e-53] SIF-HHPred: [tail assembly chaperone, HHPred,HK97, 2OB9\_A, 0.96, 41.42] SIF-Syn: [tail assembly chaperone, major tail protein, tail
assembly chaperone, BengiVuitton, Larenn]

Gene 26: SSC:16220-17052 CP:Yes SCS: Glimmer ST: SS BLAST-Start: [BengiVuitton, 26, NCBI-BLAST,1:1, 91.7%, 0.0] Gap: 110 LO: No RBS: [Kibler6, Karlin Medium, 2.530, -4.015, no]F: tailassembly chaperone SIF-BLAST: [tail assembly chaperone, NCBI-BLAST, BengiVuitton, 26,QNJ56975.1, 91%, 9e-126] SIF-HHPred: NKF SIF-Syn: [tail assembly chaperone, major tailprotein, tape measure protein, BengiVuitton, Leogania]

Gene 27: SSC: 17042-19579 CP: Yes SCS: Both ST: SS BLAST-Start: [BengiVuitton, 27, NCBI-BLAST,1:1, 100%, 0.00] Gap: -9 LO: Yes RBS: [Kibler6, Karlin Medium, 2.752, -3.160, yes] F: tape measure protein SIF-BLAST: [tape measure protein, NCBI-BLAST, BengiVuitton, 27,QNJ56976.1, 99%, 0.0] SIF-HHPred: [tape measure protein, HHPred, gp57, 6V81\_AF, 1.36,99.97] SIF-Syn: [tape measure protein, tail assembly chaperone, minor tail protein,
BengiVuitton, VA6] SIF-Mem: [tail assembly chaperone, 6, 6]

Gene 28: SSC: 19613- 20623 CP: Yes SCS: Both ST: SS BLAST-Start: [BengiVuitton, 28, NCBI-BLAST,1:1, 100%, 0.0] Gap: 34 LO: Yes RBS: [Kibler6, Karlin Medium, 2.951, -2.664, yes] F: minor tailprotein SIF-BLAST: [minor tail protein, NCBI-BLAST, BengiVuitton, 28, QNJ56977.1, 100%, 0.0]
SIF-HHPred: [tape measure protein, HHPred, 6V8I\_BD, 93.47%, 99.9] SIF-Syn: [minor tailprotein, tape measure protein, minor tail protein, BengiVuitton, LadyBird]

Gene 29: SSC: 20620-22392 CP: Yes SCS: Both ST: NI BLAST-Start: [BengiVuitton, 29, NCBI-BLAST,1:1, 0.0, 98%] Gap: -4 LO: Yes RBS: [Kibler6, Karlin Medium,2.122, -4.349, yes] F:minor tailprotein SIF-BLAST: [minor tail protein, NCBI-BLAST, BengiVuitton 29, QNJ56978.1, 99.83%,0.0] SIF-HHPred: [prophage tail protein gp18, HHPred, 3GS9\_A, 57.10%, 98.99] SIF-Syn:[minor tail protein, minor tail protein, minor tail protein, BengiVuitton, LadyBird]

Notes: changed start from 20596-20620 to get better 1:1 Blast alignment, better final RBS score

Gene 30: SSC: 22409-22852 CP: Yes SCS: Both ST: NI BLAST-Start: [BengiVuitton, 30, NCBI-BLAST,1:1, 100%, 0.0] Gap: 17 LO: No RBS: [Kibler6, Karlin Medium, 2.156, -4.355, no] F: NKF SIF-BLAST: [ NKF] SIF-HHPred: [NKF] SIF-Syn: [NKF]

Gene 31: SC: 22849-23190 CP: Yes SCS: Both ST: SS BLAST-Start: [BengiVuitton, 31, NCBI-BLAST,1:1, 100%, 0.0] Gap: 3 LO: Yes RBS: [Kibler6, Karlin Medium, 2.590, -3.441, yes] F: NKFSIF-BLAST: [NKF] SIF-HHPred: [NKF] SIF-Syn: [NKF]

Deleted original Gene 32: SSC: 25995-26306. Deleted. Reverse gene no significant BLAST hits

Gene 32: SSC:23191-25377, CP: Yes, SCS: Both-GL, ST: SS, BLAST-Start: [BengiVuitton, 32,NCBI-BLAST, 1:1, 100%, 0.0], Gap: 1, LO: Yes , RBS: [Kibler6, Karlin Medium, 2.951, -2.681,yes], F: minor tail protein , SIF-BLAST: [minor tail protein, NCBI-BLAST, BengiVuitton 32,QNJ56981.1, 98.63%, 0.0], SIF-HHPred: NKF, SIF-Syn: NKF

