Blast Result Interpretation

Result 1 (has 7 Hits):

Hit accession: penA0.000 Hsp identity: 100

Hit accession: penA1.001

Hsp identity: 99.7139588100686

Hit accession: penA1.003

Hsp identity: 99.6567505720824

Hit accession: penA2.002

Hsp identity: 99.141876430206

Hit accession: penA2.001

Hsp identity: 99.0274599542334

Hit accession: penA2.003

Hsp identity: 98.9702517162471

Hit accession: penA3.001

Hsp identity: 98.5722444317533

Result 2 (has 6 Hits):

Hit accession: mtrR0.000 Hsp identity: 100

Hit accession: mtrR1.000

Hsp identity: 98.7179487179487

Hit accession: mtrR6.000

Hsp identity: 98.4330484330484

Hit accession: mtrR5.000

Hsp identity: 98.2905982905983

Hit accession: mtrR4.000

Hsp identity: 98.1481481481482

Hit accession: mtrR3.000

Hsp identity: 98.1481481481482

BLASTN 2.2.28+

Reference: Zheng Zhang, Scott Schwartz, Lukas Wagner, and Webb Miller (2000), "A greedy algorithm for aligning DNA sequences", J Comput Biol 2000; 7(1-2):203-14.

Query= Length=1745

Sequences producing significant alignments:	Score (Bits)	E Value
penA0.000	3223	0.0
penA1.001	3197	0.0
penAl.003	3192	0.0
penA2.002	3142	0.0
penA2.001	3131	0.0
penA2.003	3125	0.0
penA3.001	3090	0.0

Score = 3223 bits (1745), Expect = 0.0 Identities = 1745/1745 (100%), Gaps = 0/1745 (0%) Strand=Plus/Plus

Query	1	ATGTTGATTAAAAGCGAATATAAGCCCCGGATGCTGCCCAAAGAAGAGCAGGTCAAAAAG	60
Sbjct	1	ATGTTGATTAAAAGCGAATATAAGCCCCGGATGCTGCCCAAAGAAGAGCAGGTCAAAAAAG	60
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Sbjct	61	CCGATGACCAGTAACGGACGGATTAGCTTCGTCCTGATGGCAATGGCGGTCTTGTTTGCC	120
Query	121	TGTCTGATTGCCCGCGGGCTGTATCTGCAGACGGTAACGTATAACTTTTTGAAAGAACAG	180
Sbjct	121	TGTCTGATTGCCCGCGGGCTGTATCTGCAGACGGTAACGTATAACTTTTTGAAAGAACAG	180
Query	181	GGCGACAACCGGATTGTGCGGACTCAAGCATTGCCGGCTACACGCGGTACGGTTTCGGAC	240
Sbjct	181	GGCGACAACCGGATTGTGCGGACTCAAGCATTGCCGGCTACACGCGGTACGGTTTCGGAC	240
Query	241	CGGAACGGTGCGGTTTTGGCGTTGAGCGCGCCGACGGAGTCCCTGTTTGCCGTGCCTAAA	300
Sbjct	241	CGGAACGGTGCGGTTTTGGCGTTGAGCGCGCCGACGGAGTCCCTGTTTGCCGTGCCTAAA	300
Query	301	GATATGAAGGAAATGCCGTCTGCCGCCCAATTGGAACGCCTGTCCGAGCTTGTCGATGTG	360
Sbjct	301	GATATGAAGGAAATGCCGTCTGCCGCCCAATTGGAACGCCTGTCCGAGCTTGTCGATGTG	360
Query	361	CCGGTCGATGTTTTGAGGAACAAACTCGAACAGAAAGGCAAGTCGTTTATTTGGATCAAG	420
Sbjct	361	CCGGTCGATGTTTTGAGGAACAAACTCGAACAGAAAGGCAAGTCGTTTATTTGGATCAAG	420
Query	421	CGGCAGCTCGATCCCAAGGTTGCCGAAGAGGTCAAAGCCTTGGGTTTGGAAAACTTTGTA	480
Sbjct	421	CGGCAGCTCGATCCCAAGGTTGCCGAAGAGGTCAAAGCCTTGGGTTTGGAAAACTTTGTA	480
Query	481	TTTGAAAAAGAATTAAAACGCCATTACCCGATGGGCAACCTGTTTGCACACGTCATCGGA	540
Sbjct	481	TTTGAAAAAGAATTAAAACGCCATTACCCGATGGGCAACCTGTTTGCACACGTCATCGGA	540
Query	541	TTTACCGATATTGACGGCAAAGGTCAGGAAGGTTTGGAACTTTCGCTTGAAGACAGCCTG	600
Sbjct	541	TTTACCGATATTGACGGCAAAGGTCAGGAAGGTTTGGAACTTTCGCTTGAAGACAGCCTG	600
Query	601	TATGGCGAAGACGGCGGGAAGTTGTTTTGCGGGACCGGCAGGGCAATATTGTGGACAGC	660
Sbjct	601	TATGGCGAAGACGGCGGGAAGTTGTTTTGCGGGACCGGCAGGGCAATATTGTGGACAGC	660
Query	661	TTGGACTCCCCGCGCAATAAAGCACCGCAAAACGGCAAAGACATCATCCTTTCCCTCGAT	720
Sbjct	661	TTGGACTCCCCGCGCAATAAAGCACCGCAAAACGGCAAAGACATCATCCTTTCCCTCGAT	720
Query	721	CAGAGGATTCAGACCTTGGCCTATGAAGAGTTGAACAAGGCGGTCGAATACCATCAGGCA	780
Sbjct	721	CAGAGGATTCAGACCTTGGCCTATGAAGAGTTGAACAAGGCGGTCGAATACCATCAGGCA	780
Query	781	AAAGCCGGAACGGTGGTGTTTTGGATGCCCGCACGGGGGAAATCCTCGCCTTGGCCAAT	840
Sbjct	781	AAAGCCGGAACGGTGGTTTTTGGATGCCCGCACGGGGGAAATCCTCGCCTTGGCCAAT	840
Query	841	ACGCCCGCCTACGATCCCAACAGACCCGGCCGGCCAGACAGCGAACAGCGGCGCAACCGT	900
Sbjct	841	ACGCCCGCCTACGATCCCAACAGACCCGGCCGGGCAGACAGCGAACAGCGCCCAACCGT	900
Query	901	GCCGTAACCGATATGATCGAACCTGGTTCGGCAATCAAACCGTTCGTGATTGCGAAGGCA	960
Sbjct	901	GCCGTAACCGATATGATCGAACCTGGTTCGGCAATCAAACCGTTCGTGATTGCGAAGGCA	960

