

The SEED Viewer

SEED Viewer version 2.0

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|----------------|-------------------|---|------|--|---------------|
| Mark region in | n Genome | Browser | | | |
| | | 1 48292 cov 15.609924 hit #1 | | | |
| | | 1 48292 cov 15.609924 hit #2 | | | |
| | | 1 48292 cov 15.609924 hit #3 | | | |
| | | 1 48292 cov 15.609924 hit #4 | | | |
| Contig NODE | 30 length | 1 48292 cov 15.609924 hit #5 | | | |
| | | 1 48292 cov 15.609924 hit #6 | | | |
| | | <u>1 48292 cov 15.609924 hit #7</u> | | | |
| | | 1 48292 cov 15.609924 hit #8 | | | |
| Contig NODE | <u>30 lengtl</u> | 1 48292 cov 15.609924 hit #9 | | | |
| | | | | | |
| | | 15.396226 hit #1 | | | |
| | | 1 62334 cov 15.396226 hit #2 | | | |
| | | 1 62334 cov 15.396226 hit #3 | | | |
| Contig NODE | <u> 27 iengtr</u> | 1 62334 cov 15.396226 hit #4 | | | |
| Contia NODE | 23 length | n_71673_cov_15.369161 hit #1 | | | |
| | | 71673 cov 15.369161 hit #2 | | | |
| | | 71673 cov 15.369161 hit #3 | | | |
| | | 71673 cov 15.369161 hit #4 | | | |
| | | 71673 cov 15.369161 hit #5 | | | |
| | | 71673 cov 15.369161 hit #6 | | | |
| Contig NODE | 23 length | 71673 cov 15.369161 hit #7 | | | |
| Contig NODE | 23 length | 71673 cov 15.369161 hit #8 | | | |
| | | | | | |
| | | 566821 cov 8.393009 hit #1 | | | |
| | | 566821 cov 8.393009 hit #2 | | | |
| | | 566821 cov 8.393009 hit #3 | | | |
| | | 566821 cov 8.393009 hit #4 | | | |
| | | 566821 cov 8.393009 hit #5 | | | |
| | | 566821 cov 8.393009 hit #6 | | | |
| | | 566821 cov 8.393009 hit #7 | | | |
| | | 566821 cov 8.393009 hit #8 | | | |
| | | 566821 cov 8.393009 hit #9 566821 cov 8.393009 hit #10 | | | |
| | | 566821 cov 8.393009 hit #11 | | | |
| | | 566821_cov_8.393009 hit #12 | | | |
| | | 566821_cov_8.393009 hit #13 | | | |
| | | 566821_cov_8.393009 hit #14 | | | |
| | | 566821 cov 8.393009 hit #15 | | | |
| | | 566821 cov 8.393009 hit #16 | | | |
| | | | | | |
| | | <u>1203_cov_15.188662 hit #1</u> | | | |
| Contig NODE | <u>42 lengtl</u> | <u>1203_cov_15.188662 hit #2</u> | | | |
| Contia NODE | 43 lenath | n 1096 cov 31.518060 hit #1 | | | |
| | | | | | |
| Contig NODE | <u>57 lengtl</u> | <u> 464 cov 11.741840 hit #1</u> | | | |
| Contig NODE | 57 lengtl | <u> 464_cov_11.741840 hit #2</u> | | | |
| | | | | | |
| | | 1 430 cov 16.871287 hit #1 | | | |
| | | 1 430 cov 16.871287 hit #2 | | | |
| Contig NODE | <u>or length</u> | 1 430 cov 16.871287 hit #3 | | | |
| Carrie NODE | 70 1 | - 200 12 044620 hit #4 | | | |