Gene 33: SSC: 26086-26664, CP:Yes, SCS: Both-GM, ST:SS, BLAST-Start: [BengiVuitton,34,NCBI-BLAST, 1:1,100%, 0.0], Gap: 745 , LO: Yes , RBS: [Kibler6, Karlin Medium, 1.640,-5.712, no], F: ParA dsDNA partitioning protein , SIF-BLAST: [ ParA-like dsDNA partitioningprotein, NCBI-BLAST, BengiVuitton, 34, QNJ56983.1, 100%, 4e-122], SIF-HHPred: [Plasmidpartitioning protein ParF, HHPred, 4DZZ\_A, 84.0%, 99.84], SIF-Syn: NKF

Notes: Changed start from 26314-26086 to cover all of ParA like protein alignment and obtain 1:1 in Blast

Gene 34: SSC: 26657-26935, CP: Yes, SCS: Glimmer, ST: SS, BLAST-Start: [BengiVuitton, 35,NCBI-BLAST, 1:1, 100%, 0.0], Gap: -7, LO: Yes, RBS: [Kibler6, Karlin Medium, 1.544, -6.091,no], F: ParB dsDNA partitioning protein, SIF-BLAST: [ ParB-like dsDNA partitioning protein,NCBI-BLAST, BengiVuitton, 35, QNJ56984.1, 98%, 3e-58], SIF-HHPred: NKF, SIF-Syn: NKF

Notes: chose start site 26657 because it was called by Glimmer, includes all of the coding potential,has the longest ORF, and is the start site listed on the starterator report

Gene 35: SSC: 27318-27106, CP: Yes, SCS: Glimmer, ST: SS, BLAST-Start: [First, 36,NCBI-BLAST, 1:1, 100%, 0.0], Gap: 171, LO: Yes , RBS: [Kibler6, Karlin Medium, 3.009, -2.559,yes], F: NKF, SIF-BLAST: [ NKF, NCBI-BLAST, First, 36, YP\_007677444.1, 98%, 2e-22],SIF-HHPred:NKF , SIF-Syn: NKF

Gene 36:SSC: 27509-27330 CP: Yes, SCS: Glimmer, ST: SS, BLAST-Start: [BengiVuitton, 37,NCBI-BLAST, 1:1, 100%, 1.4e-23], Gap: 12, LO: Yes, RBS: [Kibler6, Karlin Medium, 2.156,-4.626, yes], F: NKF, SIF-BLAST: [NKF, NCBI-BLAST, BengiVuitton, 37, QNJ56986.1, 100%,1e-23], SIF-HHPred: NKF, SIF-Syn: NKF

Gene 37:SSC: 27883-27506, CP: Yes, SCS: Glimmer, ST: SS, BLAST-Start: [BengiVuitton, 38,NCBI-BLAST, 1:1, 100%, 0.0], Gap: -3, LO: Yes, RBS:[Kibler6, KarlinMedium, 3.026, -2.505,yes], F: NKF, SIF-BLAST: [NKF, NCBI-BLAST, BengiVuitton, 38, QNJ56987.1, 100%, 5e-86],SIF-HHPred: NKF, SIF-Syn: NKF

Gene 38:

SSC: 28148-27876, CP: Yes, SCS: Glimmer, ST: SS, BLAST-Start: [BengiVuitton, 39,NCBI-BLAST, 1:1, 100%, 0.0], Gap: -7, LO: Yes, RBS: [Kibler6, Karlin Medium, 3.098, -3.393,yes], F: NKF, SIF-BLAST: [NKF, NCBI-BLAST, BengiVuitton, 39, QNJ56988.1, 100%, 4e-60],SIF-HHPred: NKF, SIF-Syn: NKF

Gene 39: SSC: 28345-28145, CP: Yes , SCS: Glimmer , ST: SS, BLAST-Start: [BengiVuitton,40, NCBI-BLAST, 1:1, 100%, 3.6e-68], Gap:-3 , LO: Yes , RBS: [Kibler6, Karlin Medium, 3.026,-2.505, yes], F: NKF, SIF-BLAST: [NKF, NCBI-BLAST, BengiVuitton, 40, QNJ56989.1, 100 %,4e-38], SIF-HHPred: NKF, SIF-Syn: NKF

Gene 40: SSC: 28604-28329, CP: Yes , SCS: Both-GM , ST: SS , BLAST-Start: [AN3, 42,NCBI-BLAST, 1:1, 100%, 0.0], Gap:-16 , LO: Yes, RBS: [Kibler6, KarlinMedium, 2.541, -3.606,yes], F:NKF, SIF-BLAST: [NKF, NCBI-BLAST, BengiVuitton, 41, QNJ56990.1, 97.8%, 3e-57],
SIF-HHPred:NKF , SIF-Syn:NKF