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         Sbjct
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Query
         1021
         CCGTCTCCCGTGCGCGATACCCATGTTTACCCCTCTTTGGATGTGCGCGGCATTATGCAG
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Sbict
     1081 AAATCGTCCAACGTCGGCACAAGCAAACTGTCTGCGCGTTTCGGCGCCGAAGAAATGTAT
Query
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         AAATCGTCCAACGTCGGCACAAGCAAACTGTCTGCGCGTTTCGGCGCCGAAGAAATGTAT
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         1501
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Sbjct
Ouerv
    1561
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Ouerv
         1680
Sbjct
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        TCTTA 1745
Query
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    1741
             1745
Sbjct
         TCTTA
> penA1.001
Length=1749
Score = 3197 bits (1731), Expect = 0.0
Identities = 1743/1748 (99%), Gaps = 3/1748 (0%)
Strand=Plus/Plus
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Ouerv 1
         Sbjct
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                                                      60
    1
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Ouerv
     61
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Sbjct	61	$\tt CCGATGACCAGTAACGGACGGATTAGCTTCGTCCTGATGGCAATGGCGGTCTTGTTTGCC$	120
Query	121	${\tt TGTCTGATTGCCCGCGGGCTGTATCTGCAGACGGTAACGTATAACTTTTTGAAAGAACAG}$	180
Sbjct	121	TGTCTGATTGCCCGCGGGCTGTATCTGCAGACGGTAACGTATAACTTTTTGAAAGAACAG	180
Query	181	GGCGACAACCGGATTGTGCGGACTCAAGCATTGCCGGCTACACGCGGTACGGTTTCGGAC	240
Sbjct	181	GGCGACAACCGGATTGTGCGGACTCAAGCATTGCCGGCTACACGCGGTACGGTTTCGGAC	240
Query	241	CGGAACGGTGCGGTTTTGGCGTTGAGCGCGCCGACGGAGTCCCTGTTTGCCGTGCCTAAA	300
Sbjct	241	CGGAACGGTGCGGTTTTGGCGTTGAGCGCCGACGGAGTCCCTGTTTGCCGTGCCTAAA	300
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Sbjct	301	GATATGAAGGAAATGCCGTCTGCCGCCCAATTGGAACGCCTGTCCGAGCTTGTCGATGTG	360
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Sbjct	361	CCGGTCGATGTTTTGAGGAACAAACTCGAACAGAAAGGCAAGTCGTTTATTTGGATCAAG	420
Query	421	CGGCAGCTCGATCCCAAGGTTGCCGAAGAGGTCAAAGCCTTGGGTTTGGAAAACTTTGTA	480
Sbjct	421	CGGCAGCTCGATCCCAAGGTTGCCGAAGAGGTCAAAGCCTTGGGTTTGGAAAACTTTGTA	480
Query	481	TTTGAAAAAGAATTAAAACGCCATTACCCGATGGGCAACCTGTTTGCACACGTCATCGGA	540
Sbjct	481	TTTGAAAAAGAATTAAAACGCCATTACCCGATGGGCAACCTGTTTGCACACGTCATCGGA	540
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Sbjct	541	TTTACCGATATTGACGGCAAAGGTCAGGAAGGTTTGGAACTTTCGCTTGAAGACAGCCTG	600
Query	601	TATGGCGAAGACGGCGCGGAAGTTGTTTTGCGGGACCGGCAGGGCAATATTGTGGACAGC	660
Sbjct	601	TATGGCGAAGACGGCGGGAAGTTGTTTTGCGGGACCGGCAGGGCAATATTGTGGACAGC	660
Query	661	TTGGACTCCCCGCGCAATAAAGCACCGCAAAACGGCAAAGACATCATCCTTTCCCTCGAT	720
Sbjct	661	TTGGACTCCCGCGCAATAAAGCACCGCAAAACGGCAAAGACATCATCCTTTCCCTCGAT	720
Query	721	CAGAGGATTCAGACCTTGGCCTATGAAGAGTTGAACAAGGCGGTCGAATACCATCAGGCA	780
Sbjct	721	CAGAGGATTCAGACCTTGGCCTATGAAGAGTTGAACAAGGCGGTCGAATACCATCAGGCA	780
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Sbjct	781	AAAGCCGGAACGGTGGTGTTTTGGATGCCCGCACGGGGGAAATCCTCGCCTTGGCCAAT	840
Query	841	ACGCCCGCCTACGATCCCAACAGACCCGGCCGGCAGACAGCGAACAGCGGCGCAACCGT	900
Sbjct	841	ACGCCCGCCTACGATCCCAACAGACCCGGCCGGCCAGACAGCGAACAGCGGCGCAACCGT	900
Query	901	GCCGTAACCGATATGATCGAACCTGGTTCGGCAATCAAACCGTTCGTGATTGCGAAGGCA	960
Sbjct	901	GCCGTAACCGATATGATCGAACCTGGTTCGGCAATCAAACCGTTCGTGATTGCGAAGGCA	960
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Sbjct	961	TTGGATGCGGCCAAAACCGATTTGAACGAACGGCTGAATACGCAGCCTTATAAAATCGGA	1020
Query	1021	CCGTCTCCCGTGCGCGATACCCATGTTTACCCCTCTTTGGATGTGCGCGGCATTATG	1077
Sbjct	1021	CCGTCTCCCGTGCGCGACGATACCCATGTTTACCCCTCTTTGGATGTGCGCGGCATTATG	1080
Query	1078	CAGAAATCGTCCAACGTCGGCACAAGCAAACTGTCTGCGCGTTTCGGCGCCGAAGAAATG	1137
Sbjct	1081	CAGAAATCGTCCAACGTCGGCACAAGCAAACTGTCTGCGCGTTTCGGCGCCGAAGAAATG	1140

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    1621
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    1678
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Sbict
Ouerv
    1738
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         1741
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Query 1
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Sbjct
                                                     60
Ouerv
     61
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         CCGATGACCAGTAACGGACGGATTAGCTTCGTCCTGATGGCAATGGCGGTCTTGTTTGCC
Sbjct
     61
                                                     120
Ouerv
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                                                     180
         TGTCTGATTGCCCGCGGGCTGTATCTGCAGACGGTAACGTATAACTTTTTGAAAGAACAG
                                                     180
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Ouerv
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    181
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Ouerv
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Sbjct	241	CGGAACGGTGCGGTTTTGGCGTTGAGCGCGCCGACGGAGTCCCTGTTTGCCGTGCCTAAA	300
Query	301	GATATGAAGGAAATGCCGTCTGCCGCCCAATTGGAACGCCTGTCCGAGCTTGTCGATGTG	360
Sbjct	301	GATATGAAGGAAATGCCGTCTGCCGCCCAATTGGAACGCCTGTCCGAGCTTGTCGATGTG	360
Query	361	$\tt CCGGTCGATGTTTTGAGGAACAAACTCGAACAGAAAGGCAAGTCGTTTATTTGGATCAAG$	420
Sbjct	361	CCGGTCGATGTTTTGAGGAACAAACTCGAACAGAAAGGCAAGTCGTTTATTTGGATCAAG	420
Query	421	CGGCAGCTCGATCCCAAGGTTGCCGAAGAGGTCAAAGCCTTGGGTTTGGAAAACTTTGTA	480
Sbjct	421	CGGCAGCTCGATCCCAAGGTTGCCGAAGAGCTCAAAGCCTTGGGTTTGGAAAACTTTGTA	480
Query	481	$\tt TTTGAAAAAGAATTAAAACGCCATTACCCGATGGGCAACCTGTTTGCACACGTCATCGGA$	540
Sbjct	481	TTTGAAAAAGAATTAAAACGCTATTACCCGATGGGCAACCTGTTTGCACACGTCATCGGA	540
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Sbjct	541	TTTACCGATATTGACGGCAAAGGTCAGGAAGGTTTGGAACTTTCGCTTGAAGACAGCCTG	600
Query	601	TATGGCGAAGACGGCGGGAAGTTGTTTTGCGGGACCGGCAGGGCAATATTGTGGACAGC	660
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Sbjct	661	TTGGACTCCCCGCGCAATAAAGCACCGCAAAACGGCAAAGACATCATCCTTTCCCTCGAT	720
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Sbjct	721	CAGAGGATTCAGACCTTGGCCTATGAAGAGTTGAACAAGGCGGTCGAATACCATCAGGCA	780
Query	781	AAAGCCGGAACGGTGGTGTTTTGGATGCCCGCACGGGGGAAATCCTCGCCTTGGCCAAT	840
Sbjct	781	AAAGCCGGAACGGTGGTTTTTGGATGCCCGCACGGGGGAAATCCTCGCCTTGGCCAAT	840
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Sbjct	841	ACGCCCGCCTACGATCCCAACAGACCCGGCCGGGCAGACAGCGAACAGCGCCCAACCGT	900
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Sbjct	901	GCCGTAACCGATATGATCGAACCTGGTTCGGCAATCAAACCGTTCGTGATTGCGAAGGCA	960
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Sbjct	1021	CCGTCTCCCGTGCGCGACGATACCCATGTTTACCCCTCTTTGGATGTGCGCGGCATTATG	1080
Query	1078	CAGAAATCGTCCAACGTCGGCACAAGCAAACTGTCTGCGCGTTTCGGCGCCGAAGAAATG	1137
Sbjct	1081	CAGAAATCGTCCAACGTCGGCACAAGCAAACTGTCTGCGCGCTTTCGGCGCCGAAGAAATG	1140
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Sbjct	1261	TTCGGTTACGGCCTGCAATTGAGCCTGCAATTGGCGCGCGC	1320