Contig NODE 72 length 369 cov 12.644628 hit #1

```
Contig NODE 72 length 369 cov 12.644628 hit #2
Contig NODE 14 length 153665 cov 8.989794 hit #1
Contig NODE 14 length 153665 cov 8.989794 hit #2
Contig NODE 14 length 153665 cov 8.989794 hit #3
Contig NODE 14 length 153665 cov 8.989794 hit #4
Contig NODE 14 length 153665 cov 8.989794 hit #5
Contig NODE 14 length 153665 cov 8.989794 hit #6
Contig NODE 16 length 96205 cov 11.645944 hit #1
Contig NODE 16 length 96205 cov 11.645944 hit #2
Contig NODE 3 length 470369 cov 9.494788 hit #1
Contig NODE 3 length 470369 cov 9.494788 hit #2
Contig NODE 3 length 470369 cov 9.494788 hit #3
Contig NODE 3 length 470369 cov 9.494788 hit #4
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Contig NODE 3 length 470369 cov 9.494788 hit #6
Contig NODE 3 length 470369 cov 9.494788 hit #7
Contig NODE 3 length 470369 cov 9.494788 hit #8
Contig NODE 3 length 470369 cov 9.494788 hit #9
Contig NODE 46 length 1018 cov 16.254770 hit #1
Contig NODE 4 length 398729 cov 7.868694 hit #1
Contig NODE 4 length 398729 cov 7.868694 hit #2
Contig NODE_4_length_398729_cov_7.868694 hit #3
Contig NODE_4_length_398729_cov_7.868694 hit #4
Contig NODE 4 length 398729 cov 7.868694 hit #5
Contig NODE 4 length 398729 cov 7.868694 hit #6
Contig NODE 4 length 398729 cov 7.868694 hit #7
Contig NODE 4 length 398729 cov 7.868694 hit #8
Contig NODE 32 length 43518 cov 20.448595 hit #1
Contig NODE 32 length 43518 cov 20.448595 hit #2
Contig NODE 32 length 43518 cov 20.448595 hit #3
Contig NODE 10 length 222279 cov 9.401747 hit #1
Contig NODE 12 length 196820 cov 8.472076 hit #1
Contig NODE 12 length 196820 cov 8.472076 hit #2
Contig NODE 12 length 196820 cov 8.472076 hit #3
Contig NODE 11 length 214047 cov 8.768119 hit #1
Contig NODE 11 length 214047 cov 8.768119 hit #2
Contig NODE 11 length 214047 cov 8.768119 hit #3
Contig NODE 11 length 214047 cov 8.768119 hit #4
Contig NODE 8 length 247549 cov 9.773464 hit #1
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Contig NODE 8 length 247549 cov 9.773464 hit #4
Contig NODE 8 length 247549 cov 9.773464 hit #5
Contig NODE 22 length 75116 cov 9.737735 hit #1
Contig NODE 22 length 75116 cov 9.737735 hit #2
Contig NODE 31 length 45171 cov 18.968520 hit #1
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Contig NODE 31 length 45171 cov 18.968520 hit #3
Contig NODE 2 length 478638 cov 9.783182 hit #1
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Contig NODE 2 length 478638 cov 9.783182 hit #4
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Contig NODE 2 length 478638 cov 9.783182 hit #6
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Contig NODE 2 length 478638 cov 9.783182 hit #8
Contig NODE 37 length 21672 cov 17.473938 hit #1
Contig NODE 18 length 93281 cov 10.372534 hit #1
Contig NODE 9 length 237731 cov 8.189807 hit #1
Contig NODE 9 length 237731 cov 8.189807 hit #2
Contig NODE 9 length 237731 cov 8.189807 hit #3
Contig NODE 9 length 237731 cov 8.189807 hit #4
Contig NODE 5 length 361067 cov 9.330210 hit #1
Contig NODE 26 length 62505 cov 11.128427 hit #1
Contig NODE 26 length 62505 cov 11.128427 hit #2
Contig NODE 25 length 69837 cov 10.709066 hit #1
Contig NODE 25 length 69837 cov 10.709066 hit #2
Contig NODE 13 length 165527 cov 10.023307 hit #1
Contig NODE 7 length 272670 cov 9.299336 hit #1
Contig NODE 7 length 272670 cov 9.299336 hit #2
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Contig NODE 7 length 272670 cov 9.299336 hit #4
Contig NODE 6 length 356231 cov 9.759612 hit #1
BLASTN 2.2.26 [Sep-21-2011]
Reference:
Altschul, Stephen F., Thomas L. Madden, Alejandro A. Schäffer,
Jinghui Zhang, Zheng Zhang, Webb Miller, and David J. Lipman (1997),
"Gapped BLAST and PSI-BLAST: a new generation of protein database search
programs", Nucleic Acids Res. 25:3389-3402.
Query= CP000965.1
         (64,537 letters)
Database: /vol/rast-prod/jobs/697071/rp/573.23855/contigs
           128 sequences; 5,874,982 total letters
Searching......done
                                                                  Score
                                                                           Ε
                                                                  (bits) Value
Sequences producing significant alignments:
NODE_30_length_48292_cov_15.609924
                                                                      9.573e+04
                                                                                  0.0
NODE_27_length_62334_cov_15.396226
                                                                      1.624e+04
                                                                                  0.0
NODE_23_length_71673_cov_15.369161
                                                                      9898
                                                                             0.0
NODE 1 length 566821 cov 8.393009
                                                                      4783
                                                                             0.0
NODE_42_length_1203_cov_15.188662
                                                                      2385
                                                                             0.0
NODE_43_length_1096_cov_31.518060
                                                                      2173
                                                                             0.0
NODE 57 length 464 cov 11.741840
                                                                             0.0
                                                                       920
NODE 61 length 430 cov 16.871287
                                                                       852
                                                                             0.0
NODE 72 length 369 cov 12.644628
                                                                       731
                                                                             0.0
NODE 14 length 153665 cov 8.989794
                                                                       498
                                                                             e-139
NODE 16 length 96205 cov 11.645944
                                                                       438
                                                                             e - 121
NODE 3 length_470369_cov_9.494788
                                                                             2e-98
                                                                       <u> 363</u>
NODE 46 length_1018_cov_16.254770
                                                                             4e-65
NODE 4 length 398729 cov 7.868694
                                                                             7e-30
                                                                       135
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| NODE_32_length_43518_cov_20.448595 NODE_10_length_222279_cov_9.401747 NODE_12_length_196820_cov_8.472076 NODE_11_length_214047_cov_8.768119 NODE_8_length_247549_cov_9.773464 NODE_22_length_75116_cov_9.737735 NODE_31_length_45171_cov_18.968520 NODE_2_length_478638_cov_9.783182 NODE_37_length_21672_cov_17.473938 NODE_18_length_93281_cov_10.372534 NODE_9_length_237731_cov_8.189807 NODE_5_length_361067_cov_9.330210 NODE_5_length_62505_cov_11.128427 NODE_25_length_69837_cov_10.709066 NODE_13_length_165527_cov_10.023307 NODE_7_length_272670_cov_9.299336 NODE_6_length_356231_cov_9.759612 | 80 56 54 48 46 42 40 38 38 38 36 36 36 36 | 4e-13 5e-06 2e-05 2e-05 0.001 0.005 0.079 0.31 1.2 1.2 1.2 4.9 4.9 4.9 |
|---|--|--|
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| Query: 11137 acgcaggaatgactggttgcagtggatatcgctggcgtctgaatgtgatgtgccga | | |
| Query: 11197 gaaaaacgcagcgaaaaccatcaaaaaacggttattcggaatattgaatgcgatgc | ĪШ | |
| Query: 11257 tcgggtctcgaatggtaatgcagaggcgctgaacagcaagatcagactgctgaggaggcgctgaacagcaagatcagactgctgaggaggctts: 181 tcgggtctcgaatggtaatgcagaggcgctgaacagcaagatcagactgctgaggaggagagaga | | |
| Query: 11317 ggccaggggataccgaaaccgggagcgctttaagctgggagtgatgttccacaatg | ĪШ | |
| Query: 11377 actgaatatggcgttctgagtcttcccaccatgaccggggaagacccattcataca | | |
| Query: 11437 atttgccgaagggaaacacgatgaagttaatcgtgtggtatcagaagccagtataa | | |
| Query: 11497 gatccctttgttcaaagagcgatgccctacgacgggttttccgtcgtaggctgcag | | |
| Query: 11557 catagtgtatgaactagagctgctcaaatacggcattaactagcatcactccgcct | attt | 11616 |

| • | | | |
|------------------|-------|--|--------------|
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| Query: Sbjct: | | aggtgggaccgtggtcccaggcagcattccggcgctgacggcgcaggtgggaccatggtc | 11736 660 |
| Query: Sbjct: | | ccaggaagagttccagtactgacggcataggtgggaccgtggtcccaggcagaattccgg | |
| Query: Sbjct: | | cactgacggcgcaggtgggaccgtggtcccaggcagagttccggcgctgacggcgcaggt | |
| Query: Sbjct: | | gggaccgtggtcccaggcagaattccggcactgacggcgcaggtgggaccgtggtcccag | 11916 840 |
| Query: Sbjct: | | gcagaattccgacgctgacggtgaaggtgggaccgtgtctcaggcagagttccggtactg | |
| Query: Sbjct: | | acggtgaaggtgggaccgtggtcccaggctgacaagatgaaggccaggtgatcaaaactg | |
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| Query: Sbjct: | | tttcttctgatcgtggagagtcgcggcctgctgcttcagtaattcctctttatctgcaaa | |
| Query: | 12397 | ${\tt agctttctgaagggcttcacctgaccgggcagacaattcaccgggatgagagaaaagggc}$ | 12456 |

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| Sbjct: | 1321 | | 1380 |
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| Query: 13657 atgatatcaaggccaggccagcaggtgggttttatcgcataactggcatcatccttttca 1375 | |
| Query: 13717 ccaagataaaagggcaggaggagtatcttccgcgtgtatatgaagatcgggcacccatccg 1377 | |
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| Query: 13837 ttcagggccaggtcctgagccaagtgaacagaaacggaggttttgtaaaccccgccttta 1389 | |
| Query: 13897 tgagcggcaacaccgatcactggtggaaaagcatcttctgcacgccgcagtcgggtaccg 1399 | |
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| Query: 14017 ccacgggtttccatatccgggtggggtaaccggccggctttctctgcatccctgattgcc 1407 | |

| Query: 14077 Sbjct: 3001 | tgagaagaaacgccaaccagatccgccgcttcacctattctccagcggcgtgtgatcttc | |
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| Query: 14197 Sbjct: 3121 | ccagcagtaatgcactggttaagtgtgtccatcagtcccattctgagcatcctttaatca | |
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| Query: 14377 Sbjct: 3301 | aaatcacataccgcagtcaatatttctcactaccgctcgccgcagaaagcggaaaagcac | |
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| Query: 14737 Sbjct: 3661 | attgagatcctaaagagatccccggatcgctgaagcaggcgccgtgactggcctgaacgt | |
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| Query: 15037 Sbjct: 3961 | agtactgtgcagccggtagcgctcatgaggctcggtctcttcgttccaaccctgaaatca | |
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| Query: 15637 Sbjct: 4561 | tccatgaaacgtatgcgggacaggctgaatctcacctcaaatgtctatacgcagaaccac | |
| Query: 15697 | acggtccgaaaggcgatggagcagttgcgggatatcggctatctggattacaccgagttt | 15756 |

| Sbjct: 4621 | acggtccgaaaggcgatggagcagttgcgggatatcggctatctggattacaccgagttt | 4680 |
|-----------------------------|--|-------|
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| Query: 16057 Sbjct: 4981 | gcaagtgaagaacggacaatattgactgcagtatgttatttctggccagcatatgctgat | |
| Query: 16117 Sbjct: 5041 | attgactgcagtatgtaagtttagcgggggatgttagccggccagctgagtgctcttcac | |
| Query: 16177 Sbjct: 5101 | gtgactacatcccacagtcaatatttcagtacatgcccggtccgcactgaatgaa | |
| Query: 16237 Sbjct: 5161 | tcagcagagcattgatccccgcattgccgctaaaaccagtcctccaaagttcgctaatcc | |
| Query: 16297 Sbjct: 5221 | tgttgtaccgttgcccgactgcaatcgtaaagagaaacccgtcgctgtcagaaccacccc | |
| Query: 16357 Sbjct: 5281 | gggacgcagtcactgacgatatgttcttactgaataacgacaaggcttgccgggttggaa | |
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| Query: 16477 Sbjct: 5401 | cacagtaagttttattgtctgcggtatgaagatgccagctggtcacctgaggaccgggcc | |
| Query: 16537 | tgcttaatgcggatgatgtcatggtgcgataagaaggtgagggagaacgggatgcggtat | 16596 |

| Sbjct: | 5461 | | 5520 |
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Score = 460 bits (232), Expect = e-127
Identities = 235/236 (99%)
Strand = Plus / Plus
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Sbjct: 48177 gctgaaacaggccgaaaccggcactcgggtggaggaagtctgcagaaagatgggcatttc 48236

Score = 40.1 bits (20), Expect = 0.31
Identities = 32/36 (88%)

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Identities = 31/35 (88%)
Strand = Plus / Minus
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Score = 38.2 bits (19), Expect = 1.2
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Score = 460 \text{ bits } (232), \text{ Expect = } e-127
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Strand = Plus / Minus
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Strand = Plus / Minus
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          Sbjct: 25563 aacgggtcgatgcaacgctatccttaatcaaggg 25530
Score = 42.1 \text{ bits } (21), \text{ Expect} = 0.079
Identities = 27/29 (93%)
Strand = Plus / Plus
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Strand = Plus / Plus
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| Query: Sbjct: | | tggaggccaaggaaaaggatagctgccagaaatcatgatattgccgccacaccatactgg | |
| Query: Sbjct: | | cgggcaacgaccgagacggttattccgggttcaaaaatcttctgaaccatgtcgaattct | |
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| Query: Sbjct: | | agatctagggggagtttacaagttgcaacggtagtgtatatattctttcagctaattca | |

| Query: Sbjct: | ggtattactgatataatgctacaggttcgtatgttctactggataggtacatcttactgt | |
|------------------|--|--|
| Query: Sbjct: | ccaattgaaccaaggcagtcgcagttatgtagttacccttctgttcgagcggttgttcgg | |
| Query: Sbjct: | tgctcataatagggttttaactgtatttgaaattaatactgacaggtaccgtaaatttga | |
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| Query: Sbjct: | ctttaaggataaaactatgcaacgttgtctgcgggtagcgtggggaattgtgtttattt | |
| Query: Sbjct: | cgccttttcagtacgggctgaaactaaaatatacggcgatcagcgcgtcagcagctggtg | |
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| Query: Sbjct: | tttgccgcttttctctgccagctatcgccgtctgagcgtgcagttcacctatattcccgg | |
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| Query: 61585 Sbjct: 2041 | gcggcggtggcctgaacctttatcaggcaggcgtttggttttatgtcgggtggcggctac | |
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| Query: 61765 Sbjct: 2221 | ccaccgaattggagagcgccagcatcgaaatcatcactgaagtaataaacgtgaggacaa | |
| Query: 61825 Sbjct: 2281 | tcagcattaattttgttcccagcgagttaatcgggataaacgcagtgagcaggtgaaaaa | |
| Query: 61885 Sbjct: 2341 | cggagtagtggagaatataaacgccggtcattgttttgctaatggtagcgagaagggtct | |
| Query: 61945 Sbjct: 2401 | ctttaaactcgctatttttacgaaaacgcacgccgttggccgcaataaccaacaacaa | |
| Query: 62005 Sbjct: 2461 | ccaaaatataaatttgtgaaccggtcagaatgaacgcatttctgtcggccttaaacaggg | |
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| Query: 62185 Sbjct: 2641 | gctgaccggtcagataaaatagcagccaggtccacaggcggtactgcggcgccaggctta | |
| Query: 62245 Sbjct: 2701 | gcggatgaatatcagggtacaaagcggataaaagatcgtaaccatacgagagcagcagca | |
| Query: 62305 Sbjct: 2761 | gggagaacaccgtggcaaagaatgctgtgcgcctttggctgagccactcgataaccgggt | |
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| Query: Sbjct: | | tggcgagcaggcggcaggcggtcggggtccggacctttaatccgcacctcaatggcgctgt | |
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| Query: Sbjct: | | caatatagcgatcaacatgctgcgttagggctgcaattttgcgctgatcgtccatgcgca | |
| Query: | 64045 | ${\tt ccatgatttgcgcatagttgctgtactgccgttgtccgctataggtgaggataaaccgca}$ | 64104 |

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Identities = 788/799 (98%)
Strand = Plus / Plus
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Query: 9150 tgtttttgggccagggtca 9168
       Sbjct: 781 tgtttttggaccagggtca 799
Score = 297 bits (150), Expect = 8e-79
Identities = 153/154 (99%)
Strand = Plus / Minus
Query: 11077 ccagtgctggacactgaaagagctggccaaaaatatctgggatcgccctggagcacaga 11136
        Sbjct: 71673 ccagtgctggacactgaaagagctggccaaaaatatctgggatcgccctggagcacaga 71614
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Sbjct: 181 tttactgtctggaagtcctcaacctgcgcaaaaagcgcccccgcaggcatgtcagtgcag 240

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Sbjct: 71553 gaaaaacacagcgaaaaccatcaaaaaacggtta 71520

Score = 210 bits (106), Expect = 1e-52
Identities = 556/706 (78%)
Strand = Plus / Minus

Query: 42397 atgaaatcagatgttcaacttaatcttagagccaaggaatcacagcgggcgctcattgac 42456 Sbjct: 49892 atgaaatcagatgttcaactcaacctaagagctaaagagtctcagagggcactcatcgat 49833 Query: 42457 gctgctgcggaaattcttcacaaatcacgaacagacttcatcctggaaatggcctgtcag 42516 Sbjct: 49832 gccgctgcagaaatccttcataaatcgcgaaccgacttcattcttgagatggcttgcaag 49773 Query: 42517 gccgctgagaatgtgatcctcgatcgccgggtctttaattttaacgatgaacaatatgcc 42576 Sbjct: 49772 gctgcagagaacgtgatccttgatcgtcgtgttttcaattttaacgacgaacagtatgct 49713 Query: 42577 gaattcatcgacatgcttgatgcccctgttgcagatgatcctgccatagataaactgctg 42636 Sbjct: 49712 gagttcatcgatatgctcaatgcaccagtcgaggatgagcttgccattaataaactactg 49653 Query: 42637 gcaaggaaacctcagtgggacgtgtaacagtaccagaacctttatccagcttttatcagg 42696 Sbjct: 49652 gcaaggaaacctcagtgggacgtataactgcgcccgagccgttatccagcgcccatcaac 49593 Query: 42697 tggcggaattcgtttgcggtgaaactgttctggatgactggttaaagcagaaaggcctca 42756 Sbjct: 49592 tggcagagttcgtcagtggggaaatggtactcgatgaatggttaaaacagagaagtttaa 49533 Query: 42757 aaaaccaggctctcggatcggccagaacgtttgtagtgtgtaaaaaagacacgaaacaag 42816 Sbjct: 49532 aaaatcaggcccttggcgctgcacgaacgttcgttgtttgcaagacgggtacgaagcaag 49473 Query: 42817 tagccggtttttactctctggccaccgggagcgtcaaccatacagaagcgacaggcaatc 42876 Sbjct: 49472 taactggtttttactctctggccaccggtagcgttaaccatacggaagcgacaggtagtc 49413 Query: 42877 ttcggcgtaacatgcccgatcccatccctgtcattatacttgcccgtcttgctgtcgatc 42936 Query: 42937 tctctttccgcggaaaagggcttggcgctgatttacttcatgatgcagtgcttcgttgct 42996 Sbjct: 49352 tttcattgcacggaaaaggggttggcgccgatttacttcacgatgcggttctacgctgtt 49293 Query: 42997 atcgggttgccgagaatattggtgtacgtgcaatcatggttcatgcactcaccgaagaag 43056

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Query: 43057 ctaaaaaatttctacattcaccatggtttcaaaccatcacaaactca 43102
          Sbjct: 49232 ccaaaggtttctatgctcaccatggatttaaggcatcgcaaactca 49187
Score = 89.7 bits (45), Expect = 4e-16
Identities = 51/53 (96%)
Strand = Plus / Minus
Query: 11371 tggaaaactgaatatggcgttctgagtcttcccaccatgaccggggaagaccc 11423
          Sbjct: 68024 tggaaaactgaatatggcgttctgagttttcccaccatgatcggggaagaccc 67972
Score = 65.9 bits (33), Expect = 5e-09
Identities = 90/109 (82%)
Strand = Plus / Minus
Query: 46970 cgcatggaagatagcgaaattgacgcactaatcgtgatggttaaagacttaatcggcgat 47029
          Sbjct: 70818 cgcatggatgattgcgaaatcgatgcgctgctcgcgatggttaaaaacttgatcggcgat 70759
Sbjct: 70758 gtaggcggttttctgggaaaagaagaatcacgcgcggaggtgggaaatg 70710
Score = 38.2 bits (19), Expect = 1.2
Identities = 53/63 (84%), Gaps = 1/63 (1%)
Strand = Plus / Minus
Query: 46881 gccatgagtgaattaaccgtccgacagtttgctgacaa-gcatatcaggcagaaatcatt 46939
          Sbjct: 70908 gccatgagtgaactcaccatccaacaggctgctgaaaaagcgtatcaggcagaaattatt 70849
Query: 46940 ctc 46942
          Sbjct: 70848 ctc 70846
Score = 36.2 bits (18), Expect = 4.9
Identities = 18/18 (100%)
Strand = Plus / Minus
Query: 34505 ggccacactattcgcctt 34522
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Sbjct: 51746 ggccacactattcgcctt 51729

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Score = 4783 bits (2413), Expect = 0.0
Identities = 3211/3468 (92%), Gaps = 18/3468 (0%)
Strand = Plus / Plus
Query: 24629 tgggggtatgtga-ttcaatatgaaaggcgaaacgcgccggaggcgtggctttgtcgctc 24687
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Query: 24688 ggcaggctgaaaaagctgacgaactgtatacttttctcggcatcgagcaggagatcgatg 24747
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| Query: 25588 attcataatctcagttcaaatagctgatcgctatgctgctggtggatgga | |
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| Query: 25708 atatactatagaattcagtacccgaacggtattgctttcttt | |
| Query: 25768 tcccatagtactgagtattgtttcaaggcacttatctataaagttgaggaaaagaaggga 25827 | |
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| Query: 26128 tgttatagctatggttcatataattcaggaaaaaattaaagatctttcattgccttctca 26187 | , |

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        Sbjct: 55040 tggatattgcatgccgaataattgaagatgatatgatttcttttctcatgattttatgct 55099
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Query: 26605 gttatcgatcattttaaactattttcctttgatttctaaatatgacaagattaggattat 26664
        Query: 26665 tcctagttccggtgtttttttaatgataaagaacagtatggaaatagattcctgtagatt 26724
        Sbjct: 55399 tcctagttccggtgttttttttaatggtaaagaacagtgtggaaatagattcctgtagatt 55458
Query: 26785 aaatgttaaaaaaaggactgcaatgattaccttgctaatgaaagtggtttttgtttcac 26844
        Sbjct: 55519 aaatgttaaagaaaagtattgcaatgattaccttgctaatgaagttggtttttgtttcac 55578
Query: 26845 ttcattaagcgataaagaaaaatcgatgtgtttcagaaacagatattgacaattgaaaa 26904
        Sbjct: 55579 ttcattaagcgataaagaaaaatcgatgtgtttaagaaacagatattgacaattgaaag 55638
Query: 26905 gcttgatgcatcagaattgaagttcaagccagtttcgttgaatgttgacagtcttattag 26964
             Sbjct: 55639 gcttgacacatcaaaattgaagttcaaaccagtttcgttgaatgttgatagtcttattag 55698
Query: 26965 cgattgtattttgaacgataaatatattggtgattacttaaaaaaaccaaaaaacattgc 27024
```