Gene 41: SSC:28810- 28628 CP: yes SCS: GeneMark ST: NA BLAST-Start: [LadyBird, 45, NCBI-BLAST, 1:18, 77.9%, 3.1E-34] Gap: 3 LO: yes RBS:[Kibler6, Karlin Medium, 2.165, -4.257, yes] F: hypothetical protein SIF-BLAST: [hypothetical protein, NCBI-Blast, LadyBird45, YP\_009193672, 98%, 4e-49] SIF-HHPred: NKF SIF-Syn: [NKF, DNA Polymerase I, LadyBird, First]

Gene 42: SSC: 29079-28858 CP:yes SCS:Glimmer ST:SS BLAST-Start:[Bengivuitton 43, NCBI-BLAST, 1:1, 100%, 1.5e-44] Gap:3 LO:yes RBS:[Kibler6, Karlin Medium, 3.026, -2.970, yes] F:hypothetical protein SIF-BLAST:[hypothetical protein, NCBI-BLAST, Bengivuitton 43, QNJ56992.1, 98%, 2e-44] SIF-HHPred:NKF SIF-Syn:[NKF, DNA polymerase, Bengivuitton, Ladybird]

Gene 43: SSC: 30897-29110 CP: yes SCS: Glimmer ST: SS BLAST-Start: [BengiVuitton, 44, NCBI-Blast, 1:1, 100%, 0.0] Gap:0 LO: yes RBS: [Kibler6, Karlin Medium, 2.364, -3.917, no] F: DNA Polymerase I SIF-BLAST:[DNA Polymerase I, NCBI-Blast, BengiVuitton 44, QNJ56993.1, 99%, 0.0] SIF-HHPred: [DNA Polymerase I, HHPred, 5DKT\_A, 82.2%, 100] SIF-Syn: [DNA
Polymerase I, LadyBird, First]

Gene 44: SSC: 31259-30906 CP:yes SCS:Glimmer ST:SS BLAST-Start:[Bengivuitton 45, NCBI-BLAST, 1:1, 100%, 0] Gap:8 LO:no RBS:[Kibler6, Karlin Medium, 1.302, -6.153, yes] F:NKF SIF-BLAST:[NKF, NCBI-BLAST, Bengivuitton 45, YP 009009092.1, 98%, 1e-36] SIF-HHPred:NKF
SIF-Syn:[NKF, helix turn helix DNA binding protein, DNA polymerase Bengivuitton, Ladybird]

Gene 45 SSC: 31444-31256. CP: Yes, SCS: Glimmer, ST: SS, BLAST-Start: [BengiVuitton, 46, NCBI-BLAST, 1:1, 100%, 48e-35], Overlap: 3, LO: Yes, RBS: [Kibler6, Karlin Medium, 2.7632, -3.077, yes], F: [NKF], SIF-BLAST [NKF], SIF-HHPred [NKF], SIF-Syn: [NKF]

Gene 46: SSC: 31644-31444 CP:yes SCS:Glimmer ST:SS BLAST-Start:[Ladybird 50, NCBI-BLAST, 1:1, 100%, 1.0e-38] Gap:0 LO:yes RBS:[Kibler6, Karlin Medium, 2.235, -5.208, yes] F:hypothetical protein SIF-BLAST:[hypothetical protein, NCBI-Blast, Ladybird, YP\_009193677.1, 98%, 1.0e-38] SIF-HHPred:NKF SIF-Syn:[NKF, turn helix-turn DNA binding domain, LadyBird, Bengivuitton]

Gene 47: SSC: 32057-31644 CP: yes SCS: Glimmer ST: SS BLAST-Start: [VA6, 47, NCBI-Blast, 1:1, 100%, 0.0] Gap: 0 LO: yes RBS: [Kibler6, Karlin Medium, 2.574, -3.921, yes] F: helix-turn-helix DNA binding domain SIF-BLAST: [helix-turn-helix DNA binding protein, NCBI-Blast, VA6 47, QJD51931.1, 99%, 2e-91] SIF-HHPred: [helix-turn-helix DNA binding protein, HHPred, 1U3E\_M, 93.4%, 97.98] SIF-Syn: [helix-turn-helix DNA binding protein, DNA Polymerase I, LadyBird, BengiVuitton]