Query Sbjct	1318 1321	CACGACGGCGTTTTGCTGCCGCTCAGCTTTGAGAAGCAGGCGGTTGCGCCGCAAGGCAAA	1377 1380
_			
Query Sbjct	1378 1381	CGCATATTCAAAGAATCGACCGCGCGCGCGGGGTACGCAATCTGATGGTTTCCGTAACCGAG	1437 1440
Query	1438	CCGGGCGGCACCGGTACGGCGGTGCGGTGGACGGTTTCGATGTCGGCGCTAAAACCGGC	1497
Sbjct	1441	CCGGGCGCACCGGTACGGCGGTGCGGTGGACGGTTTCGATGTCGGCGCTAAAACCGGC	1500
Query	1498	ACGGCGCGCAAGTTCGTCAACGGGCGTTATGCCGACAACAAACA	1557
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Query	1558	GGTTTTGCCCCCGCCAAAAACCCCCGTGTGATTGTGGCGGTAACCATCGACGAACCGACT	1617
Sbjct	1561	GGTTTTGCCCCCGCCAAAAACCCCCGTGTGATTGTGGCGGTAACCATTGACGAACCGACT	1620
Query	1618	GCCCACGGCTATTACGGCGGCGTAGTGGCAGGGCCGCCCTTCaaaaaaTTATGGGCGGC	1677
Sbjct	1621	GCCCACGGCTATTACGGCGGCGTAGTGGCAGGGCCGCCCTTCAAAAAAATTATGGGCGGC	1680
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Sbjct	1681	AGCCTGAACATCTTGGGCATTTCCCCGACCAAGCCACTGACCGCCGCAGCCGTCAAAACA	1740
Query	1738	CCGTCTTA 1745	
Sbjct	1741	CCGTCTTA 1748	
> penA Length			
Score Ident	= 314	2 bits (1701), Expect = 0.0 = 1733/1748 (99%), Gaps = 3/1748 (0%) /Plus	
Score Ident	e = 314 .ities	= 1733/1748 (99%), Gaps = 3/1748 (0%)	60
Score Ident Stran	e = 314 ities id=Plus	= 1733/1748 (99%), Gaps = 3/1748 (0%) /Plus	60 60
Score Ident Stran	e = 314 ities d=Plus	= 1733/1748 (99%), Gaps = 3/1748 (0%) /Plus ATGTTGATTAAAAGCGAATATAAGCCCCGGATGCTGCCCAAAGAAGAGCAGGTCAAAAAG	
Score Ident Stran Query Sbjct	e = 314 ities d=Plus 1	= 1733/1748 (99%), Gaps = 3/1748 (0%) /Plus ATGTTGATTAAAAGCGAATATAAGCCCCGGATGCTGCCCAAAGAAGAGCAGGTCAAAAAG	60
Score Ident Stran Query Sbjct Query	e = 314 ities id=Plus 1 1	= 1733/1748 (99%), Gaps = 3/1748 (0%) /Plus ATGTTGATTAAAAGCGAATATAAGCCCCGGATGCTGCCCAAAGAAGAGCAGGTCAAAAAG	60
Score Ident Stran Query Sbjct Query Sbjct	= 314 ities d=Plus 1 1 61	= 1733/1748 (99%), Gaps = 3/1748 (0%) /Plus ATGTTGATTAAAAGCGAATATAAGCCCCGGATGCTGCCCAAAGAAGAGCAGGTCAAAAAG	60 120 120
Score Ident Stran Query Sbjct Query Sbjct Query	e = 314 ities d=Plus 1 1 61 61	= 1733/1748 (99%), Gaps = 3/1748 (0%) /Plus ATGTTGATTAAAAGCGAATATAAGCCCCGGATGCTGCCCAAAGAAGAGCAGGTCAAAAAG	60 120 120 180
Score Ident Stran Query Sbjct Query Sbjct Query Sbjct	= 314 ities d=Plus 1 1 61 61 121	= 1733/1748 (99%), Gaps = 3/1748 (0%) /Plus ATGTTGATTAAAAGCGAATATAAGCCCCGGATGCTGCCCAAAGAAGAGCAGGTCAAAAAG	60 120 120 180 180
Score Ident Stran Query Sbjct Query Sbjct Query Sbjct Query Sbjct	= 314 ities d=Plus 1 1 61 61 121 121 181	= 1733/1748 (99%), Gaps = 3/1748 (0%) /Plus ATGTTGATTAAAAGCGAATATAAGCCCCGGATGCTGCCCAAAGAAGAGCAGGTCAAAAAG	60 120 120 180 180 240
Score Ident Stran Query Sbjct Query Sbjct Query Sbjct Query Sbjct Query	e = 314 ities d=Plus 1 1 61 61 121 121 181	= 1733/1748 (99%), Gaps = 3/1748 (0%) /Plus ATGTTGATTAAAAGCGAATATAAGCCCCGGATGCTGCCCAAAGAAGAGCAGGTCAAAAAG	60 120 120 180 180 240 240
Score Ident Stran Query Sbjct Query Sbjct Query Sbjct Query Sbjct Query Sbjct	e = 314 ities d=Plus 1 1 61 61 121 121 181 181 241	= 1733/1748 (99%), Gaps = 3/1748 (0%) /Plus ATGTTGATTAAAAGCGAATATAAGCCCCGGATGCTGCCCAAAGAAGAGCAGGTCAAAAAG	60 120 120 180 180 240 240
Score Ident Stran Query Sbjct Query Sbjct Query Sbjct Query Sbjct Query Sbjct	= 314 ities d=Plus 1 1 61 61 121 181 181 241	= 1733/1748 (99%), Gaps = 3/1748 (0%) /Plus ATGTTGATTAAAAGCGAATATAAGCCCCGGATGCTGCCCAAAGAAGAGCAGGTCAAAAAG	60 120 120 180 180 240 240 300 300
Score Ident Stran Query Sbjct Query Sbjct Query Sbjct Query Sbjct Query Sbjct Query Sbjct	e = 314 ities d=Plus 1 1 61 61 121 181 181 241 241 301	= 1733/1748 (99%), Gaps = 3/1748 (0%) /Plus ATGTTGATTAAAAGCGAATATAAGCCCCGGATGCTGCCCAAAGAAGAGCAGGTCAAAAAG	60 120 120 180 180 240 240 300 300 360
Score Ident Stran Query Sbjct	e = 314 ities d=Plus 1 1 61 61 121 121 181 181 241 241 301	= 1733/1748 (99%), Gaps = 3/1748 (0%) /Plus ATGTTGATTAAAAGCGAATATAAGCCCCGGATGCTGCCCAAAGAAGAGCAGGTCAAAAAG	60 120 120 180 180 240 240 300 360 360

Sbjct	421	CGGCAGCTCGATCCCAAGGTTGCCGAAGAGGTCAAAGCCTTGGGTTTGGAAAACTTTGTA	480
Query	481	TTTGAAAAAGAATTAAAACGCCATTACCCGATGGGCAACCTGTTTGCACACGTCATCGGA	540
Sbjct	481	TTTGAAAAAGAATTAAAACGCCATTACCCGATGGGCAACCTGTTTGCACACGTCATCGGA	540
Query	541	$\tt TTTACCGATATTGACGGCAAAGGTCAGGAAGGTTTGGAACTTTCGCTTGAAGACAGCCTG$	600
Sbjct	541	TTTACCGATATTGACGGCAAAGGTCAGGAAGGTTTGGAACTTTCGCTTGAAGACAGCCTG	600
Query	601	${\tt TATGGCGAAGACGGCGGGAAGTTGTTTTGCGGGACCGGCAGGGCAATATTGTGGACAGC}$	660
Sbjct	601	TATGGCGAAGACGGCGGAAGTTGTTTTGCGGGACCGGCAGGCA	660
Query	661	TTGGACTCCCCGCGCAATAAAGCACCGCAAAACGGCAAAGACATCATCCTTTCCCTCGAT	720
Sbjct	661	TTGGACTCCCCGCGCAATAAAGCACCGCAAAACGGCAAAGACATCATCCTTTCCCTCGAT	720
Query	721	${\tt CAGAGGATTCAGACCTTGGCCTATGAAGAGTTGAACAAGGCGGTCGAATACCATCAGGCA}$	780
Sbjct	721	CAGAGGATTCAGACCTTGGCCTATGAAGAGTTGAACAAGGCGGTCGAATACCATCAGGCA	780
Query	781	AAAGCCGGAACGGTGGTTTTTGGATGCCCGCACGGGGGAAATCCTCGCCTTGGCCAAT	840
Sbjct	781	AAAGCCGGAACGGTGGTTTTTGGATGCCCGCACGGGGGAAATCCTCGCCTTGGCCAAT	840
Query	841	ACGCCCGCCTACGATCCCAACAGACCCGGCCGGGCAGACAGCGAACAGCGGCGCAACCGT	900
Sbjct	841	ACGCCCGCCTACGATCCCAACAGACCCGGCCGGGCAGACAGCGAACAGCGGCGCAACCGT	900
Query	901	GCCGTAACCGATATGATCGAACCTGGTTCGGCAATCAAACCGTTCGTGATTGCGAAGGCA	960
Sbjct	901	GCCGTAACCGATATGATCGAACCTGGTTCGGCAATCAAACCGTTCGTGATTGCGAAGGCA	960
Query	961	TTGGATGCGGGCAAAACCGATTTGAACGAACGGCTGAATACGCAGCCTTATAAAATCGGA	1020
Sbjct	961	TTGGATGCGGGCAAAACCGATTTGAACGAACGGCTGAATACGCAGCCTTATAAAATCGGA	1020
Query	1021	CCGTCTCCCGTGCGCGATACCCATGTTTACCCCTCTTTGGATGTGCGCGGCATTATG	1077
Sbjct	1021	CCGTCTCCCGTGCGCGACGATACCCATGTTTACCCCTCTTTGGATGTGCGCGGCATTATG	1080
Query	1078	CAGAAATCGTCCAACGTCGGCACAAGCAAACTGTCTGCGCGTTTCGGCGCCGAAGAAATG	1137
Sbjct	1081	CAGAAATCGTCCAACGTCGGCACAAGCAAACTGTCTGCGCGTTTCGGCGCCGAAGAAATG	1140
Query	1138	TATGACTTCTATCATGAATTGGGCATCGGTGTGCGTATGCACTCGGGCTTTCCGGGGGAA	1197
Sbjct	1141	TATGACTTCTATCATGAATTGGGCATCGGTGTGCGTATGCACTCGGGGCTTTCCGGGGGAA	1200
Query	1198	ACTGCAGGTTTGTTGAGAAATTGGCGCAGGTGGCGGCCCATCGAACAGGCGACGATGTCT	1257
Sbjct	1201	ACTGCAGGTTTGTTGAGAAATTGGCGCAGGTGGCGGCCCATCGAACAGGCGACGATGTCT	1260
Query	1258	TTCGGTTACGGTCTGCAATTGAGCCTGCTGCAATTGGCGCGCGC	1317
Sbjct	1261	TTCGGTTACGGCCTGCAATTGAGCCTGCTATACCGCACTGACG	1320
Query	1318	CACGACGGCGTTTTGCTGCCGCTCAGCTTTGAGAAGCAGGCGGTTGCGCCGCAAGGCAAA	1377
Sbjct	1321	CACGACGGCGTTTTGCTGCCGCTCAGCTTTGAGAAGCAGGCGGTTGCGCCGCAAGGCAAA	1380
Query	1378	CGCATATTCAAAGAATCGACCGCGCGCGAGGTACGCAATCTGATGGTTTCCGTAACCGAG	1437
Sbjct	1381	CGCATATTCAAAGAATCGACCGCGCGCGAGGTACGCAATCTGATGGTTTCCGTAACCGAG	1440
Query	1438	CCGGGCGCACCGGTACGGCGGTGCGGTGGACGGTTTCGATGTCGGCGCTAAAACCGGC	1497
Sbjct	1441	CCGGGCGCACCGGTACGGCGGTGCGGTGGACGGTTTCGATGTCGGCGCTAAAACCGGT	1500