Sbjct: 54860 tgttatagctatggttcatataattcagaaaaaaattaaagatctttcattaccttctca 54919

```
Sbjct: 55699 cgattgtattttgaacgataaatatattggtgattacttaaaaaaaccaaaaaacattgc 55758
Query: 27025 ttttgagattaacgagcattttcatgaattcaatactaaatgctgtatggttgacttaaa 27084
       Sbjct: 55759 ttttgagattaacgagcattttcatgaattcaatactaaatgctctatggttgacttaaa 55818
Query: 27085 gtgtctttcaaagttgtgtccagtatggctggatgattttgggagtggcttaacaagctt 27144
       Sbjct: 55819 gtgtctttcaaaattgtgtccagtatggctggatgattttgggagcggcttaacaagctt 55878
Query: 27145 aacagttatagatatgtttgattttgaatgtataaaaaattgataaaagattacttctggga 27204
       Query: 27205 aatacagagtgagagcgaattctttaaaagaataaaataaaataaaatcatactgcaattt 27264
       Query: 27265 cgtgattgttgagggagttgagacaatagaacaaaaaataaagtacattctgttgttga 27324
       Sbjct: 55999 cgtgattgttgagggagttgagacaatagaacaaaaaataaagtacattctgttgttga 56058
Query: 27325 ttgcgcttgccagggaaggttgtggatgatgattactattatgttgagatttaaaataa 27384
       Sbjct: 56059 ttgcgcttgccagggaaggttgtggatgatgattactattatattgagatttaaaataa 56118
Query: 27505 attaatttgatatctatctgcacatctttactggtagcgctctttgggatcttgggttgtg 27564
       Sbjct: 56239 attaatttggtatctatcggtacgtctttactggtagcgctctttggaatcttagttgtg 56298
Query: 27565 tttctggtatctttcggtatcgggacatatattgctatcattgtgttctctcttatttta 27624
       Sbjct: 56299 tttctggtatctttcggtatcggtgcatatattactataattgcgctttctcttgttttt 56358
Query: 27625 tattttattatgaaaaggattctgaatataaaaggaagaaaaaaagggaagatggtttgg 27684
       Sbjct: 56359 tattttattatgaaaaagattctgtatgtaaaagaagaagaaaaaagggaagatggtttgg 56418
Sbjct: 56419 aaaagagcaataattacatggtagataattattaaaataatattatagtgatggcgcttt 56478
Query: 27744 caatgcaagcctcggattccgaggcttttttat----tttct-----tttcaaatcat 27792
       Sbjct: 56479 caatcaaagcctcgaatttcgaggcttttttatagtatttttataatgctttcaaagcat 56538
```

Query: 27853 attcactatccagatgagctgaaagactcaaagccggttatcaaaactgaaaatatacta 27912 Sbjct: 56599 attcactatccagatgagctgaaaaactcaaagccagttatcaaaactgaaaatatacta 56658 Query: 27913 atgaatttcaataggttagggcttagactaaaaacattaactacgtatcaaaaacacct- 27971 Sbjct: 56659 atgaatttcaataggttagggcttaggctaaaaacattaaccacatatcaaaaataccta 56718 Query: 27972 tttttctttttaaatcaataagtaatgatgttattagttaactactgctgcgccacatgc 28031 Sbjct: 56719 tttttctttttaaatcaataagtaataatgttattagttaactactgctgcgccatatgc 56778 Query: 28032 agtggttcgaagccgcagacctgatcgtcaaaggcatggaaggagcta 28079 Sbjct: 56779 agtggttcgaagccgcagacctgatcgtcaaaggcatggaaggcgcta 56826 Score = 170 bits (86), Expect = 1e-40 Identities = 107/114 (93%)Strand = Plus / Plus

Query: 28067 atggaaggagctaaactactgaaatgtagcgagtttgtcgacgagattatcgcgaacatg 28126 Sbjct: 56865 atggaaggcgctaaactgctgaaatgtagcgagtttggcgacgcgattatcgcgaacatg 56924 Query: 28127 taatcccattggtggattaagtaaaagtgggagccgatgggctcccgctttttt 28180 Sbjct: 56925 taatcccgttggtggattaagtaaaagcgggagccgatgggctcccgtttttt 56978

Score = 117 bits (59), Expect = 2e-24Identities = 62/63 (98%) Strand = Plus / Plus

Query: 28017 tgctgcgccacatgcagtggttcgaagccgcagacctgatcgtcaaaggcatggaaggag 28076 Sbjct: 20585 tgctgcgccacatgcagtggttcgaagccgcagacctgatcgtcaaaggcatggaaggcg 20644

Query: 28077 cta 28079 | | |

Sbjct: 20645 cta 20647

Score = 101 bits (51), Expect = 1e-19 Identities = 54/55 (98%) Strand = Plus / Plus

```
Query: 23011 aatatcacgaacatactactgacgcgctttacaccaccatgaccaccggtatggg 23065
          Sbjct: 45017 aatatcacgaacatactactgatgcgctttacaccaccatgaccaccggtatggg 45071
Score = 97.6 bits (49), Expect = 2e-18
Identities = 61/65 (93%)
Strand = Plus / Plus
Query: 28067 atggaaggagctaaactactgaaatgtagcgagtttgtcgacgagattatcgcgaacatg 28126
          Sbjct: 20686 atggaaggcgctaaactgctgaaatgtagcgagtttggcgacgcgattatcgcgaacatg 20745
Query: 28127 taatc 28131
          Sbjct: 20746 taatc 20750
Score = 83.8 bits (42), Expect = 2e-14
Identities = 66/74 (89%)
Strand = Plus / Plus
Query: 24506 actgacgcatggattttccgggctggcggcacgatttccaccggtaagggtgacgtcctg 24565
          Sbjct: 53224 actgatgcatggatcttccgcgctggcggcaccatttccactggcaaaggggacgtcctg 53283
Query: 24566 accaccggctcaga 24579
          Sbjct: 53284 accaccggctcaga 53297
Score = 77.8 bits (39), Expect = 1e-12
Identities = 54/59 (91%)
Strand = Plus / Plus
Query: 62787 cctcacgtactgcgtgtacgctccggttgttgcgcgctgtccgagtccaaactggctgc 62845
           Sbjct: 493176 cctcacgtactacgtgtacgctccggtttctgcgcgctgtccgtgttcaaactggctgc 493234
Score = 50.1 bits (25), Expect = 3e-04
Identities = 25/25 (100%)
Strand = Plus / Plus
Query: 28329 ttgatctgaacgagttgctcgttaa 28353
```