Gene 48: SSC: 32263-32054 CP:no-first 50 base pairs not under potential SCS:Glimmer ST:SS BLAST-Start:[VA6, 48, NCBI-BLAST, 1:1, 100%, 5.5e-43] Gap:0 LO:yes RBS:[Kibler6, Karlin Medium, 1.964, -5.206, no] F:hypothetical protein SIF-BLAST:[hypothetical protein, NCBI-Blast, First 49, YP\_007677457.1, 98%, 6e-43] SIF-HHPred:NKF SIF-Syn:[NKF, helix-turn-helix binding domain,
DNA polymerase I, Bengivuitton]

Gene 49: SSC:32054-32256 CP: yes SCS:Glimmer ST:SS BLAST-Start:[BengiVuitton, 50, NCBI-Blast, 1:1, 100%, 0.0e0] Gap: 0 LO: no RBS:[Kibler6, Karlin Medium, 2.721, -3.086] F: hypothetical protein SIF-BLAST:[hypothetical protein, NCBI-Blast, BengiVuitton 50, QNJ56999.1 ,98%, 2e-53] SIF-HHPred: [NKF] SIF-Syn:[NKF, BengiVuitton and LadyBird]

Gene 50: SSC: 32506-33234 CP:yes SCS:Glimmer ST:SS BLAST-Start:[Bengivuitton 51, NCBI-BLAST, 1:1, 100%, 0.0] Gap:0 LO:yes RBS:[Kibler6 Karlin Medium, 2.557, -4.259, no] F:ThyX-Like Synthase SIF-BLAST:[ThyX-Like Synthase, NCBI-Blast, Bengivuitton, QNJ57000.1, 99%, 7e-178] SIF-HHPred:[Thymidylate Synthase ThyX, HHPred, 3GWC\_F, 92.1%, 100] SIF-Syn:[NKF, BengiVuitton, First]

Gene 51: SSC: 33835-33311 CP: Yes SCS: Both ST: SS BLAST-Start: [BENGIVUITTON, 52,QBLAST, 1:1, 100%, 0.0] Gap: 77 LO: Yes RBS:[Kibler6, Karlin Medium, 2.732, -3.142,yes] F:NKF SIF-Blast: [NKF, NCBI-Blast, BENGIVUITTON, 52, QNJ57001.1, 99%,2e-78] SIF-HHPred: NKF SIF-Syn: NKF

Gene 52: SSC: 35901-33847 CP:yes SCS:Glimmer ST:SS BLAST-Start:[BengiVuitton 53, NCBI-BLAST, 1:1, 100%, 0.0] Gap:0 LO:yes RBS:[Kibler6, Karlin Medium, 3.009, -3.307, yes] F:ribonuceotide reductase SIF BLAST:[ribonucleotide reductase, NCBI-Blast, Bengivuitton, QNJ57002.1, 99%,
0.0] SIF-HHPred:[ribonuceoside triphosphate reductase, 1L1L\_B, 100, 92.0%] SIF-
Syn:[NKF, Bengivuitton, First]

Gene 53: SSC: 36104-35901 CP: yes SCS:Glimmer ST:SS BLAST-Start:[First, 0054, NCBI-Blast, 1:1, 100%, 8.0e-40] Gap: 0 LO: yes RBS:[Kibler6, Karlin Medium, 1.324, -6.026] F: hypothetical protein SIF-BLAST:[hypothetical protein, NCBI-Blast, First 52, YP\_007677462.1 ,98%, 8e-40] SIF-HHPred: [NKF] SIF-Syn:[NKF, BengiVuitton and First]

Gene 54:SSC: 36283-36101 CP:yes SCS:Glimmer ST:SS BLAST-Start:[First, 55, NCBI-BLAST, 1:1, 100%, 1.6e-35] Gap:0 LO:yes RBS:[Kibler6, Karlin Medium, 3.258, -2.095, yes] F:hypothetical protein SIF-BLAST:[hypothetical protein, NCBI-Blast, First 55, YP\_007677463.1, 98%, 2e-35] SIF-HHPred:NKF SIF-Syn:[NKF, Bengivuitton, First]

Gene 56. 37041-36280. CP:Yes SCS: Both ST:SS BLAST-Start: [Helix-turn-Helix DNABinding Domain Protein, QBLAST, 1:1, 100%, 0] Gap: -3 LO: Yes RBS: [Kibler6, KarlinMedium, 2.721, -3.437, yes] F:Helix-turn-Helix DNA Binding Domain SIF-BLAST:[Helix-turn-Helix DNA Binding Domain Protein, NCBI-Blast,BENGIVUITTON, N/A, QNJ57005.1, 99%, 0] SIF-HHPred: [RNA Polymerase sigma factor, HHPred, 5UXX\_A, 56.9%, 99.53] SIF-Syn: NKF