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Query
    1498
         ACGGCGCGCAAGTTCGTCAACGGGCGTTATGCCGACAACAACACGTCGCTACCTTTATC
                                                       1557
         Sbjct
     1501
         ACGGCGCGCAAACTGGTCAATGGCCGCTATGTGGACAACAACACGTCGGTACGTTTATC
                                                       1560
    1558
         \tt GGTTTTGCCCCCGCCAAAAACCCCCGTGTGATTGTGGCGGTAACCATCGACGAACCGACT
Query
         1561
         GGTTTTGCCCCCGCCAAAACCCCCGTGTGATTGTGGCGGTAACCATCGACGACCAC
                                                       1620
Sbict
     1618
         {\tt GCCCACGGCTATTACGGCGGCGTAGTGGCAGGGCCGCCCTTCaaaaaaaaTTATGGGCGGC}
Query
                                                       1677
         1621
         GCCCACGGCTATTACGGCGGCGTAGTGGCAGGGCCGCCCTTCAAAAAATTATGGGCGGC
Sbjct
         AGCCTGAACATCTTGGGCATTTCCCCGACCAAGCCACTGACCGCCGCAGCCGTCAAAACA
                                                       1737
    1678
Query
         Sbjct
     1681
         AGCCTGAACATCTTGGGCATTTCCCCGACCAAGCCACTGACCGCCGCAGCCGTCAAAACA
                                                       1740
    1738
         CCGTCTTA 1745
Query
         Sbict
    1741
         CCGTCTTA 1748
> penA2.001
Length=1749
Score = 3131 bits (1695), Expect = 0.0
Identities = 1731/1748 (99%), Gaps = 3/1748 (0%)
Strand=Plus/Plus
Query 1
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         Sbjct
     1
         ATGTTGATTAAAAGCGAATATAAGCCCCGGATGCTGCCCAAAGAAGAGCAGGTCAAAAAG
         CCGATGACCAGTAACGGACGGATTAGCTTCGTCCTGATGGCAATGGCGGTCTTGTTTGCC
Ouerv
     61
                                                       12.0
         Sbjct
     61
         CCGATGACCAGTAACGGACGGATTAGCTTCGTCCTGATGGCAATGGCGGTCTTGTTTGCC
                                                       120
     121
         TGTCTGATTGCCCGCGGGCTGTATCTGCAGACGGTAACGTATAACTTTTTGAAAGAACAG
Query
         121
         TGTCTGATTGCCCGCGGGCTGTATCTGCAGACGGTAACGTATAACTTTTTGAAAGAACAG
                                                       180
Sbict
Ouerv
     181
         GGCGACAACCGGATTGTGCGGACTCAAGCATTGCCGGCTACACGCGGTACGGTTTCGGAC
                                                       240
         Sbjct
     181
         GGCGACAACCGGATTGTGCGGACTCAAGCATTGCCGGCTACACGCGGTACGGTTTCGGAC
                                                       240
     241
         \tt CGGAACGGTGCGGTTTTGGCGTTGAGCGCGCGACGGAGTCCCTGTTTGCCGTGCCTAAA
                                                       300
Ouerv
         Sbjct
     241
         CGGAACGGTGCGGTTTTGGCGTTGAGCGCGCCGACGGAGTCCCTGTTTGCCGTGCCTAAA
                                                       300
     301
         GATATGAAGGAAATGCCGTCTGCCGCCCAATTGGAACGCCTGTCCGAGCTTGTCGATGTG
Query
                                                       360
         301
         GATATGAAGGAAATGCCGTCTGCCGCCCAATTGGAACGCCTGTCCGAGCTTGTCGATGTG
                                                       360
Sbjct
Query
     361
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                                                       42.0
         Sbjct
     361
         CCGGTCGATGTTTTGAGGAACAAACTCGAACAGAAAGGCAAGTCGTTTATTTGGATCAAG
                                                       420
Ouerv
     421
         \tt CGGCAGCTCGATCCCAAGGTTGCCGAAGAGGTCAAAGCCTTGGGTTTGGAAAACTTTGTA
         421
         CGGCAGCTCGATCCCAAGGTTGCCGAAGAGGTCAAAGCCTTGGGTTTGGAAAACTTTGTA
                                                       480
Sbjct
Ouerv
     481
         TTTGAAAAAGAATTAAAACGCCATTACCCGATGGGCAACCTGTTTGCACACGTCATCGGA
                                                       540
         481
         TTTGAAAAAGAATTAAAACGCCATTACCCGATGGGCAACCTGTTTGCACACGTCATCGGA
                                                       540
Sbict
         TTTACCGATATTGACGGCAAAGGTCAGGAAGGTTTGGAACTTTCGCTTGAAGACAGCCTG
Query
     541
                                                       600
         Sbjct
     541
         \verb|TTTACCGATATTGACGGCAAAGGTCAGGAAGGTTTGGAACTTTCGCTTGAAGACAGCCTG|
                                                       600
Ouerv
     601
         TATGGCGAAGACGCCGCAGGTTGTTTTGCGGGACCGGCAGGCCAATATTGTGGACAGC
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Sbjct	601	TATGGCGAAGACGGCGCGGAAGTTGTTTTGCGGGACCGGCAGGGCAATATTGTGGACAGC	660
Query	661	TTGGACTCCCCGCGCAATAAAGCACCGCAAAACGGCAAAGACATCATCCTTTCCCTCGAT	720
Sbjct	661	TTGGACTCCCCGCGCAATAAAGCACCGCAAAACGGCAAAGACATCATCCTTTCCCTCGAT	720
Query	721	CAGAGGATTCAGACCTTGGCCTATGAAGAGTTGAACAAGGCGGTCGAATACCATCAGGCA	780
Sbjct	721	CAGAGGATTCAGACCTTGGCCTATGAAGAGTTGAACAAGGCGGTCGAATACCATCAGGCA	780
Query	781	AAAGCCGGAACGGTGGTGTTTTGGATGCCCGCACGGGGGAAATCCTCGCCTTGGCCAAT	840
Sbjct	781	AAAGCCGGAACGGTGGTTTTTGGATGCCCGCACGGGGGAAATCCTCGCCTTGGCCAAT	840
Query	841	ACGCCCGCCTACGATCCCAACAGACCCGGCCGGCAGACAGCGAACAGCGGCGCAACCGT	900
Sbjct	841	ACGCCCGCCTACGATCCCAACAGACCCGGCCGGGCAGACAGCGGAACAGCGGCGCAACCGT	900
Query	901	GCCGTAACCGATATGATCGAACCTGGTTCGGCAATCAAACCGTTCGTGATTGCGAAGGCA	960
Sbjct	901	GCCGTAACCGATATGATCGAACCTGGTTCGGCAATCAAACCGTTCGTGATTGCGAAGGCA	960
Query	961	TTGGATGCGGGCAAAACCGATTTGAACGAACGGCTGAATACGCAGCCTTATAAAATCGGA	1020
Sbjct	961	TTGGATGCGGGCAAAACCGATTTGAACGAACGGCTGAATACGCAGCCTTATAAAATCGGA	1020
Query	1021	CCGTCTCCCGTGCGCGATACCCATGTTTACCCCTCTTTGGATGTGCGCGGCATTATG	1077
Sbjct	1021	CCGTCTCCCGTGCGCGACGATACCCATGTTTACCCCTCTTTGGATGTGCGCGGCATTATG	1080
Query	1078	CAGAAATCGTCCAACGTCGGCACAAGCAAACTGTCTGCGCGTTTCGGCGCCGAAGAAATG	1137
Sbjct	1081	CAGAAATCGTCCAACGTCGGCACAAGCAAACTGTCTGCGCGTTTCGGCGCCGAAGAAATG	1140
Query	1138	TATGACTTCTATCATGAATTGGGCATCGGTGTGCGTATGCACTCGGGCTTTCCGGGGGAA	1197
Sbjct	1141	TATGACTTCTATCATGAATTGGGCATCGGTGTGCGTATGCACTCGGGGCTTTCCGGGGGAA	1200
Query	1198	ACTGCAGGTTTGTTGAGAAATTGGCGCAGGTGGCGGCCCATCGAACAGGCGACGATGTCT	1257
Sbjct	1201	ACTGCAGGTTTGTTGAGAAATTGGCGCAGGTGGCGGCCCATCGAACAGGCGACGATGTCT	1260
Query	1258	TTCGGTTACGGTCTGCAATTGACCTGCTGCAATTGGCGCGCCCTATACCGCACTGACG	1317
Sbjct	1261	TTCGGTTACGGCCTGCAATTGAGCCTGCTGCAATTGGCGCGCCCTATACCGCACTGACG	1320
Query	1318	CACGACGGCGTTTTGCTGCCGCTCAGCTTTGAGAAGCAGGCGGTTGCGCCGCAAGGCAAA	1377
Sbjct	1321	CACGACGCGTTTTGCTGCCGCTCAGCTTTGAGAAGCAGGCGGTTGCGCCGCAAGGCAAA	1380
Query	1378	CGCATATTCAAAGAATCGACCGCGCGCGGGGTACGCAATCTGATGGTTTCCGTAACCGAG	1437
Sbjct	1381	CGCATATTCAAAGAATCGACCGCGCGCGAGGTACGCAATCTGATGGTTTCCGTAACCGAG	1440
Query	1438	CCGGGCGCACCGGTACGGCGGTGCGGTGGACGGTTTCGATGTCGGCGCTAAAACCGGC	1497
Sbjct	1441	CCGGGCGCACCGGTACGGCGGTGCGGTGGACGGTTTCGATGTCGGCGCTAAAACCGGT	1500
Query	1498	ACGGCGCGAAGTTCGTCAACGGGCGTTATGCCGACAACAACAGTCGCTACCTTTATC	1557
Sbjct	1501	ACGGCGCGCAAACTGGTCAATGGCCGCTATGTGGACAACAACACGTCGGTACGTTTATC	1560
Query	1558	GGTTTTGCCCCCGCCAAAAACCCCCGTGTGATTGTGGCGGTAACCATCGACGAACCGACT	1617
Sbjct	1561	GGTTTTGCCCCCGCCAAAAACCCCCGTGTGATTGTGGCCGTTACCATCGACGAACCGACT	1620
Query	1618	GCCCACGGCTATTACGGCGGCGTAGTGGCAGGGCCGCCCTTCaaaaaaTTATGGGCGGC	1677
Sbjct	1621	GCCCACGGCTATTACGGCGGCGTAGTGGCAGGGCCGCCCTTCAAAAAAATTATGGGCGGC	1680