Score = 46.1 bits (23), Expect = 0.005
Identities = 23/23 (100%)
Strand = Plus / Plus

Query: 28331 gatctgaacgagttgctcgttaa 28353

Sbjct: 259538 gatctgaacgagttgctcgttaa 259560

Score = 44.1 bits (22), Expect = 0.020
Identities = 28/30 (93%)
Strand = Plus / Minus

Query: 26730 tagaaccatcttttaaaaaagatggttcta 26759

Sbjct: 55493 tagaaccatcttttttaaaagatggttcta 55464

Score = 42.1 bits (21), Expect = 0.079
Identities = 21/21 (100%)
Strand = Plus / Minus

Query: 29126 caacgtatgaatccatgcgcc 29146

Sbjct: 454792 caacgtatgaatccatgcgcc 454772

Score = 40.1 bits (20), Expect = 0.31
Identities = 23/24 (95%)
Strand = Plus / Plus

Query: 26606 ttatcgatcattttaaactatttt 26629

Sbjct: 74294 ttatcgatcactttaaactatttt 74317

Score = 40.1 bits (20), Expect = 0.31
Identities = 20/20 (100%)
Strand = Plus / Plus

Query: 27185 gataaagattacttctggga 27204

Sbjct: 74867 gataaagattacttctggga 74886

```
Score = 38.2 bits (19), Expect = 1.2
Identities = 19/19 (100%)
Strand = Plus / Minus
Query: 63132 atcagcatgccgctcaggc 63150
            1111111111111111111
Sbjct: 291970 atcagcatgccgctcaggc 291952
Score = 38.2 bits (19), Expect = 1.2
Identities = 22/23 (95%)
Strand = Plus / Minus
Query: 58881 caggacattgccgtctggctgca 58903
            Sbjct: 340043 caggacattgccggctggctgca 340021
Score = 36.2 bits (18), Expect = 4.9
Identities = 18/18 (100%)
Strand = Plus / Plus
Query: 13517 cgataacaatcacatcat 13534
            111111111111111111
Sbjct: 406731 cgataacaatcacatcat 406748
>NODE_42_length_1203_cov_15.188662
        Length = 1203
Score = 2385 bits (1203), Expect = 0.0
Identities = 1203/1203 (100%)
Strand = Plus / Plus
Query: 9032 gacaactggcgcagggaatataatcatgagagaacgcattcatcattaaatgacatgact 9091
           gacaactggcgcagggaatataatcatgagagaacgcattcatcattaaatgacatgact 60
Sbjct: 1
Query: 9092 ccggctgaattcatccgaagtctccggaaagacgaagatctctgatttagcactgcactg 9151
           Sbjct: 61
           ccggctgaattcatccgaagtctccggaaagacgaagatctctgatttagcactgcactg 120
Query: 9152 tttttgggccagggtcatcgtgtccgctttgtgctgtgagttaacgggtcgatgcaacat 9211
           Sbjct: 121
           tttttgggccagggtcatcgtgtccgctttgtgctgtgagttaacgggtcgatgcaacat 180
```

Query: 9212 tattcttaatcaagggagagtcccctccccctagccttccgcccgtcagtccctatcgt 9271

| Sbjct: | 181 | | 240 |
|------------------|-----|--|-----|
| Query: Sbjct: | | accgctggaggcgcgggtttctctcacaacatttctcgacacgtggcggtcaaatcggag | |
| Query: Sbjct: | | gcgtataggttcatccggaaacgcagcagatcaatcataacaacttcgctctcaatgttt | |
| Query: Sbjct: | | tcgtaagcatgacaatcatatggaataacggcgagcatcatcaacaaactgcgaccaggc | |
| Query: Sbjct: | | taacgtgattgcacggtactacccgaagagatgcgggagaaacactggagattccctctc | |
| Query: Sbjct: | | ccgattcacgagcgcagggataaaaagcaaaagcaggaatcgcaactcgatggccacgta | |
| Query: Sbjct: | | taaaggatcaagactgaagggagacgccgggtataaagctgagccggcgtcaatgacaag | |
| Query: Sbjct: | | tcggcactgatttaacagtagtgtgtcatctggcaggccatcagatctcactttctgagc | |
| Query: Sbjct: | | attaccggcgattaggcttatcactggtcacagagataccaatataaataccggttcccc | |
| Query: Sbjct: | | agataatttgtaagagtacaaatatccactgagggacctcaacaatcaacagaggaagga | |
| Query: Sbjct: | | gagcaaccgttacgattaaaatcaggcggctacctaatcgccgacgcaccggctcagcgg | |
| Query: Sbjct: | | cgtcaaccgggactccggcatatcacagaacttgccttaaaaccgttttcataatcactc | |
| Query: Sbjct: | | cagtgaaaataaatgcgcgtacttcagtatattatattttgttatgtaacggttctccgg | |
| Query: Sbjct: | | gcaggcagttatccttcggaaattgctctgttcttgcaggaacagcaaatggttacaggc | |

```
Query: 10052 aacgacaacaagatgacttgaaaaatgctgccttcgcaataacactgtattcatacgggt 10111
          aacgacaacaagatgacttgaaaaatgctgccttcgcaataacactgtattcatacgggt 1080
Query: 10112 cttccgttgttgtggtggctgaaggcatgataatggcgtattaaatcgccagaggtcacc 10171
          Sbjct: 1081
         cttccgttgttgtggtggctgaaggcatgataatggcgtattaaatcgccagaggtcacc 1140
Query: 10172 accatggacgaaaagtccctctatgcacatatcctcaacttgtcagctccgtggcaggta 10231
          accatggacgaaaagtccctctatgcacatatcctcaacttgtcagctccgtggcaggta 1200
Query: 10232 aag 10234
          | | |
Sbjct: 1201 aag 1203
Score = 264 bits (133), Expect = 1e-68
Identities = 136/137 (99%)
Strand = Plus / Plus
Query: 60207 gacaactggcgcagggaatataatcatgagagaacgcattcatcattaaatgacatgact 60266
          gacaactggcgcagggaatataatcatgagagaacgcattcatcattaaatgacatgact 60
Sbjct: 1
Query: 60267 ccggctgaattcatccgaagtctccggaaagacgaagatctctgatttagcactgcactg 60326
          ccggctgaattcatccgaagtctccggaaagacgaagatctctgatttagcactgcactg 120
Sbjct: 61
Query: 60327 tttttggaccagggtca 60343
          1111111 11111111
Sbjct: 121
         tttttgggccagggtca 137
>NODE_43_length_1096_cov_31.518060
       Length = 1096
Score = 2173 bits (1096), Expect = 0.0
Identities = 1096/1096 (100%)
Strand = Plus / Plus
Query: 10108 gggtcttccgttgttgtggtggctgaaggcatgataatggcgtattaaatcgccagaggt 10167
          gggtcttccgttgttgtggtggctgaaggcatgataatggcgtattaaatcgccagaggt 60
Sbjct: 1
Query: 10168 caccaccatggacgaaaagtccctctatgcacatatcctcaacttgtcagctccgtggca 10227
          caccaccatggacgaaaagtccctctatgcacatatcctcaacttgtcagctccgtggca 120
Sbjct: 61
Query: 10228 ggtaaagtctctttctctcgatgaaaatgccgcttctgttaccgttactgtcgcaatccc 10287
          Sbjct: 121
          ggtaaagtctctttctctcgatgaaaatgccgcttctgttaccgttactgtcgcaatccc 180
```

| Query: 1028 Sbjct: 181 | 8 tgaaaatactcagttaacctgtccagcctgcgggaaatcctgcccgttcacgatcaccg | |
|---------------------------|--|--|
| Query: 1034 Sbjct: 241 | 8 gcatcgtaaatggcgtcacctcgatacctgccagttcgccacaatagttgaagccagtat | |
| Query: 1040 Sbjct: 301 | 8 gccccgtgttatgtgtccgaagcatggatgccagactttgcctgttccgtgggcggggcc | |
| Query: 1046 Sbjct: 361 | 8 cggcagccggtatacgctgctgttcgaatcattcgtgctttcatggctgaaaatcagcac | |
| Query: 1052 Sbjct: 421 | 8 tgttgatgcagtcaggaaacaactcaaactgagctggaatgccgttgacggcattatgac | |
| Query: 1058 Sbjct: 481 | 8 ccgcgcggttaaacgagggcttgcacggataaaaaagccgttagcagcccggcatatgaa | |
| Query: 1064 Sbjct: 541 | 8 tgtggacgaggtcgcttttaaaaaaggacatcgttatataacggtgatctccgatcgtga | |
| Query: 1070 Sbjct: 601 | 8 cgggcgggcgctggctttaacggataatcgaggtaaggaaagtcttgccggttacctcag | |
| Query: 1076 Sbjct: 661 | 8 aaccctgactgatggacagctacaggctattaaaacgctctcaatggacatgaatgcggg | |
| Query: 1082 Sbjct: 721 | 8 ctatataagagccgcacgcatccacttaccgtgtgcagttgataaaatcgcctttgaccg | |
| Query: 1088 Sbjct: 781 | 8 cttccacgtagcgaaacagctgggtgaggtggtggataaaacccgccagaatgaacatcc | |
| Query: 1094 Sbjct: 841 | 8 ccgtcttccggttgaaagccgccgtcaggccaaaggtacccgcttcctgtggcagtacag | |
| Query: 1100 Sbjct: 901 | 8 cgacaaatggatgactgagtcccggcaggaaaagctgatgtggctgcgggaacagatgca | |
| Query: 1106 Sbjct: 961 | 8 gcagacaagccagtgctggacactgaaagagctggccaaaaatatctgggatcgcccctg | |

```
Sbjct: 1021
        gagcacagaacgcaggaatgactggttgcagtggatatcgctggcgtctgaatgtgatgt 1080
Query: 11188 gccgatgatgaaaaac 11203
        1111111111111111
Sbjct: 1081 gccgatgatgaaaaac 1096
>NODE_57_length_464_cov_11.741840
      Length = 464
Score = 920 bits (464), Expect = 0.0
Identities = 464/464 (100%)
Strand = Plus / Plus
Query: 8671 gtcggataacctgtttaacggacgacgtttccgggcgctgactgtagtggataattttag 8730
        Sbjct: 1
        gtcggataacctgtttaacggacgacgtttccgggcgctgactgtagtggataattttag 60
Query: 8731 tcgggagtgtgtggcgatccatgccggaaagtcgctgaaaggtgaggatgtggtcggtgt 8790
        tcgggagtgtgtggcgatccatgccggaaagtcgctgaaaggtgaggatgtggtcggtgt 120
Sbjct: 61
Query: 8851 cagcgagtttatttcgaagagtctggataaatgggcgtatgagcacggtgtcacaatgga 8910
        Sbjct: 181 cagcgagtttatttcgaagagtctggataaatgggcgtatgagcacggtgtcacaatgga 240
Query: 8911 cttctcccgccccggaaaaccaacggataacccgtttattgaatcatttaacggcagtct 8970
        Sbjct: 241 cttctcccgccccggaaaaccaacggataacccgtttattgaatcatttaacggcagtct 300
Query: 8971 gcgggatgaatgcctgaacattcactggtttctctcactggaagatgcgcaggacaaact 9030
        Sbjct: 301 gcgggatgaatgcctgaacattcactggtttctctcactggaagatgcgcaggacaaact 360
Query: 9031 cgacaactggcgcagggaatataatcatgagagaacgcattcatcattaaatgacatgac 9090
        Sbjct: 361 cgacaactggcgcagggaatataatcatgagagaacgcattcatcattaaatgacatgac 420
Query: 9091 tccggctgaattcatccgaagtctccggaaagacgaagatctct 9134
        Sbjct: 421 tccggctgaattcatccgaagtctccggaaagacgaagatctct 464
```