Gene 56: SSC:37190-37038 CP:Yes SCS:Both ST:SS BLAST-Start: [ST20ES\_58, QBLAST, 1:1,100%, 2.7e-27] Gap: -3 LO:Yes RBS: [Kibler 6, Karlin Medium, 2.117, -4.357, yes]F:NKF SIF-Blast: [NKF, NCBI-Blast, ST20ES\_58, YP\_009009104.1, 98%, 3e-27]SIF-HHPred: NKF SIF-Syn: NKF

Gene 57: SSC:37964-37194 CP: Yes SCS:Both ST: SS BLAST-Start: [Metallophosphoesterase QBLAST, 1:1, 100%, 0] Gap: 4 LO: Yes RBS: [Kibler 6, Karlin Medium, 1.438,-6.138, yes] F: Metallophosphoesterase SIF-BLAST: [Metallophosphoesterase,NCBI-Blast, First, N/A,YP\_007677466.1, 99%, 0] SIF-HHPred:[. phosphodiesterase, HHPred, 2AHD\_D, 92.57 1.5e-16] SIF-Syn: NKF.

Gene 58: SSC:38287-37961 CP:Yes SCS:Both ST: SS BLAST-Start: [PBI\_VA6, 58, QBLAST, 1:1,100%, 0] Gap: -3 LO: Yes RBS: [Kibler 6, Karlin Medium, 3.026, -3.095, yes]F: NKF SIF-BLAST: [NKF, NCBI-Blast, PBI\_VA6, 58,QJD51942.1, 99%, 2e-74]SIF-HHPred: NKF SIF-Syn: NKF

Gene 59: SSC:38388-38284 CP: Yes SCS: Both ST: SS BLAST-Start: [SEA\_LADYBIRD, 63,QBLAST, 1:1, 100%, 3.2e-15] Gap: -3 LO: Yes RBS: [Kibler 6, Karlin Medium, 2.960,-3.411, yes] F: NKF SIF-BLAST: [NKF, NCBI-Blast, SEA\_LADYBIRD, 63,YP\_009193690.1, 97%, 3e-15] SIF-HHPred: NKF SIF-Syn: NKF

Gene 60: SSC: 38927-38388, CP: Yes, SCS: Glimmer, ST: SS, BLAST-Start: [VA6, 60,NCBI-BLAST, 1:1, 100%, 0.0], Gap: 0, LO: Yes, RBS: [Kibler6, KarlinMedium, 1.188, -7.141,no], F: DNA primase, SIF-BLAST: [DNA primase, NCBI-BLAST, VA6, 60, QJD51944.1, 99%,2e-130], SIF-HHPred: [DNA primase, HHPred, 5VAZ\_A, 72%, 99.77], SIF-Syn: NKFGene

Gene 61: SSC: 39443-39309 CP: Yes, SCS: Glimmer, ST: SS, BLAST-Start: [LadyBird, 66,NCBI-BLAST, 1:1, 100%, 1.9e-22], Gap: 372, LO: Yes, RBS: [Kibler6, KarlinMedium, 3.162,-2.985, yes], F: NKF, SIF-BLAST: [hypothetical proteins, NCBI-BLAST, LadyBird, 66,YP\_009193693.1, 97%, 2e-22], SIF-HHPred: NKF, SIF-Syn: NKF

Gene 62: SSC: 39942-39469, CP: Yes, SCS: Glimmer, ST: SS, BLAST-Start: [BengiVuitton, 63,NCBI-BLAST, 1:1, 100%, 0.0], Gap: 26, LO: Yes, RBS: [Kibler6, KarlinMedium, 2.873, -2.828,yes], F: endonuclease VII, SIF-BLAST: [endonuclease VII, NCBI-BLAST, BengiVuitton, 63,QNJ57011.1, 99%, 4e-113], SIF-HHPred: [restriction endonuclease,HHPred, 3GOX\_A , 42%,99.85], SIF-Syn: NKF

Gene 63: SSC: 40027-39908, CP: Yes, SCS: Glimmer, ST: SS, BLAST-Start: [BengiVuitton, 64,NCBI-BLAST, 1:1, 100%, 1.8e-5], Gap: -34, LO: Yes, RBS: [Kibler6, KarlinMedium, 1.469,-5.732, yes], F: hypothetical protein, SIF-BLAST: [hypothetical protein, NCBI-BLAST,BengiVuitton, 64, QNJ57012.1, 97%, 2e-05], SIF-HHPred: NKF, SIF-Syn: NKF