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Query
    1678
         AGCCTGAACATCTTGGGCATTTCCCCGACCAAGCCACTGACCGCCGCAGCCGTCAAAACA
                                                       1737
         1681
         AGCCTGAACATCTTGGGCATTTCCCCGACCAAGCCACTGACCGCCGCAGCCGTCAAAACA
                                                       1740
    1738
         CCGTCTTA 1745
Query
         Sbjct 1741
         CCGTCTTA 1748
> penA2.003
Length=1749
Score = 3125 \text{ bits } (1692), Expect = 0.0
Identities = 1730/1748 (99%), Gaps = 3/1748 (0%)
Strand=Plus/Plus
Query 1
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         Sbict
     1
         ATGTTGATTAAAAGCGAATATAAGCCCCGGATGCTGCCCAAAGAAGAGCAGGTCAAAAAG
                                                       60
Query
     61
         CCGATGACCAGTAACGGACGGATTAGCTTCGTCCTGATGGCAATGGCGGTCTTGTTTGCC
                                                       120
         \verb|CCGATGACCAGTAACGGACGGATTAGCTTCGTCCTGATGGCAATGGCGGTCTTGTTTGCC|\\
Sbjct
     61
                                                       120
         TGTCTGATTGCCCGCGGGCTGTATCTGCAGACGGTAACGTATAACTTTTTGAAAGAACAG
     121
                                                       180
Query
         121
         TGTCTGATTGCCCGCGGGCTGTATCTGCAGACGTATAACTTTTTGAAAGAACAG
                                                       180
Sbjct
Query
     181
         {\tt GGCGACAACCGGATTGTGCGGACTCAAGCATTGCCGGCTACACGCGGTACGGTTTCGGAC}
                                                       240
         Sbjct
     181
         GGCGACAACCGGATTGTGCGGACTCAAGCATTGCCGGCTACACGCGGTACGGTTTCGGAC
                                                       240
         CGGAACGGTGCGGTTTTGGCGTTGAGCGCGCCGACGGAGTCCCTGTTTGCCGTGCCTAAA
Ouerv
     241
                                                       300
         Sbjct
     241
         CGGAACGGTGCGGTTTTGGCGTTGAGCGCGCCGACGGAGTCCCTGTTTGCCGTGCCTAAA
                                                       300
     301
         GATATGAAGGAAATGCCGTCTGCCGCCCAATTGGAACGCCTGTCCGAGCTTGTCGATGTG
                                                       360
Query
         GATATGAAGGAAATGCCGTCTGCCGCCCAATTGGAACGCCTGTCCGAGCTTGTCGATGTG
     301
                                                       360
Sbict
Ouerv
     361
         CCGGTCGATGTTTTGAGGAACAAACTCGAACAGAAAGGCAAGTCGTTTATTTGGATCAAG
                                                       420
         Sbjct
     361
         CCGGTCGATGTTTTGAGGAACAAACTCGAACAGAAAGGCAAGTCGTTTATTTGGATCAAG
                                                       420
     421
         \tt CGGCAGCTCGATCCCAAGGTTGCCGAAGAGGTCAAAGCCTTGGGTTTGGAAAACTTTGTA
                                                       480
Ouerv
         Sbjct
     421
         CGGCAGCTCGATCCCAAGGTTGCCGAAGAGGTCAAAGCCTTGGGTTTGGAAAACTTTGTA
                                                       480
     481
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Query
                                                       540
         481
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                                                       540
Sbict
Query
     541
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                                                       600
         Sbjct
     541
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                                                       600
Ouerv
     601
         TATGGCGAAGACGGCGCGGAAGTTGTTTTGCGGGACCGGCAGGCCAATATTGTGGACAGC
                                                       660
         601
         TATGGCGAAGACGGCGGGAAGTTGTTTTGCGGGACCGGCAGGGCAATATTGTGGACAGC
                                                       660
Sbjct
Ouerv
     661
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                                                       720
         TTGGACTCCCCGCGCAATAAAGCACCGCAAAACGGCAAAGACATCATCCTTTCCCTCGAT
                                                       72.0
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Sbict
     721
Query
         CAGAGGATTCAGACCTTGGCCTATGAAGAGTTGAACAAGGCGGTCGAATACCATCAGGCA
                                                       780
         Sbjct
     721
         CAGAGGATTCAGACCTTGGCCTATGAAGAGTTGAACAAGGCGGTCGAATACCATCAGGCA
                                                       780
Ouerv
     781
         AAAGCCGGAACGTGGTGTTTTGGATGCCCGCACGGGGGAAATCCTCGCCTTGGCCAAT
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Sbjct	781	${\tt AAAGCCGGAACGGTGGTGTTTTGGATGCCCGCACGGGGGAAATCCTCGCCTTGGCCAAT}$	840
Query	841	ACGCCCGCCTACGATCCCAACAGACCCGGCCGGGCAGACAGCGAACAGCGGCGCAACCGT	900
Sbjct	841	ACGCCCGCCTACGATCCCAACAGACCCGGCCGGGCAGACAGCGAACAGCGGCGCAACCGT	900
Query	901	GCCGTAACCGATATGATCGAACCTGGTTCGGCAATCAAACCGTTCGTGATTGCGAAGGCA	960
Sbjct	901	GCCGTAACCGATATGATCGAACCTGGTTCGGCAATCAAACCGTTCGTGATTGCGAAGGCA	960
Query	961	TTGGATGCGGGCAAAACCGATTTGAACGAACGGCTGAATACGCAGCCTTATAAAATCGGA	1020
Sbjct	961	TTGGATGCGGGCAAAACCGATTTGAACGAACGGCTGAATACGCAGCCTTATAAAATCGGA	1020
Query	1021	CCGTCTCCCGTGCGCGATACCCATGTTTACCCCTCTTTGGATGTGCGCGGCATTATG	1077
Sbjct	1021	CCGTCTCCCGTGCGCGACGATACCCATGTTTACCCCTCTTTGGATGTGCGCGGCATTATG	1080
Query	1078	CAGAAATCGTCCAACGTCGGCACAAGCAAACTGTCTGCGCGTTTCGGCGCCGAAGAAATG	1137
Sbjct	1081	CAGAAATCGTCCAACGTCGGCACAAGCAAACTGTCTGCGCGCTTTCGGCGCCGAAGAAATG	1140
Query	1138	TATGACTTCTATCATGAATTGGGCATCGGTGTGCGTATGCACTCGGGCTTTCCGGGGGAA	1197
Sbjct	1141	TATGACTTCTATCATGAATTGGGCATCGGTGTGCGTATGCACTCGGGGCTTTCCGGGGGAA	1200
Query	1198	ACTGCAGGTTTGTTGAGAAATTGGCGCAGGTGGCGGCCCATCGAACAGGCGACGATGTCT	1257
Sbjct	1201	ACTGCAGGTTTGTTGAGAAATTGGCGCAGGTGGCCGCCCATCGAACAGGCGACGATGTCT	1260
Query	1258	TTCGGTTACGGTCTGCAATTGAGCCTGCTGCAATTGGCGCGCGC	1317
Sbjct	1261	TTCGGTTACGGCCTGCAATTGAGCCTGCCAATTGGCGCGCCCCTATACCGCACTGACG	1320
Query	1318	CACGACGGCGTTTTGCTGCCGCTCAGCTTTGAGAAGCAGGCGGTTGCGCCGCAAGGCAAA	1377
Sbjct	1321	CACGACGGCGTTTTGCTGCCGCTCAGCTTTGAGAAGCAGGCGGTTGCGCCGCAAGGCAAA	1380
Query	1378	CGCATATTCAAAGAATCGACCGCGCGCGGGGTACGCAATCTGATGGTTTCCGTAACCGAG	1437
Sbjct	1381	CGCATATTCAAAGAATCGACCGCGCGCGAGGTACGCAATCTGATGGTTTCCGTAACCGAG	1440
Query	1438	CCGGGCGCACCGGTACGGCGGTGCGGTGGACGGTTTCGATGTCGGCGCTAAAACCGGC	1497
Sbjct	1441	CCGGGCGCACCGGTACGGCGGTGCGGTGGACGGTTTCGATGTCGGCGCTAAAACCGGT	1500
Query	1498	ACGGCGCGCAAGTTCGTCAACGGGCGTTATGCCGACAACAAACA	1557
Sbjct	1501	ACGGCGCGCAAACTGGTCAATGGCCGCTATGTGGACAACAAACA	1560
Query	1558	GGTTTTGCCCCCGCCAAAAACCCCCGTGTGATTGTGGCGGTAACCATCGACGAACCGACT	1617
Sbjct	1561	GGTTTTGCCCCCGCCAAAAACCCCCGTGTGATTGTGGCCGTTACCATCGACGAACCGACT	1620
Query	1618	GCCCACGGCTATTACGGCGGCGTAGTGGCAGGGCCGCCCTTCaaaaaaTTATGGGCGGC	1677
Sbjct	1621	GCCCACGGCTATTACGGCGGCGTAGTGGCAGGGCCGCCTTCAAAAAAATTATGGGCGGC	1680
Query	1678	AGCCTGAACATCTTGGGCATTTCCCCGACCAAGCCACTGACCGCCGCAGCCGTCAAAACA	1737
Sbjct	1681	AGCCTGAACATCTTGGGCATTTCCCCGCCCAAGCCACTGACCGCCGCAGCCGTCAAAACA	1740
Query	1738	CCGTCTTA 1745	
Sbjct	1741	CCGTCTTA 1748	