Query: 11128 gagcacagaacgcaggaatgactggttgcagtggatatcgctggcgtctgaatgtgatgt 11187

Score = 872 bits (440), Expect = 0.0
Identities = 458/464 (98%)
Strand = Plus / Plus

```
Query: 59846 gtcggataacctgtttaacggacgacgtttccgggcgctgactgtagtggataattttag 59905
        gtcggataacctgtttaacggacgacgtttccgggcgctgactgtagtggataattttag 60
Sbjct: 1
Query: 59906 tcgggagtgtgtgcgatccatgccggaaagtcgctgaaaggtgaggatgtggtcggtgt 59965
        Sbjct: 61
        tcgggagtgtgtggcgatccatgccggaaagtcgctgaaaggtgaggatgtggtcggtgt 120
Sbjct: 121
        Query: 60026 cagcgagtttatctcgaaaagtctggataaaatgggcgtatgagcacggtgttacaatgga 60085
        Sbjct: 181
        cagcgagtttatttcgaagagtctggataaatgggcgtatgagcacggtgtcacaatgga 240
Query: 60086 cttctcccgccccggaaaaccaacggataacccgtttattgaatcatttaacggcagtct 60145
        Sbjct: 241
        cttctcccgcccggaaaaccaacggataacccgtttattgaatcatttaacggcagtct 300
Query: 60146 gcgggatgaatgcctgaacattcactggtttctctctgctggaagatgcgcaggacaaact 60205
        Sbjct: 301
        gcgggatgaatgcctgaacattcactggtttctctcactggaagatgcgcaggacaaact 360
Query: 60206 cgacaactggcgcagggaatataatcatgagagaacgcattcatcattaaatgacatgac 60265
        cgacaactggcgcagggaatataatcatgagagaacgcattcatcattaaatgacatgac 420
Sbjct: 361
Query: 60266 tccggctgaattcatccgaagtctccggaaagacgaagatctct 60309
        tccggctgaattcatccgaagtctccggaaagacgaagatctct 464
Sbjct: 421
>NODE_61_length_430_cov_16.871287
      Length = 430
Score = 852 bits (430), Expect = 0.0
Identities = 430/430 (100%)
Strand = Plus / Plus
Query: 59242 atagcatttgcgctgaaacaggccgaaaccggcactcgggtggaggaagtctgcagaaag 59301
        Sbjct: 1
        atagcatttgcgctgaaacaggccgaaaccggcactcgggtggaggaagtctgcagaaag 60
Query: 59302 atgggcatttctgaagccacattttacaactggaagaaaaagtttggcggcatgggcgtg 59361
        atgggcatttctgaagccacattttacaactggaagaaaaagtttggcggcatgggcgtg 120
Sbjct: 61
Query: 59362 acagagctgcgccgcctgcgccagcttgaggaagaatcagcgtctgaaacgtctggtg 59421
        acagagctgcgccgcctgcgccagcttgaggaagagaatcagcgtctgaaacgtctggtg 180
Sbjct: 121
Query: 59422 gccgatttaagtctggacaaggagatgctgcaggaagttatcaaaaaaagttctgaggc 59481
        Sbjct: 181
```

```
Query: 59482 cggctcagaagcgtcaggcggtgcattttctgcggggaggcttaccgtatcagtgtccgac 59541
         Sbjct: 241
         \verb|cggctcagaagcgtcaggcggtgcatttctgcgggaggcttaccgtatcagtgtccgac| 300|
Query: 59542 ggggatgcggactgctgatgcagagcagaaccgtttaccactggcagagccggcgggatg 59601
         Sbjct: 301
         \tt ggggatgcggactgctgatgcagagcagaaccgtttaccactggcagagccggcgggatg \ 360
Query: 59602 atcgggcgataaccctgcgtatccgggaaatagcagaaacccggatccgctacggttgcc 59661
         Sbjct: 361
         atcgggcgataaccctgcgtatccgggaaatagcagaaacccggatccgctacggttgcc 420
Query: 59662 cgcgtattca 59671
         Sbjct: 421
         cgcgtattca 430
Score = 844 bits (426), Expect = 0.0
Identities = 429/430 (99\%)
Strand = Plus / Plus
Query: 8067 atagcatttgcgctgaaacaggccgaaaccggcactcgggtggaggaagtctgcagaaag 8126
        Sbjct: 1
        atagcatttgcgctgaaacaggccgaaaccggcactcgggtggaggaagtctgcagaaag 60
Query: 8127 atgggcatttctgaagccacattttacaactggaagaaaaagtttggcggcatgggcgtg 8186
        Sbjct: 61
        atgggcatttctgaagccacattttacaactggaagaaaaagtttggcggcatgggcgtg\ 120
Query: 8187 acagagctgcgcctgcgccagcttgaggaagagaatcagcgtctgaaacgtctggtg 8246
Sbjct: 121 acagagctgcgccgcctgcgccagcttgaggaagagaatcagcgtctgaaacgtctggtg 180
Sbjct: 181 gccgatttaagtctggacaaggagatgctgcaggaagttatcaaaaaaagttctgaggc 240
Query: 8307 cgactcagaagcgtcaggcggtgcattttctgcgggaggcttaccgtatcagtgtccgac 8366
        Sbjct: 241 cggctcagaagcgtcaggcggtgcattttctgcgggaggcttaccgtatcagtgtccgac 300
Query: 8367 ggggatgcggactgctgatgcagagcagaaccgtttaccactggcagagccggcgggatg 8426
        Sbjct: 301 ggggatgcggactgctgatgcagagcagaaccgtttaccactggcagagccggcgggatg 360
Query: 8427 atcgggcgataaccctgcgtatccgggaaatagcagaaacccggatccgctacggttgcc 8486
        Sbjct: 361 atcgggcgataaccctgcgtatccgggaaatagcagaaacccggatccgctacggttgcc 420
Query: 8487 cgcgtattca 8496
```

```
Score = 40.1 bits (20), Expect = 0.31
Identities = 23/24 (95%)
Strand = Plus / Minus
Query: 18275 gattctcttcctcaagctgccgca 18298
         Sbjct: 160
         gattctcttcctcaagctggcgca 137
>NODE_72_length_369_cov_12.644628
       Length = 369
Score = 731 bits (369), Expect = 0.0
Identities = 369/369 (100%)
Strand = Plus / Minus
Query: 8370 gatgcggactgctgatgcagagcagaaccgtttaccactggcagagccggcgggatgatc 8429
         Sbjct: 369 gatgcggactgctgatgcagagcagaaccgtttaccactggcagagccggcgggatgatc 310
Query: 8430 gggcgataaccctgcgtatccgggaaatagcagaaacccggatccgctacggttgcccgc 8489
         Sbjct: 309
         gggcgataaccctgcgtatccgggaaatagcagaaacccggatccgctacggttgcccgc 250
Query: 8490 gtattcacattcagctgcggcgggaaggctggcctgttaaccacaagaaaacacaccgga 8549
         Sbjct: 249 gtattcacattcagctgcggcgggaaggctggcctgttaaccacaagaaaacacaccgga 190
Query: 8550 tttactgtctggaaggcctcaacctgcgcaaaaagcgcccccgcaggcatgtcagtgcag 8609
         Sbjct: 189
         tttactgtctggaaggcctcaacctgcgcaaaaagggcccccgcaggcatgtcagtgcag 130
Query: 8610 cgcatcgtcagcaacgtccggtcctgaccggtgtcgatcagtgctggagtatggatttcg 8669
         Sbjct: 129 cgcatcgtcagcaacgtccggtcctgaccggtgtcgatcagtgctggagtatggatttcg 70
Query: 8670 tgtcggataacctgtttaacggacgacgtttccgggcgctgactgtagtggataatttta 8729
         Sbjct: 69
         tgtcggataacctgtttaacggacgacgtttccgggcgctgactgtagtggataatttta 10
```

Score = 700 bits (353), Expect = 0.0
Identities = 365/369 (98%)
Strand = Plus / Minus

```
Query: 59545 gatgcggactgctgatgcagagcagaaccgtttaccactggcagagccggcgggatgatc 59604
         \tt gatgcggactgctgatgcagagcagaaccgtttaccactggcagagccggcgggatgatc \ 310
Sbjct: 369
Query: 59605 gggcgataaccctgcgtatccgggaaatagcagaaacccggatccgctacggttgcccgc 59664
         Sbjct: 309
         gggcgataaccctgcgtatccgggaaatagcagaaacccggatccgctacggttgcccgc 250
Query: 59665 gtattcatattcagttgcggcgggaaggctggcctgttaaccacaagaaaacacaccgga 59724
         Sbjct: 249
         gtattcacattcagctgcggcgggaaggctggcctgttaaccacaagaaaacacaccgga 190
Query: 59725 tttactgtctggaagtcctcaacctgcgcaaaaagcgcccccgcaggcatgtcagtgcag 59784
         Sbjct: 189
         tttactgtctggaaggcctcaacctgcgcaaaaagggcccccgcaggcatgtcagtgcag 130
Query: 59785 cacatcgtcagcaacgtccggtcctgaccggtgtcgatcagtgctggagtatggatttcg 59844
         Sbjct: 129
         cgcatcgtcagcaacgtccggtcctgaccggtgtcgatcagtgctggagtatggatttcg 70
Query: 59845 tgtcggataacctgtttaacggacgacgtttccgggcgctgactgtagtggataatttta 59904
         Sbjct: 69
         tgtcggataacctgtttaacggacgacgtttccgggcgctgactgtagtggataatttta 10
Query: 59905 gtcgggagt 59913
         Sbjct: 9
         gtcgggagt 1
>NODE_14_length_153665_cov_8.989794
       Length = 153665
Score = 498 bits (251), Expect = e-139
Identities = 1091/1371 (79\%)
Strand = Plus / Minus
Query: 62879 gtggaaacaggcgtaaatcactggcagaaccagcagagtcagaatagtagcaaaacccag 62938
         Sbjct: 98775 gtggaagcaagcgtaaattaccggcagaaccagtagcgtcagtacggtggcaaaggcgag 98716
Query: 62939 accaaacatgatcacaaccgccatgctctggaagaaaacgtccagtaatagcggcgccag 62998
          Sbjct: 98715 gccgaacatgatcaccaccgccatactctggaaaaagacatcgcgcagcagcggggcaag 98656
Query: 62999 gccgagcacggtggtaaacgccgtcagcaggatcgggcgcagacgcgacgtggcgcata 63058
         Sbjct: 98655 gccaagcacagtggtaaaggcggtcagcaggatcggccgcagacgagggttgccgcatc 98596
Query: 63059 gataatagcctcctgttgccctttctccttcttctgctgttcaatttcttctaccagcac 63118
          Sbjct: 98595 aatgattgcttgtctttgatctttctcctgtttttgttgctctatctcttccaccagcac 98536
Query: 63119 gatgccgttacggatcagcatgccgctcaggctcagcaagccgattaacgccataaagcc 63178
          Sbjct: 98535 aatgccgttgcggatcagcataccgctgaggctaagcaggccgattaaggccataaagcc 98476
```