Gene 64: SSC: 40863-40027, CP: Yes, SCS: Glimmer, ST: SS, BLAST-Start: [BengiVuitton, 65,NCBI-BLAST, 1:1, 100%, 0.0], Gap: 0, LO: Yes, RBS: [Kibler6, KarlinMedium, 0.824, -7.080,no], F: esterase, SIF-BLAST: [esterase, NCBI-BLAST, BengiVuitton, 65, QNJ57013.1, 99%,3e-161], SIF-HHPred: [AB hydrolase fold protein, HHPred, 6L7M\_B, 32%, 100], SIF-Syn: NKF

Gene 65: SSC: 41090-40860 CP: Yes SCS: Glimmer ST: Yes BLAST-Start: [VA6,66,NCBI-BLAST, 1:1 ,100%, 0] Gap: -3 LO: Yes RBS: [Kibler6, Karlin Medium, 2.930, -2.786, Yes] F: NKF,SIF-BLAST: NKF, SIF-HHPred: NKF, SIF-Syn: NKF.

Gene 66: SSC: 41537-41328, CP: Yes, SCS: Glimmer, ST: Yes, BLAST-Start:[BengiVuitton,67,NCBI-BLAST, 1:1 , 100%, 0] Gap: 148 LO: Yes, RBS: [Kibler6, Karlin Medium,2.855, -2.945, Yes], F: helix-turn-helix DNA Binding Domain, SIF-BLAST:[helix-turn-helix DNA Binding Domain Protein, NCBI-Blast, BengiVuitton, 67, QNJ57015.1, 99%,8e-67], SIF-HHPred: NKF, SIF-Syn: NKF.

Gene 67: SSC: 41565-42371 CP: Yes, SCS: Both, ST: Yes, BLAST-Start:[20ES,70,NCBI-BLAST, 1:1 ,100%, 0] Gap: 28, LO: Yes RBS: [Kibler6, Karlin Medium, 3.105, -2.804, Yes] F: DNAB-like like ds helicase, SIF-BLAST: [AAA Family ATPase, NCBI-Blast, First, 67, YP\_007677477.1,99%, 0] SIF-HHPred: [DNAB like ds DNA helicase, PDB, SPP1, 3BH0, 95.2%, 99.88],
SIF-Syn: NKF.

Gene 68. SSC: 42510 -42382CP: Yes, SCS: Both, ST: Yes, BLAST-Start:[20ES,71,NCBI-BLAST, 1:1 ,100%, 0] Gap: 11 LO: Yes, RBS: [Kibler6, Karlin Medium, 1.736, -5.238, Yes] F: NKF,SIF-BLAST: NKF, SIF-HHPred: NKF, SIF-Syn: NKF.

Gene 69: SSC: 42746-42507 CP: Yes SCS: Both ST: SS BLAST-Start: [BengiVuitton, 70, NCBI-BLAST,1:1, 100%, 0.0] Gap: 3 LO: No RBS: [Kibler6, Karlin Medium, 3.009, -3.307, no] F: NKFSIF-BLAST: [NKF] SIF-HHPred: [NKF] SIF-Syn: [NKF]

Gene 70: SSC: 42969-42775 CP: Yes SCS: Both ST: SS BLAST-Start: [Drake55, 73, NCBI-BLAST, 1:1,100%, 1.3e-40] Gap: 29 LO: No RBS: [Kibler6, Karlin Medium, 2.196, -4.331, no] F: NKFSIF-BLAST: [NKF] SIF-HHPred: [NKF] SIF-Syn: [NKF]

Gene 71: SSC: 43163-42966CP: Yes SCS: Both ST: SS BLAST-Start: [LadyBird, 76, NCBI-BLAST, 1:1,100%, 2.2e-29] Gap: -3 LO: No RBS: [Kibler6, Karlin Medium, 3.009, -3.307, no] F: NKFSIF-BLAST: [NKF] SIF-HHPred: [NKF] SIF-Syn: [NKF]

Gene 72: SSC: 43212-44108 CP: Yes SCS: Both ST: SS BLAST-Start: [BengiVuitton, 73, NCBI-BLAST,1:1, 100%, 0.0] Gap: 49 LO: Yes RBS: [Kibler6, Karlin Medium, 2.828, -3.767, yes] F: RecB-like protein SIF-BLAST: [RecB-like protein, NCBI-BLAST, BengiVuitton, 73,QNJ57021.1, 99%, 0.0] SIF-HHPred: [Exonuclease, HHPred, Escherichia coli, 3H4R\_A,75.92%, 99.71] SIF-Syn: [NI].