Score = 3090 bits (1673), Expect = 0.0 Identities = 1726/1751 (99%), Gaps = 6/1751 (0%) Strand=Plus/Plus

Query	1	ATGTTGATTAAAAGCCGAATATAAGCCCCGGATGCTGCCCAAAGAAGAAGAGCAGGTCAAAAAAG	60
Sbjct	1	ATGTTGATTAAAAGCGAATATAAGCCCCGGATGCTGCCCAAAGAAGAAGAGCAGGTCAAAAAAG	60
Query	61	CCGATGACCAGTAACGGACGGATTAGCTTCGTCCTGATGGCAATGGCGGTCTTGTTTGCC	120
Sbjct	61	CCGATGACCAGTAACGGACTGGATTAGCTTCGTCCTGATGGCAATGGCGGTCTTGTTTGCC	120
Query	121	TGTCTGATTGCCCGCGGGCTGTATCTGCAGACGGTAACGTATAACTTTTTGAAAGAACAG	180
Sbjct	121	TGTCTGATTGCCCGCGGGCTGTATCTGCAGACGGTAACGTATAACTTTTTGAAAGAACAG	180
Query	181	GGCGACAACCGGATTGTGCGGACTCAAGCATTGCCGGCTACACGCGGTACGGTTTCGGAC	240
Sbjct	181	GGCGACAACCGGATTGTGCGGACTCAAGCATTGCCGGCTACACGCGGTACGGTTTCGGAC	240
Query	241	CGGAACGGTGCGGTTTTGGCGTTGAGCGCGCCGACGGAGTCCCTGTTTGCCGTGCCTAAA	300
Sbjct	241	CGGAACGGTGCGGTTTTGGCGTTGAGCGCGCCGACGGAGTCCCTGTTTGCCGTGCCTAAA	300
Query	301	GATATGAAGGAAATGCCGTCTGCCGCCCAATTGGAACGCCTGTCCGAGCTTGTCGATGTG	360
Sbjct	301	GATATGAAGGAAATGCCGTCTGCCGCCCAATTGGAACGCCTGTCCGAGCTTGTCGATGTG	360
Query	361	CCGGTCGATGTTTTGAGGAACAAACTCGAACAGAAAGGCAAGTCGTTTATTTGGATCAAG	420
Sbjct	361	CCGGTCGATGTTTTGAGGAACAAACTCGAACAGAAAGGCAAGTCGTTTATTTGGATCAAG	420
Query	421	CGGCAGCTCGATCCCAAGGTTGCCGAAGAGGTCAAAGCCTTGGGTTTGGAAAACTTTGTA	480
Sbjct	421	CGGCAGCTCGATCCCAAGGTTGCCGAAGAGGTCAAAGCCTTGGGTTTGGAAAACTTTGTA	480
Query	481	TTTGAAAAGAATTAAAACGCCATTACCCGATGGGCAACCTGTTTGCACACGTCATCGGA	540
Sbjct	481	TTTGAAAAAGAATTAAAACGCCATTACCCGATGGGCAACCTGTTTGCACACGTCATCGGA	540
Query	541	TTTACCGATATTGACGGCAAAGGTCAGGAAGGTTTGGAACTTTCGCTTGAAGACAGCCTG	600
Sbjct	541	TTTACCGATATTGACGGCAAAGGTCAGGAAGGTTTGGAACTTTCGCTTGAAGACAGCCTG	600
Query	601	TATGGCGAAGACGGCGGGAAGTTGTTTTGCGGGACCGGCAGGCA	660
Sbjct	601	TATGGCGAAGACGGCGGAAGTTGTTTTGCGGGACCGGCAGGGCAATATTGTGGACAGC	660
Query	661	TTGGACTCCCCGCGCAATAAAGCACCGCAAAACGGCAAAGACATCATCCTTTCCCTCGAT	720
Sbjct	661	TTGGACTCCCGCGCAATAAAGCACCGCAAAACGGCAAAGACATCATCCTTTCCCTCGAT	720
Query	721	CAGAGGATTCAGACCTTGGCCTATGAAGAGTTGAACAAGGCGGTCGAATACCATCAGGCA	780
Sbjct	721	CAGAGGATTCAGACCTTGGCCTATGAAGAGTTGAACAAGGCGGTCGAATACCATCAGGCA	780
Query	781	AAAGCCGGAACGGTGGTGTTTTGGATGCCCGCACGGGGGAAATCCTCGCCTTGGCCAAT	840
Sbjct	781	AAAGCCGGAACGGTGGTTTTTGGATGCCCGCACGGGGGAAATCCTCGCCTTGGCCAAT	840
Query	841	ACGCCCGCCTACGATCCCAACAGACCCGGCCGGCAGACAGCGAACAGCGGCGCAACCGT	900
Sbjct	841	ACGCCCGCCTACGATCCCAACAGACCCGGCCGGGCAGACAGCGAACAGCGGCGCAACCGT	900
Query	901	GCCGTAACCGATATGATCGAACCTGGTTCGGCAATCAAACCGTTCGTGATTGCGAAGGCA	960
Sbjct	901		960
Query	961	TTGGATGCGGGCAAAACCGATTTGAACGAACGGCTGAATACGCAGCCTTATAAAATCGGA	1020