| | aaaggggatgccggtaagcaagaagcccggcgttacgccaatcagtgccagcggtatggt | |
|--|--|--|
| | cagccagatagccaccgcgtttttcagtgagctaaacatcagcacggtaattacaaacat | |
| | caacaggtaacccagcggcagtgtagtgaacagaccctgctgcgcctcgctggagttctc | |
| | tgcatcgccgccccactcaatgctgtatccgtgcggcaaagcgaacgcatcaatctgcgg | |
| | cttcacacgggacaggatatccccagccgtctggttgctcagcggatcgggatcggtctg tttcaccctggcaaggatatcgccgacgtttggccgctttgcgggctggggtcggtc | |
| | caccgtcaacacgcggctgcggtcgcggcgcaggataagcggatcttcccattcgaggtg | |
| | aaagccgctgaccacgttactgagcggaatatactgctggcggctctggctccagaccag | |
| | cacgttattcaggtgattcgcgtcctggcgctcagcggccgggggggg | |
| | cagcaggtcggctccctcgcggtacaagccagcgcggctgccggaaaagttcatctccag | |
| | cgcgttatcaatatcctgtttatcaacccccagctcgcgcccaagcgcggtggagtactg | |
| | cgggcggataactttgctgcggttttgccagtcattccggacaccatcggtagccggatc | |
| | tgcagagagaatatcgccaacctggctggcgagcaggcgcaggcggtcggggtccggacc | |
| | tttaatccgcacctcaatggcgctgtcgccggaagggccgaacatcacgcgtttcgtgct | |
| | ggcgtttacctgcggatagttgcgtgcaatatagcgatcaacatgctgcgttagggctgc | |

```
Query: 64019 aattttgcgctgatcgtccatgcgcaccatgatttgcgcatagttgctgtactgccgttg 64078
            Sbjct: 97635 gatactgcgctggtcgtccatccgcaccataatctgcgcgtagttgctgtactggcgctg 97576
Query: 64079 tccgctataggtgaggataaaccgcatgctgccctggccaacggtggccatggtggtgac 64138
          Sbjct: 97575 cccgctgtaggtgagaataaatcgcatactgccctggccaatggtggagacggtggtagc 97516
Query: 64139 caccccgggctggccgttaattgtggtctcaatatcgctggtcatcttttcggtggtcgc 64198
         Sbjct: 97515 cacccccggctggctggcgatcgaccgctcaatatcgcgggtcatctgctcggtggcgtt 97456
Query: 64199 gatatcggtaccgtacgggagccagagatcgacaaagaaaatcggcgtatt 64249
          Sbjct: 97455 aatatcggtaccgtagggcaaccacaggtcgacaaagaaaatgggcgtatt 97405
Score = 186 bits (94), Expect = 2e-45
Identities = 226/270 (83%)
Strand = Plus / Minus
Query: 62396 aaaccatggctggataagatagccccgctggtagggctcccagagatagtacaccgtcat 62455
         Sbjct: 99110 aaaccagggctggatcaggtagccgctgataaggctcccagacataatagaccgttac 99051
Query: 62456 ccagaacagaaagacgattaccacgctcttgattttgcccaattgccattgtgaatcatg 62515
          Sbjct: 99050 ccagaacagaagacgatgaccacgcttttaattttgccgatttgccagttggcatcgtg 98991
Query: 62516 gcgagactgcgaatcaagatagcccgccaccacaaaaacagcggcgtggcgatagtcga 62575
          Sbjct: 98990 acgcgtctgtgcatcaagataaccagccaccacaaaaacaacggcgtcgcgatggtcga 98931
Query: 62576 aataaacgtcaaaaacccgaggatccagtgatagtcataatcatagctatcccaggtgtt 62635
          Sbjct: 98930 gataaaggtcagcccgaggatccagtgatagtcataatcatagtgatcccaggtgtt 98871
Query: 62636 gtaaatggtgaagaaagtcaccgccgtcat 62665
          Sbjct: 98870 atagatagtgaaaaaggtcaccgctgtcat 98841
Score = 99.6 bits (50), Expect = 4e-19
Identities = 86/98 (87%)
Strand = Plus / Minus
```

```
Query: 64494 agcatgagcgaaatcagcagcacctggaacagcgattt 64531
          Sbjct: 97157 agcatcagggagatcagcagcacctggaacagggattt 97120
Score = 63.9 bits (32), Expect = 2e-08
Identities = 75/88 (85%), Gaps = 1/88 (1%)
Strand = Plus / Minus
Query: 62009 aatataaatttgtgaaccggtcagaatgaacgcatttctgtcggccttaaacagggcgaa 62068
          Sbjct: 99498 aatataaatttgcgatcccgtcagaatgaacgcattgcgatcggctttaaacagcgcgaa 99439
Query: 62069 -aaagaaatgccgctcgtaaaaccaggt 62095
           Sbjct: 99438 gaaaaaatggcgttcataaaaccaggt 99411
Score = 61.9 bits (31), Expect = 9e-08
Identities = 49/55 (89%)
Strand = Plus / Minus
Query: 61872 agcaggtgaaaaacggagtagtggagaatataaacgccggtcattgttttgctaa 61926
          Sbjct: 99635 agcaggtggaaaacggagtagtgcagaatatagaccccggtcatcgctttgctaa 99581
Score = 38.2 bits (19), Expect = 1.2
Identities = 31/35 (88%)
Strand = Plus / Minus
Query: 62694 ccggtactgttcatggttgtcgcttcatatcctta 62728
          Sbjct: 98812 ccggtactgttcatcgttgaggcgtcatatcctta 98778
>NODE_16_length_96205_cov_11.645944
       Length = 96205
Score = 438 bits (221), Expect = e-121
Identities = 655/797 (82%), Gaps = 2/797 (0%)
Strand = Plus / Plus
Query: 7083
         tgtaagcatcacggtaaagcggaccattcacatttagagatcttcctgcatactgattat 7142
          Sbjct: 64154 tgtaagtatcccggcaaaacgaaccattcacttttagagattttccgacatactgattat 64213
Query: 7143 gttcctggaggagatcgccatgcgcaaagcccgattcacctaacaccagatcattgccgt 7202
          Sbjct: 64214 gtcccctgaggagatcgctatgcgcaagctccgattcactgaacaccagatcatcgccgt 64273
```

```
Query: 7203
         tctgaagtccgtcgaagccggacgcaccgtcaaagatgtctgccgcgaagccgggattgc 7262
           Sbjct: 64274 attgaagtccgtcgaagctgaacgtaccgtcaaggatgtttgccgtgaggccgctatttc 64333
Query: 7263 tgaggcctcgtactacaactggaaagcgaagttcggcggtatggaagcctctgatatcaa 7322
                Sbjct: 64334 ggaagccagctattacaactggaaggcaaagcatggcgggatggaagcggtcgatattaa 64393
Query: 7323 aaagatgaaggacctcgtagatgaaaactaccggttgaaacagatgtttgcggacctgag 7382
         Sbjct: 64394 aaaaatcaaagatctggaagacgagaatcggaggcttaaacagatgtttgctgatctcag 64453
Query: 7383 tctcgagtgccgccctgaaagacgttattgaaaaaa-gctttaaaaaccagcaaaaaag 7441
         Sbjct: 64454 tcttgagtgccgggcactgaaagacgtcatcgaaaaaagctttaaaaccagcgataaag 64513
Query: 7442 cgtgagctggtcagctatctgaccgcgcagtttgccatgagcttacgtcaggcatgcagg 7501
         Sbjct: 64514 cgtgaactcgtcagctatctgacgacgcaatttgccataagtttacgccaggcctgcagg 64573
Query: 7502 atattgtcgctgagcaggacggtatttcgttatcagccggatacgcaacgtgatgagcca 7561
           Sbjct: 64574 acgttatcgctgagcaggacggtgtatttttaccagcccgatacccggcgtgatgaaccc 64633
Query: 7562 gtcattatggcgctgaccgtggcggctgaacgctatccg-gatacggatttaaaaagctt 7620
               Sbjct: 64634 gtgatccacgcgctgactgaactggcagaacgctatccgcgctacggttttaagaagctg 64693
Query: 7621 tttcaggtgctgcgcagggcaaaagctggaaccataagcgcgttcaccggatttac 7680
         Sbjct: 64694 ttccagctgctgcgcaggcagtgcaatacctggaaccataaatgtgttcaccggatttat 64753
Query: 7681
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         Sbjct: 64754 tgcctgctgaaactgaattttcgtcgcaagggaaaacagcggctgccagtgcgtaatcca 64813
Query: 7741 gctccgctggcgacgccagaggcgatgaaccagagctggtccatcgattatatgcacgat 7800
         Sbjct: 64814 gcaccctggcgacaccgcaagcgttaaaccagagctggcccatcgattttatgcacgac 64873
Query: 7801
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         Sbjct: 64874 gcgttggtctgcggcagacgcttccggaccttcaatgtggtggatgattttaaccgtgaa 64933
Query: 7861 gcactggcgatcgaaat 7877
         Sbjct: 64934 gcactggcgatagaaat 64950
```

Score = 58.0 bits (29), Expect = 1e-06
Identities = 62/73 (84%)
Strand = Plus / Plus

```
Query: 7884 gaatataacggcgagcgccccacgaatccctgaataatatgacaccggaagagtaccga 7943
         Sbjct: 65240 gaatataacaacgagcggcctcatgagtccctgaacaacctgacgccggaagagtaccgg 65299
Query: 7944 ctgatggctgaaa 7956
         Sbjct: 65300 ctgatggctgaaa 65312
>NODE_3_length_470369_cov_9.494788
       Length = 470369
Score = 363 bits (183), Expect = 2e-98
Identities = 1226/1573 (77%), Gaps = 3/1573 (0%)
Strand = Plus / Plus
Query: 35998 gatattccggtggtgtggaatatcgtctggaacgcgacggcgacctttattgccgtaatt 36057
         Sbjct: 55071 gatatcccggtggtgtggcatatcatctggaatgcgaccgccacctttatcgccgttatc 55130
Query: 36058 attatcagcctgcttgatgaatccggctttttcgaatgggcagcgctgcacgtttcc 36117
         Sbjct: 55131 attatcagcctgcttgatgagtctggctttttttgaatgggccgcgctgcacgtttcc 55190
Query: 36118 cgatggggtaacggtcgtggacgtttgctctttacgtatatcgttctgctcggtgcggcg 36177
         Sbjct: 55191 cgctggggaagagggggggtcgtctgctatttacctggattatcctgctcggcgcgcg 55250
Query: 36178 gtggcggcactgtttgccaacgatggtgcggcacttattctgacgccgatagtcatcgcc 36237
         Sbjct: 55251 gtggcggcgctgtttgccaacgacggcgcgctgatcctcacccccatcgtgattgcc 55310
Query: 36238 atgctgctggcattagggttcagcaaaggtacgacactggcatttgtcatggcagccggt 36297
         Sbjct: 55311 atgctgcgagcgctgggattcagcaagggaacgatgctggcctttgtcatggccgccgga 55370
Query: 36298 tttattgccgatacggccagcctgccgcttatcgtgtcgaacctggtgaatatagtctcg 36357
         Sbjct: 55371 tttattgccgataccgccagcctgccgctggtggtgtcgaatctggtgaatatcgtttcg 55430
Query: 36358 gcggacttctttggactgggcttcactgagtatgcgtcggtgatggttccggttgatatt 36417
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Query: 36418 gccgctattatcgccacgctggcgatgctgcatctgttcttccgcaaggatattccaccg 36477
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Query: 36478 acttacgacctggcgctcctgaaagctccgacaaaagcaataaaagatcctgctacgttc 36537
          Sbjct: 55551 gcctgggatatggcgttactgaaagcgccggtcacggcgataaaagatccggcgacgttc 55610
Query: 36538 cgcaccggctggatagttttgattcttctgttggtaggttttttcgtcctcgagccgctt 36597
         Sbjct: 55611 cgcaccggctggggcgtgctgctgctgttgctggtcggctttttcgttcttgacccgctg 55670
```