Gene 73: SSC: 44518-44105 CP: Yes SCS: Both ST: SS BLAST-Start: [BengiVuitton, 74, NCBI-BLAST,1:1, 90.5%, 0.0] Gap: 3 LO: No RBS: [Kibler6, Karlin Medium, 1.885, -5.497] F: NKF SIF-BLAST: [NKF] SIF-HHPred: [NKF] SIF-Syn: [NKF]

Gene 74: SSC: 45154-44579 45154-44579, CP: No, SCS: Glimmer, ST: SS,
 BLAST-Start;[BengiVuitton, 75, NCBI-BLAST, 1:1, 100%, 0] Gap 240 LO: yes [Kibler6, Karlin Medium, 2.607, -3.326, yes] F:NKF SIF-BLAST: NKF SIF: HHpred [NKF] SIF-Syn: [NKF]

Gene 75: SSC: 45562-45395 CP: Yes, SCS: Glimmer, ST: SS, BLAST-Start;
 [BengiVuitton, 76, NCBI-BLAST, 1:22, 61.7%, 4.9e-14], Gap; 30, LO: No, RBS: [Kibler6, Karlin Medium, 3.183, -3.214, Yes] F:NKF SIF-BLAST: NKF SIF: HHpred [NKF] SIF-Syn: [NKF]

Gene 76: SSC: 45856-45692 CP: Yes, SCS: Glimmer, ST: SS, BLAST-Startt;
 [BengiVuitton, 77, NCBI-BLAST, 1:1, 100%, 1.4e-30] Gap; 3, LO: Yes, RBS: [Kibler6, Karlin Medium, 2.324, -4.061, Yes] F:NKF SIF-BLAST: NKF SIF: HHpred [NKF] SIF-Syn: [NKF]

Gene 77: SSC: 45999-45859, CP: Yes, SCS: Glimmer, ST: NA, BLAST-start: [BengiVuitton, 78,NCBI-BLAST, 1:1, 100.0%, 2.6e-23], Gap: 0, LO: No, RBS: [Kibler6, Karlin Medium, 3.105,-2.276, no], F: NKF, SIF-BLAST: NKF, SIF-HHPred: NKF, SIF-Syn: NKF

Gene 78: SSC: 46271-45996, CP: Yes, SCS: Neither, ST: NI, BLAST-Start: [Ladybird, 83, NCBI-Blast,1:1, 100%, 8e-61], Gap: -3, LO: No, RBS: [Kibler6, Karlin Medium, 3.077, -2.661, yes], F:NKF, SIF-BLAST: NKF, SIF-HHPred: SIF-Syn: NKF

Gene 79: SSC: 46546-46274, CP: No, SCS: Both, ST: SS, BLAST-Start: [BengiVuitton, 80, 1:1, 98.89%,1e-56], Gap: 3, LO: No, RBS: [Kibler6, Karlin Medium, -5.494, 2.100, No], F: NKF,SIF-BLAST: NKF, SIF-HHPred: NKF, SIF-Syn: NKF

Gene 80: SSC: 46776-46543, CP: Yes, SCS: Glimmer, ST: NI, BLAST-start: [Anselm, 77, NCBI-BLAST,98.0%, 0.0], Gap: 3, LO: Yes, RBS: [Kibler6, Karlin Medium, 2.132, -4.406, Yes], F: NKF, SIF-BLAST:[NKF], SIF-HHPred: [NKF], SIF-Syn: [NKF]

Gene 81: SSC: 46907-46785 CP: Yes, SCS: Both, ST: SS, BLAST-Start: [Ladybird, 86, NCBI-Blast, 1:1,100%, 1e-19], Gap: 9, LO: yes, RBS: [Kibler6, Karlin Medium, 2.052, -4.742, yes], F: NKF,SIF-BLAST: NKF, SIF-HHPred: NKF, SIF-Syn: NKF

Gene 82: SSC: 47035-46907, CP: Yes, SCS: Both, ST: SS, BLAST-Start: [Bengivuitton, 83, NCBI-Blast,2:3, 100%, 6e-18], Gap: 0, LO: yes, RBS: [Kibler6, Karlin Medium, 2.595, -3.682, No], F: NKF,SIF-BLAST: NKF, SIF-HHPred: NKF, SIF-Syn: NKF

Gene 83:SSC: 47196-47035, CP: Yes, SCS: Both-GL, ST: SS, BLAST-Start: [BengiVuitton, 84,NCBI-Blast, 1:1, 100%, 4e-30], Gap: -6; LO: No, RBS: [Kibler6, Karlin Medium, 2.855, -3.155,Yes], F: NKF, SIF-BLAST: NKF, SIF-HHPred: NKF, SIF-Syn: NKF