Sbjct	961	$\tt TTGGATGCGGGCAAAACCGATTTGAACGAACGGCTGAATACGCAGCCTTATAAAATCGGA$	1020
Query	1021	CCGTCTCCCGTGCGCGATACCCATGTTTACCCCTCTTTGGATGTGCGCGGCATTATG	1077
Sbjct	1021	CCGTCTCCCGTGCGCGACGATACCCATGTTTACCCCTCTTTGGATGTGCGCGGCATTATG	1080
Query	1078	CAGAAATCGTCCAACGTCGGCACAAGCAAACTGTCTGCGCGTTTCGGCGCCGAAGAAATG	1137
Sbjct	1081	CAGAAATCGTCCAACGTCGGCACAAGCAAACTGTCTGCGCGCTTTCGGCGCCGAAGAAATG	1140
Query	1138	TATGACTTCTATCATGAATTGGGCATCGGTGTGCGTATGCACTCGGGCTTTCCGGGGGAA	1197
Sbjct	1141	TATGACTTCTATCATGAATTGGGCATCGGTGTGCGTATGCACTCGGGGCTTTCCGGGGGAA	1200
Query	1198	ACTGCAGGTTTGTTGAGAAATTGGCGCAGGTGGCGCCCATCGAACAGGCGACGATGTCT	1257
Sbjct	1201	ACTGCAGGTTTGTTGAGAAATTGGCGCAGGTGGCGGCCCATCGAACAGGCGACGATGTCT	1260
Query	1258	TTCGGTTACGGTCTGCAATTGAGCCTGCTGCAATTGGCGCGCCCTATACCGCACTGACG	1317
Sbjct	1261	TTCGGTTACGGCCTGCAATTGAGCCTGCCAATTGGCGCGCCCCTATACCGCACTGACG	1320
Query	1318	CACGACGGCGTTTTGCTGCCGCTCAGCTTTGAGAAGCAGGCGGTTGCGCCGCAAGGCAAA	1377
Sbjct	1321	CACGACGGCGTTTTGCTGCCGCTCAGCTTTGAGAAGCAGGCGGTTGCGCCGCAAGGCAAA	1380
Query	1378	CGCATATTCAAAGAATCGACCGCGCGCGGGGGTACGCAATCTGATGGTTTCCGTAACCGAG	1437
Sbjct	1381	CGCATATTCAAAGAATCGACCGCGCGCGAGGTACGCAATCTGATGGTTTCCGTAACCGAG	1440
Query	1438	CCGGGCGCACCGGTACGGCGGTGCGGTGGACGGTTTCGATGTCGGCGCTAAAACCGGC	1497
Sbjct	1441	CCGGGCGCACCGGTACGGCGGTGCGGTGGACGGTTTCGATGTCGGCGCTAAAACCGGT	1500
Query	1498	ACGGCGCGAAGTTCGTCAACGGGCGTTATGCCGACAACAACACGTCGCTACCTTTATC	1557
Sbjct	1501	ACGGTGCGCAAACTGGTCAATGGCCGCTATGTGGACAACAACACGTCGGTACGTTTATC	1560
Query	1558	GGTTTTGCCCCGCCAAAAACCCCCGTGTGATTGTGGCGGTAACCATCGACGAACCGACT	1617
Sbjct	1561	GGTTTTGCCCCGCCAAAAACCCCCGTGTGATTGTGGCGGTAACCATCGACGAACCGACT	1620
Query	1618	GCCCACGGCTATTACGGCGGCGTAGTGGCAGGGCCGCCCTTCaaaaaaTTATGGGCGGC	1677
Sbjct	1621	GCCCACGGCTATTACGGCGGCGTAGTGGCAGGGCCGCCCTTCAAAAAAATTATGGGCGGC	1680
Query	1678	AGCCTGAACATCTTGGGCATTTCCCCGACCAAGCCACTGACCGCCGCAGCCGTCAAA	1734
Sbjct	1681	AGCCTGAACATCTTGGGCGTTTCCCCGACCAAACCTTTGACCAATGTTGCAGCCGTCAAA	1740
Query	1735	ACACCGTCTTA 1745	
Sbjct	1741	ACACCGTCTTA 1751	

Lambda K H 1.33 0.621 1.12

Gapped
Lambda K H
1.28 0.460 0.850

Effective search space used: 28036800

Query= Length=702

Score E (Bits) Value Sequences producing significant alignments:

mtrR mtrR mtrR mtrR	0.000 1.000 6.000 5.000 4.000		1297 1243 1234 1227 1221 1221
> mtrR Length			
Ident	ities	97 bits (702), Expect = 0.0 = 702/702 (100%), Gaps = 0/702 (0%) ss/Plus	
Query	1	TTGCACGGATAAAAAGTCttttttataATCCGCCCTCGTCAAACCGACCCGAAACGA	
Sbjct	1	TTGCACGGATAAAAAGTCTTTTTTTATAATCCGCCCTCGTCAAACCGACCCGAAACGA	
Query	61	ACGCCATTATGAGAAAACCAAAACCGAAGCCTTGAAAACCAAAGAACACCTGATGCT	
Sbjct	61	ACGCCATTATGAGAAAAACCAAAACCGAAGCCTTGAAAACCAAAGAACACCTGATGCT	
Query	121	CCGCCTTGGAAACCTTTTACCGCAAAGGGATTGCCCGCACCTCGCTCAACGAAATCGC	
Sbjct	121	CCGCCTTGGAAACCTTTTACCGCAAAGGGATTGCCCGCACCTCGCTCAACGAAATCGC	
Query	181	AAGCCGCCGGCGTAACGCGCGCGCGCTTTATTGGCATTTCAAAAATAAGGAAGACTT	
Sbjct	181	AAGCCGCCGGCGTAACGCGCGCGCGCTTTATTGGCATTTCAAAAATAAGGAAGACTT	
Query	241	TCGACGCGCTGTTCCAACGTATCTGCGACGACATCGAAAACTGCATCGCGCAAGATGC	
Sbjct	241	TCGACGCGCTGTTCCAACGTATCTGCGACGACATCGAAAACTGCATCGCGCAAGATGC	
Query	301	CAGATGCCGAAGGAGGGTCTTGGGCGGTATTCCGCCACACGCTGCTGCACTTTTTCGA	
Sbjct	301	CAGATGCCGAAGGAGGGTCTTGGGCGGTATTCCGCCACACGCTGCTGCACTTTTTCGA	
Query	361	GGCTGCAAAGCAACGACATCTACTACAAATTCCACAACATCCTGTTTTTAAAATGCGA	
Sbjct	361	GGCTGCAAAGCAACGACATCTACTACAAATTCCACAACATCCTGTTTTTAAAATGCGA	
Query	421	ACACGGAGCAAAACGCCGCCGTTATCGCCATTGCCCGCAAGCATCAGGCAATCTGGCG	
Sbjct	421	ACACGGAGCAAAACGCCGCCGTTATCGCCATTGCCCGCAAGCATCAGGCAATCTGGCG	
Query	481	AGAAAATTACCGCCGTTTTGACCGAAGCGGTGGAAAATCAGGATTTGGCTGACGATTT	
Sbjct	481	AGAAAATTACCGCCGTTTTGACCGAAGCGGTGGAAAATCAGGATTTGGCTGACGATTT	
Query	541	ACAAGGAAACGGCGGTCATCTTCATCAAATCGACGTTGGACGGGCTGATTTGGCGTTG	
Sbjct	541	ACAAGGAAACGGCGGTCATCTCATCAAATCGACGTTGGACGGGCTGATTTGGCGTTG	
Query	601	TCTCTTCCGGCGAAAGTTTCGATTTGGGCAAAACCGCCCCCGCGCATCATCGGGATA	
Sbjct	601	TCTCTTCCGGCGAAAGTTTCGATTTGGGCAAAACCGCCCCCGCGCATCATCGGGATA	
Query	661	GATGGACAACTTGGAAAACCATCCCTGCCTGCGCCGGAAATA 702	
Sbjct	661	GATGGACAACTTGGAAAACCATCCCTGCCTGCCGGGAAATA 702	
> mtrR	1.000		

0.0 0.0 0.0 0.0 0.0

> mtrR1.000 Length=699

Score = 1243 bits (673), Expect = 0.0 Identities = 693/702 (99%), Gaps = 4/702 (1%)