| | | gggattcccgttagtgcgattgcggctgttggtgctgtgatcctgtttgcggtagctaaa | |
|--------|-------|--|-------|
| _ | | cgaggccatgccattaacaccggcaaagtgctgcgtggcgcaccctggcaaatcgtcatc | |
| _ | | ttctccttggggatgtacctggtggtctacggtctgcgcaacgccgggctaaccgaatac | |
| | | ctttcaggagtgctgaacgtactggcggataaaggactctgggctgcgacgctgggtact | |
| | | ggcttcctgacggctttcctgtcttccatcatgaacaacatgcctaccgtgctggttggc | |
| | | gctctttctatcgatggaagcactgcaactggcgttattaaagaggcgatgatctacgcc | |
| | | aacgtgattggctgcgatctgggcccgaaaattacacctataggtagcctggcaacgctg | |
| | | ctctggctgcatgtcctttcacagaagaatatgaccattacctggggatactatttccgc | |
| | | accgggatcgtcatgactctgcctgtgctgtttgtaacgctggcagcgctggcgttacgt | |
| _ | | ctctctttcactttgtaatgagatactgatatgagcaacatcaccatttatcacaacccg | |
| | | gcctgcggcacgtcgcgtaatacgctggagatgatccgcaacagtggtaatgaaccgacc | |
| | | gttattcattaccttgaaaatccaccttcacgcgatgagctggtcaaactcattgcagat | |
| | | atgggcatttcagtccgggctttgctgcgcaaaaacgtcgagccttatgaagaactgggg | |
| Query: | 37378 | cttgctgaagataagtttactgacgatgagttaatcgattttatgcttcagtatccgatc | 37437 |

```
Query: 37438 ctgattaaccgtccgattgtggtgacaccgctgggaacgcgcctttgccgcccttccgaa 37497
         Sbjct: 56508 ctgattaaccgtccgatcgtgacaacgccgcggggcacccgactctgccgcccgtcagag 56567
Query: 37498 gtggtgctggatattcttccggatgcgcaaaaaaggcgcatttgctaaggaagacggcgag 37557
         Query: 37558 aaagtcgttgatg 37570
          Sbjct: 56628 ccagtcattgatg 56640
Score = 137 bits (69), Expect = 2e-30
Identities = 222/273 (81%)
Strand = Plus / Plus
Query: 33302 ccctacaactcttcaaatacctctccgatgaaacccgtttgggtatcgtgttgctgctca 33361
         Sbjct: 54570 ccctgcaactgttcaaaaacctcgccgatgaaacccggctggggatcgtattgctgctca 54629
Query: 33362 gggagatgggggagctgtgcgtgtgtgatctctgcactgcattggaacagtctcagccca 33421
         Sbjct: 54630 aggcgcgtggagagctgtgtgtttgcgatctctgtacggcgctcgcccagtcccagccca 54689
Query: 33422 agatctcccgccatctggcaatgctccgggaaagtggactattgctggatcgcaaacagg 33481
         Sbjct: 54690 agateteeegeeatetggegatgetgeggaaaagegggetgetgetggategtaaacagg 54749
Sbjct: 54750 gtaaatgggtccattaccgcctctctccgcagatgccggcctgggcgcgggtgattg 54809
Query: 33542 agctggcctggttaagccaacaggacgacgtgc 33574
         Sbjct: 54810 agcaggcctggctcagtcagcaggacgatgtgc 54842
Score = 71.9 bits (36), Expect = 9e-11
Identities = 69/80 (86%)
Strand = Plus / Plus
Query: 35866 atgttactggcaggcgctatttttgtcctgaccattgttttggttatctggcaaccaaaag 35925
         Sbjct: 54939 atgttgctggcaggcgcatttttgtcctgaccctggtgttggtgatctggcagccgcgg 54998
Query: 35926 ggattagggatcggctggag 35945
         Sbjct: 54999 ggtttagggatcggctggag 55018
```

Sbjct: 56448 ctggcggaagaccggtttactgacgatcagttaatcgactttatgcttcagcatccgatc 56507

```
Score = 48.1 bits (24), Expect = 0.001
Identities = 33/36 (91%)
Strand = Plus / Plus
Query: 61622 gttttatgtcgggtggcggctaccgccttacccgac 61657
            Sbjct: 354174 gttttttgtcgggtggcggctagcgcctgacccgac 354209
Score = 38.2 bits (19), Expect = 1.2
Identities = 19/19 (100%)
Strand = Plus / Minus
Query: 19871 cagcagacgctgacccagg 19889
            Sbjct: 132545 cagcagacgctgacccagg 132527
Score = 36.2 bits (18), Expect = 4.9
Identities = 30/34 (88%)
Strand = Plus / Plus
Query: 61631 cgggtggcggctaccgccttacccgacttacaaa 61664
           Sbjct: 59281 cgggtggcggctttcgccttacccggcctacaaa 59314
Score = 36.2 bits (18), Expect = 4.9
Identities = 18/18 (100%)
Strand = Plus / Plus
Query: 2746 tagagctgtttaaagccg 2763
           Sbjct: 68846 tagagctgtttaaagccg 68863
Score = 36.2 bits (18), Expect = 4.9
Identities = 18/18 (100%)
Strand = Plus / Plus
```

```
Score = 36.2 bits (18), Expect = 4.9
Identities = 18/18 (100%)
Strand = Plus / Minus
Query: 10874 atcgcctttgaccgcttc 10891
           Sbjct: 310319 atcgcctttgaccgcttc 310302
>NODE 46 length 1018 cov 16.254770
        Length = 1018
Score = 252 \text{ bits (127)}, Expect = 4e-65
Identities = 127/127 (100%)
Strand = Plus / Plus
Query: 10108 gggtcttccgttgttgtggtggctgaaggcatgataatggcgtattaaatcgccagaggt 10167
          Sbjct: 892
          gggtcttccgttgttgtggtggctgaaggcatgataatggcgtattaaatcgccagaggt 951
Query: 10168 caccaccatggacgaaaagtccctctatgcacatatcctcaacttgtcagctccgtggca 10227
          Sbjct: 952
          caccaccatggacgaaaagtccctctatgcacatatcctcaacttgtcagctccgtggca 1011
Query: 10228 ggtaaag 10234
          Sbjct: 1012 ggtaaag 1018
>NODE 4 length_398729_cov_7.868694
        Length = 398729
Score = 135 bits (68), Expect = 7e-30
Identities = 113/128 (88%)
Strand = Plus / Minus
Query: 7105
           accattcacatttagagatcttcctgcatactgattatgttcctggaggaggatcgccatg 7164
           Sbjct: 260794 accattcacgtttagggatcttccgacatactgattatgtcctctgaggagatcaccatg 260735
Query: 7165
           cgcaaagcccgattcacctaacaccagatcattgccgttctgaagtccgtcgaagccgga 7224
           Sbjct: 260734 cgtaaagcccgattcatcgaacaccagatcattgccgttctgaagtccgtcgaagacaga 260675
```

Query: 7225 cgcaccgt 7232 || || || || Sbjct: 260674 cgtaccgt 260667 Score = 40.1 bits (20), Expect = 0.31
Identities = 20/20 (100%)
Strand = Plus / Minus

Query: 30709 gggcaaagactacacacagc 30728

Sbjct: 367357 gggcaaagactacacacagc 367338

Score = 36.2 bits (18), Expect = 4.9
Identities = 21/22 (95%)
Strand = Plus / Minus

Query: 43613 taatgcagatcaggatgctggt 43634

Sbjct: 7917 taatgccgatcaggatgctggt 7896

Score = 36.2 bits (18), Expect = 4.9
Identities = 18/18 (100%)
Strand = Plus / Minus

Query: 36827 cgctgggtactggcttcc 36844

Sbjct: 103853 cgctgggtactggcttcc 103836

Score = 36.2 bits (18), Expect = 4.9
Identities = 21/22 (95%)
Strand = Plus / Minus

Query: 40323 tttttcgcccattcggcgctgg 40344

Sbjct: 137455 tttttcgcccatccggcgctgg 137434

Score = 36.2 bits (18), Expect = 4.9
Identities = 18/18 (100%)
Strand = Plus / Minus

Query: 42405 agatgttcaacttaatct 42422

Sbjct: 175088 agatgttcaacttaatct 175071

Score = 36.2 bits (18), Expect = 4.9

Identities = 18/18 (100%) Strand = Plus / Plus Query: 23779 tggcaatatcaccctgac 23796 11111111111111111 Sbjct: 211647 tggcaatatcaccctgac 211664 Score = 36.2 bits (18), Expect = 4.9Identities = 18/18 (100%) Strand = Plus / Plus Query: 46875 aggttcgccatgagtgaa 46892 111111111111111111 Sbjct: 265454 aggttcgccatgagtgaa 265471 >NODE_32_length_43518_cov_20.448595 Length = 43518Score = 79.8 bits (40), Expect = 4e-13Identities = 49/52 (94%) Strand = Plus / Minus Query: 7652 ggaaccataagcgcgttcaccggatttactgcctgctgaaactgaattttcg 7703 Sbjct: 26246 ggaaccataaatgcgttcaccgaatttactgcctgctgaaactgaattttcg 26195 Score = 42.1 bits (21), Expect = 0.079 Identities = 24/25 (96%) Strand = Plus / Minus Query: 60393 aattttcaatatccaaactgacccc 60417 Sbjct: 33916 aattttcgatatccaaactgacccc 33892 Score = 38.2 bits (19), Expect = 1.2

Identities = 28/31 (90%) Strand = Plus / Plus

Query: 9197 gggtcgatgcaacattattcttaatcaaggg 9227 Sbjct: 17591 gggtcgatgcaacgctatccttaatcaaggg 17621

```
Length = 222279
```

Score = 56.0 bits (28), Expect = 5e-06
Identities = 37/40 (92%)
Strand = Plus / Minus

Query: 61623 ttttatgtcgggtggcggctaccgccttacccgacttaca 61662

Sbjct: 23475 ttttgtgtcgggtggcggctaacgccttacccgacctaca 23436

>NODE_12_length_196820_cov_8.472076 Length = 196820

Score = 54.0 bits (27), Expect = 2e-05
Identities = 33/35 (94%)
Strand = Plus / Minus

Query: 61511 acctatattcccggcacctataacaacggtaacgt 61545

Sbjct: 66455 acctatattcccggcacctacaataacggtaacgt 66421

Score = 54.0 bits (27), Expect = 2e-05
Identities = 33/35 (94%)
Strand = Plus / Plus