Gene 84:SSC: 47519-47190 CP: Yes, SCS: Both-GL, ST: SS, BLAST-Start: [BengiVuitton, 85,NCBI-Blast, 2:1, 100%, 7.6e-40], Gap: -3, LO: Yes, RBS: [Kibler6, Karlin Medium, 2.196,-4.541, Yes], F: NKF, SIF-BLAST: NKF, SIF-HHPred: NKF, SIF-Syn: NKF

Gene 85:SSC: 48274-47516, CP: Yes, SCS: Both, ST: SS, BLAST-Start: [BengiVuitton, 86,NCBI-BLAST, 1:1, 100%, 0.0] Gap: -3, LO: Yes, RBS: [Kibler6, Karlin Medium, 2.599, -3.342,Yes], F: NKF, SIF-BLAST: NKF, SIF-HHPred: NKF, SIF-Syn: NKF

Gene 86:SSC: 48408-48274, CP: Yes, SCS: Both, ST: NA, BLAST-Start: [First, 0086, NCBI-Blast, 1:1,100%, 2e-8], Gap: 0, LO: No, RBS: [Kibler6, Karlin Medium, 1.874, -5.286, Yes], F: NKF,SIF-BLAST: NKF, SIF-HHPred: NKF, SIF-Syn: NKF

Gene 87:SCC: 48709-48419, CP: Yes, SCS: Glimmer, ST: SS, BLAST-Start: [BengiVuitton, 88, NCBI-BLAST, 1:6, 95%, 1.2e-39], Gap: 11, LO: No, RBS: [Kibler6, Karlin Medium, 2.367, -3.831, yes], F: [NKF], SIF-BLAST [NKF], SIF-HHPred [NKF], SIF-Syn: [NKF]

Gene 88:SSC: 49202-48777, CP: Yes, SCS: Glimmer, ST:SS, BLAST-start: [BengiVuitton, 89, NCBI-Blast, 1:1, 100%, 0.0e0], Gap: 68, LO: No, RBS: [Kibler6, Karlin Medium, 2.520, -3.589, yes], F: [NKF], SIF-Blast:[NKF], SIF-HHPred[NKF], SIF-syn: [NKF]

Gene 89:SSC: 49570-49223, CP: Yes, SCS: Glimmer, ST: SS, BLAST-Start: [BengiVuitton, 90, NCBI-BLAST, 1-1, 100%, 0.0], Gap: 21, LO: Yes, RBS: [Kibler6, Karlin Medium, 2.520, -4.161, yes], F: NKF, SIF-
BLAST: [NKF], SIF-HHPred: [NKF], SIF-Syn: [NKF]

Gene 90:SSC:49773-49567, CP: Yes, SCS: Glimmer, ST: SS, BLAST-Start: [LadyBird, 93, NCBI-BLAST, 1:1, 100%, 5.3E-32], Overlap: 3, LO: no, RBS: [Kibler6, Karlin Medium, 2.520, -3.589, yes], F: NKF, SIF-BLAST: [NKF], SIF-HHPred: [NKF], SIF-Syn: [NKF]

Gene 91 SSC: 50032-49826 CP: yes, SCS: Glimmer, ST:SS, BLAST-Start: [BengiVuitton, 92, NCBI-BLAST, 1:1, 100%, 1.4E-41], Gap: 53, LO: No, RBS: [Kibler6, Karlin Medium, 2.520, -3.571, No], F: NKF,
SIF-BLAST: [NKF], SIF-HHPred: [NKF], SIF-Syn: [NKF]

Gene 92 :SSC: 50280-50032, CP: yes, SCS: Both, ST:SS, BLAST-Start; [Drake55, 92, NCBI-Blast, 1:1,100%, 1.2e-39], Gap; 0, LO: No, RBS: [Kibler6, Karlin Medium, 2.520, -4.161, No], F: NKF,SIF-BLAST: NKF, SIF-HHPred: NKF, SIF-Syn: NKF

Gene 93:SSC: 51002-50289, CP: Yes, SCS: Glimmer, ST: SS, BLAST-Start: [BengiVuitton, 94, NCBI-BLAST, 2:1, 100%, 0.0], Gap: 9, LO: Yes, RBS: [Kibler6, Karlin Medium, 2.411, -5.042, yes], F: NKF, SIF-BLAST: [NKF], SIF-HHPred: [NKF], SIF-Syn: [NKF]

Gene 94:SSC: 51396-51106, CP: Yes, SCS: Glimmer, ST:SS, BLAST-start: [BengiVuitton, 95, NCBI-Blast, 1:1, 100%, 0.0e0], Gap: 4, LO: Yes, RBS: [Kibler6, Karlin Medium, 2.599, -3.422, yes], F: [NKF], SIF-Blast:[NKF], SIF-HHPred[NKF], SIF-syn: [NKF]