Query: 61628 tgtcgggtggcggctaccgccttacccgacttaca 61662

Sbjct: 113397 tgtcgggtggcggctaacgccttacccgacctaca 113431

Score = 38.2 bits (19), Expect = 1.2
Identities = 19/19 (100%)
Strand = Plus / Minus

Query: 61342 cggctacggctgggagaaa 61360

Sbjct: 66621 cggctacggctgggagaaa 66603

>NODE_11_length_214047_cov_8.768119 Length = 214047

Score = 54.0 bits (27), Expect = 2e-05
Identities = 33/35 (94%)
Strand = Plus / Minus

Query: 61623 ttttatgtcgggtggcggctaccgccttacccgac 61657

Sbjct: 37656 ttttttgtcgggtggcggctaacgccttacccgac 37622

Score = 40.1 bits (20), Expect = 0.31 Identities = 23/24 (95%) Strand = Plus / Plus

Query: 30689 aaaaaaagcccgccagcggggc 30712

Sbjct: 6825 aaaaaaagcccgccaacggcggc 6848

Score = 36.2 bits (18), Expect = 4.9
Identities = 18/18 (100%)
Strand = Plus / Minus

Query: 63539 aaagccgctgaccacgtt 63556

Sbjct: 33186 aaagccgctgaccacgtt 33169

Score = 36.2 bits (18), Expect = 4.9
Identities = 18/18 (100%)
Strand = Plus / Plus

Query: 7838 tggtggatgattttaacc 7855

Sbjct: 202242 tggtggatgattttaacc 202259

>NODE_8_length_247549_cov_9.773464 Length = 247549

Score = 48.1 bits (24), Expect = 0.001
Identities = 33/36 (91%)
Strand = Plus / Minus

Query: 61622 gttttatgtcgggtggcggctaccgccttacccgac 61657

Sbjct: 122099 gttttttgtcgggtggcggcttacgccttacccgac 122064

Score = 42.1 bits (21), Expect = 0.079
Identities = 24/25 (96%)
Strand = Plus / Plus

Query: 1798 ccgatgacatgagcgctctggaagc 1822

Sbjct: 119163 ccgatgccatgagcgctctggaagc 119187

Score = 38.2 bits (19), Expect = 1.2
Identities = 19/19 (100%)
Strand = Plus / Minus

Query: 10874 atcgcctttgaccgcttcc 10892

Sbjct: 60238 atcgcctttgaccgcttcc 60220

Score = 36.2 bits (18), Expect = 4.9
Identities = 18/18 (100%)
Strand = Plus / Minus

Query: 5317 cccgctgctgccggtaaa 5334

Sbjct: 44154 cccgctgctgccggtaaa 44137

Score = 36.2 bits (18), Expect = 4.9
Identities = 18/18 (100%)
Strand = Plus / Minus

Query: 12012 gatgaaggccaggtgatc 12029

Sbjct: 175520 gatgaaggccaggtgatc 175503

>NODE_22_length_75116_cov_9.737735 Length = 75116

Score = 46.1 bits (23), Expect = 0.005
Identities = 32/35 (91%)
Strand = Plus / Minus

Query: 61623 ttttatgtcgggtggcggctaccgccttacccgac 61657

Sbjct: 61342 ttttttgttgggtggcggctaacgccttacccgac 61308

Score = 38.2 bits (19), Expect = 1.2
Identities = 19/19 (100%)
Strand = Plus / Minus

Query: 24553 gggtgacgtcctgaccacc 24571

Score = 36.2 bits (18), Expect = 4.9
Identities = 21/22 (95%)
Strand = Plus / Plus

Score = 36.2 bits (18), Expect = 4.9
Identities = 18/18 (100%)
Strand = Plus / Plus

>NODE_2_length_478638_cov_9.783182 Length = 478638

Score = 40.1 bits (20), Expect = 0.31
Identities = 20/20 (100%)
Strand = Plus / Minus

Score = 38.2 bits (19), Expect = 1.2
Identities = 19/19 (100%)
Strand = Plus / Minus

Query: 36424 attatcgccacgctggcga 36442

Sbjct: 10414 attatcgccacgctggcga 10396 Score = 38.2 bits (19), Expect = 1.2 Identities = 37/43 (86%) Strand = Plus / Plus Query: 62768 cctgggcagtgctcacgccctcacgtactgcgtgtacgctcc 62810 Sbjct: 53789 cctgggctgtgctcgccctgtcacgtacttcgtgtacgctcc 53831 Score = 38.2 bits (19), Expect = 1.2Identities = 31/35 (88%) Strand = Plus / Plus Query: 61628 tgtcgggtggcggctaccgccttacccgacttaca 61662 Sbjct: 132823 tgtcgggtggcggcttacgcctgacccgacctaca 132857 Score = 36.2 bits (18), Expect = 4.9Identities = 18/18 (100%) Strand = Plus / Minus Query: 28387 agttccgcagacgcctga 28404 Sbjct: 27042 agttccgcagacgcctga 27025 Score = 36.2 bits (18), Expect = 4.9Identities = 18/18 (100%) Strand = Plus / Plus Query: 28581 ccagcatgagcgccagag 28598 11111111111111111 Sbjct: 171182 ccagcatgagcgccagag 171199 Score = 36.2 bits (18), Expect = 4.9 Identities = 18/18 (100%)

Query: 23448 tgtatgaagtcggcaccg 23465

Strand = Plus / Plus

Sbjct: 379681 tgtatgaagtcggcaccg 379698

Score = 36.2 bits (18), Expect = 4.9 Identities = 18/18 (100%) Strand = Plus / Minus

Query: 56709 ccgtgctctttaatcagc 56726 111111111111111111

Sbjct: 447685 ccgtgctctttaatcagc 447668

>NODE_37_length_21672_cov_17.473938 Length = 21672

Score = 38.2 bits (19), Expect = 1.2Identities = 19/19 (100%) Strand = Plus / Plus

Query: 1278 acattattcgcttctatca 1296

Sbjct: 6989 acattattcgcttctatca 7007

>NODE_18_length_93281_cov_10.372534 Length = 93281

Score = 38.2 bits (19), Expect = 1.2 Identities = 19/19 (100%) Strand = Plus / Plus

Query: 3489 ttatggattatccttttt 3507

Sbjct: 73321 ttatggattatccttttt 73339

>NODE 9 length 237731 cov 8.189807 Length = 237731

Score = 38.2 bits (19), Expect = 1.2 Identities = 19/19 (100%) Strand = Plus / Plus

Query: 37115 cgctggcagcgctggcgtt 37133 111111111111111111

Sbjct: 87426 cgctggcagcgctggcgtt 87444

Score = 38.2 bits (19), Expect = 1.2

Identities = 19/19 (100%)

Query: 8193 ctgcgccgcctgcgccagc 8211

Sbjct: 191214 ctgcgccgcctgcgccagc 191232

Score = 38.2 bits (19), Expect = 1.2

Identities = 19/19 (100%)

Strand = Plus / Plus

Query: 59368 ctgcgccgcctgcgccagc 59386

Sbjct: 191214 ctgcgccgcctgcgccagc 191232

Score = 36.2 bits (18), Expect = 4.9

Identities = 18/18 (100%)

Strand = Plus / Plus

Query: 36029 acgcgacggcgaccttta 36046

Sbjct: 92228 acgcgacggcgaccttta 92245

>NODE 5 length 361067 cov 9.330210 Length = 361067

Score = 38.2 bits (19), Expect = 1.2

Identities = 19/19 (100%)

Strand = Plus / Minus

Query: 15546 gctgaaagcgattgacgcc 15564

Sbjct: 182162 gctgaaagcgattgacgcc 182144

>NODE_26_length_62505_cov_11.128427 Length = 62505

Score = 36.2 bits (18), Expect = 4.9

Identities = 27/30 (90%)

Strand = Plus / Plus

Query: 62754 tttgctattttgctcctgggcagtgctcac 62783

Sbjct: 12462 tttgccattttgaacctgggcagtgctcac 12491

```
Score = 36.2 bits (18), Expect = 4.9
Identities = 18/18 (100%)
Strand = Plus / Minus
Query: 45416 catttttttaaaaaattt 45433
            Sbjct: 56580 catttttttaaaaaattt 56563
>NODE_25_length_69837_cov_10.709066
        Length = 69837
Score = 36.2 bits (18), Expect = 4.9
Identities = 21/22 (95%)
Strand = Plus / Minus
Query: 59133 tgatctcctcctgaaaacagt 59154
            Sbjct: 56737 tgatctcctccggaaaacagt 56716
Score = 36.2 bits (18), Expect = 4.9
Identities = 21/22 (95%)
Strand = Plus / Minus
Query: 7958 tgatctcctcctgaaaacagt 7979
            Sbjct: 56737 tgatctcctcccggaaaacagt 56716
>NODE_13_length_165527_cov_10.023307
        Length = 165527
Score = 36.2 bits (18), Expect = 4.9
Identities = 18/18 (100%)
Strand = Plus / Minus
Query: 55141 aagaccgacatcgccagc 55158
            Sbjct: 13630 aagaccgacatcgccagc 13613
>NODE 7 length 272670 cov 9.299336
        Length = 272670
Score = 36.2 bits (18), Expect = 4.9
Identities = 18/18 (100%)
Strand = Plus / Minus
Query: 37432 ccgatcctgattaaccgt 37449
```

 Score = 36.2 bits (18), Expect = 4.9
Identities = 18/18 (100%)
Strand = Plus / Plus

Query: 38100 acatggtgagcatagata 38117

Sbjct: 43774 acatggtgagcatagata 43791

Score = 36.2 bits (18), Expect = 4.9
Identities = 18/18 (100%)
Strand = Plus / Minus

Query: 37290 cgatgagctggtcaaact 37307

Sbjct: 226725 cgatgagctggtcaaact 226708

Score = 36.2 bits (18), Expect = 4.9
Identities = 18/18 (100%)
Strand = Plus / Minus

Query: 17001 acgccgccagcttcagcc 17018

Sbjct: 264784 acgccgccagcttcagcc 264767

>NODE_6_length_356231_cov_9.759612 Length = 356231

Score = 36.2 bits (18), Expect = 4.9
Identities = 18/18 (100%)
Strand = Plus / Plus

Query: 26331 gaagatgaaatgatttct 26348

Sbjct: 327025 gaagatgaaatgatttct 327042

Database: /vol/rast-prod/jobs/697071/rp/573.23855/contigs Posted date: Mar 14, 2019 5:46 AM Number of letters in database: 5,874,982 Number of sequences in database: 128

Lambda K H 1.37 0.711 1.31

Gapped
Lambda K H
1.37 0.711 1.31

S2: 18 (36.2 bits)

Matrix: blastn matrix:1 -3 Gap Penalties: Existence: 5, Extension: 2 Number of Sequences: 128 Number of Hits to DB: 609,156 Number of extensions: 178 Number of successful extensions: 178 Number of sequences better than 10.0: 31 Number of HSP's gapped: 144 Number of HSP's successfully gapped: 144 Length of query: 64537 Length of database: 5,874,982 Length adjustment: 20 Effective length of query: 64517 Effective length of database: 5,872,422 Effective search space: 378871050174 Effective search space used: 378871050174 X1: 11 (21.8 bits) X2: 15 (29.7 bits) X3: 50 (99.1 bits) S1: 18 (36.2 bits)