Query	1	TTGCACGGATAAAAAGTCttttttATAATCCGCCCTCGTCAAACCGACCCGAAACGAAA	60
Sbjct	1	TTGCACGGAT-AAAAGTC-TTTTTTATAATCCGCCCTCGTCAAACCGACCCGAAACGAAA	58
Query	61	ACGCCATTATGAGAAAACCAAAACCGAAGCCTTGAAAAACCAAAGAACACCTGATGCTTG	120
Sbjct	59	ACGCCATTATGAGAAAACCAAAACCGAAGCCTTGAAAAACCAAAGAACACCTGATGCTTG	118
Query	121	CCGCCTTGGAAACCTTTTACCGCAAAGGGATTGCCCGCACCTCGCTCAACGAAATCGCCC	180
Sbjct	119	CCGCCTTGGAAACCTTTTACCGCAAAGGGATTGCCCGCACCTCGCTCAACGAAATCGCCC	178
Query	181	AAGCCGCCGGCGTAACGCGCGCGCGCTTTATTGGCATTTCAAAAATAAGGAAGACTTGT	240
Sbjct	179	AAGCCGCCGGCGTAACGCGCGCGCCTCTATTGGCATTTCAAAAATAAGGAAGACTTGT	238
Query	241	TCGACGCGCTGTTCCAACGTATCTGCGACGACATCGAAAACTGCATCGCGCAAGATGCCG	300
Sbjct	239	TTGACGCGTTGTTCCAACGTATCTGCGACGACATCGAAAACTGCATCGCGCAAGATGCCG	298
Query	301	CAGATGCCGAAGGAGGGTCTTGGGCGGTATTCCGCCACACGCTGCTGCACTTTTTCGAGC	360
Sbjct	299	CAGATGCCGAAGGAGGTTCTTGGACGGTATTCCGCCACACGCTGCTGCACTTTTTCGAGC	358
Query	361	GGCTGCAAAGCAACGACATCTACTACAAATTCCACAACATCCTGTTTTTAAAATGCGAAC	420
Sbjct	359	GGCTGCAAAGCAACGACATCTACTACAAATTCCACAACATCCTGTTTTTAAAATGCGAAC	418
Query	421	ACACGGAGCAAAACGCCGCCGTTATCGCCATTGCCCGCAAGCATCAGGCAATCTGGCGCG	480
Sbjct	419	ACACGGAGCAAAACGCCGCCGTTATCGCCATTGCCCGCAAGCATCAGGCAATCTGGCGCG	478
Query	481	AGAAAATTACCGCCGTTTTGACCGAAGCGGTGGAAAATCAGGATTTGGCTGACGATTTGG	540
Sbjct	479	AGAAAATTACCGCCGTTTTGACCGAAGCGGTGGAAAATCAGGATTTGGCTGACGATTTGG	538
Query	541	${\tt ACAAGGAAACGGCGGTCATCTTCATCAAATCGACGTTGGACGGGCTGATTTGGCGTTGGT}$	600
Sbjct	539	ACAAGGAAACGGCGGTCATCTTCATCAAATCGACGTTGGACGGGCTGATTTGGCGTTGGT	598
Query	601	TCTCTTCCGGCGAAAGTTTCGATTTGGGCAAAACCGCCCCCGCGCATCATCGGGATAAT	660
Sbjct	599	TCTCTTCCGGCGAAAGTTTCGATTTGGGCAAAACCGCCCCGCGCATCATCGGGATAAT	656
Query	661	GATGGACAACTTGGAAAACCATCCCTGCCTGCGCGGAAATA 702	
Sbjct	657	GATGGACAACTTGGAAAACCATCCCTGCCTGCGCGGAAATA 698	
> mtrR Length			
Ident	ities	34 bits (668), Expect = 0.0 = 691/702 (98%), Gaps = 2/702 (0%) s/Plus	
Query	1	TTGCACGGATAAAAAGTCttttttataATCCGCCCTCGTCAAACCGACCCGAAACGAAA	60
Sbjct	1	TTGCACGGATAAAAAGTCTTTTTTATAATCCGCCCTCGTCAAACCGACCCGAAACGAAA	60
Query	61	ACGCCATTATGAGAAAACCAAAACCGAAGCCTTGAAAACCAAAGAACACCTGATGCTTG	120
Sbjct	61	ACGCCATTATGAGAAAAACCAAAACCGAAGCCTTGAAAACCAAAGAACACCTGATGCTTG	120
Query	121	CCGCCTTGGAAACCTTTTACCGCAAAGGGATTGCCCGCACCTCGCTCAACGAAATCGCCC	180
Sbjct	121	CCGCCTTGGAAACCTTTTACCGCAAAGGGATTGCCCGCACCTCGCTCAACGAAATCGCCC	180

Query Sbjct	181 181	AAGCCGCCGGCGTAACGCGCGCGCGCTTTATTGGCATTTCAAAAATAAGGAAGACTTGT	240
Query	241	TCGACGCGCTGTTCCAACGTATCTGCGACGACATCGAAAAACTGCATCGCGCAAGATGCCG	300
Sbjct	241		300
Query	301	CAGATGCCGAAGGAGGGTCTTGGGCGGTATTCCGCCACACGCTGCTGCACTTTTTCGAGC	360
Sbjct	301	CAGATGCCGAAGGAGGTTCTTGGACGGTATTCCGCCACACGCTGCTGCACTTTTTCGAGC	360
Query	361	GGCTGCAAAGCAACGACATCTACTACAAATTCCACAACATCCTGTTTTTAAAATGCGAAC	420
Sbjct	361	GGCTGCAAAGCAACGACATCCACTACAAATTCCACAACATCCTGTTTTTAAAGTGCGAAC	420
Query	421	ACACGGAGCAAAACGCCGCCGTTATCGCCATTGCCCGCAAGCATCAGGCAATCTGGCGCG	480
Sbjct	421		480
Query	481	${\tt AGAAAATTACCGCCGTTTTGACCGAAGCGGTGGAAAATCAGGATTTGGCTGACGATTTGG}$	540
Sbjct	481	AGAAAATTACCGCCGTTTTGACCGAAGCGGTGGAAAATCAGGATTTGGCTGACGATTTGG	540
Query	541	ACAAGGAAACGGCGGTCATCTTCATCAAATCGACGTTGGACGGGCTGATTTGGCGTTGGT	600
Sbjct	541	ACAAGGAAACGGCGGTCATCTTCATCAAATCGACGTTGGACGGGCTGATTTGGCGTTGGT	600
Query	601	${\tt TCTCTTCCGGCGAAAGTTTCGATTTGGGCAAAACCGCCCCCGCGCATCATCGGGATAAT}$	660
Sbjct	601	TCTCTTCCGGCGAAAGTTTCGATTTGGGCAAAACCGCCCCGCGCATCATCGGGATAAT	658
Query	661	GATGGACAACTTGGAAAACCATCCCTGCCTGCGCCGGAAATA 702	
Sbjct	659	GATGGACAACTTGGAAAACCATCCCTGCCTGCGCGGAAATA 700	
Sbjct > mtrR Length	5.000		
> mtrR Length Score Ident	25.000 =700 = = 12 ities		
> mtrR Length Score Ident	25.000 =700 = = 12 ities	27 bits (664), Expect = 0.0 = 690/702 (98%), Gaps = 3/702 (0%) s/Plus TTGCACGGATAAAAAGTCtttttttATAATCCGCCCTCGTCAAACCGACCCGAAACGAAA	60
> mtrR Length Score Ident Stran	25.000 =700 = = 12 ities id=Plu	27 bits (664), Expect = 0.0 = 690/702 (98%), Gaps = 3/702 (0%) s/Plus	60 59
> mtrR Length Score Ident Stran	25.000 =700 = = 12 ities id=Plu	27 bits (664), Expect = 0.0 = 690/702 (98%), Gaps = 3/702 (0%) s/Plus TTGCACGGATAAAAAGTCtttttttATAATCCGCCCTCGTCAAACCGACCCGAAACGAAA	
> mtrR Length Score Ident Stran Query Sbjct	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	27 bits (664), Expect = 0.0 = 690/702 (98%), Gaps = 3/702 (0%) s/Plus TTGCACGGATAAAAAGTCtttttttaTAATCCGCCCTCGTCAAACCGACCCGAAACGAAA	59
> mtrR Length Score Ident Stran Query Sbjct Query	25.000 =700 = 12 ities d=Plu 1 1	27 bits (664), Expect = 0.0 = 690/702 (98%), Gaps = 3/702 (0%) s/Plus TTGCACGGATAAAAAGTCtttttttATAATCCGCCCTCGTCAAACCGACCCGAAACGAAA	59 120
> mtrR Length Score Ident Stran Query Sbjct Query Sbjct	15.000 =700 = 12 ities id=Plu 1 1 61	27 bits (664), Expect = 0.0 = 690/702 (98%), Gaps = 3/702 (0%) s/Plus TTGCACGGATAAAAAGTCtttttttATAATCCGCCCTCGTCAAACCGACCCGAAACGAAA	59 120 119
> mtrR Length Score Ident Stran Query Sbjct Query Sbjct Query	15.000 =700 = 12ities d=Plu 1 1 61 60 121	27 bits (664), Expect = 0.0 = 690/702 (98%), Gaps = 3/702 (0%) s/Plus TTGCACGGATAAAAAGTCttttttataTAATCCGCCCTCGTCAAACCGACCCGAAACGAAA	59 120 119 180
> mtrR Length Score Ident Stran Query Sbjct Query Sbjct Query Sbjct	1 1 61 60 121 120	27 bits (664), Expect = 0.0 = 690/702 (98%), Gaps = 3/702 (0%) s/Plus TTGCACGGATAAAAAGTCtttttttATAATCCGCCCTCGTCAAACCGACCCGAAACGAAA	59 120 119 180 179
> mtrR Length Score Ident Stran Query Sbjct Query Sbjct Query Sbjct	1 1 61 60 121 120 181	27 bits (664), Expect = 0.0 = 690/702 (98%), Gaps = 3/702 (0%) s/Plus TTGCACGGATAAAAAGTCtttttttaTAATCCGCCCTCGTCAAACCGACCCGAAACGAAA	59 120 119 180 179 240
> mtrR Length Score Ident Stran Query Sbjct Query Sbjct Query Sbjct Query Sbjct	1 1 61 120 181 180	27 bits (664), Expect = 0.0 = 690/702 (98%), Gaps = 3/702 (0%) s/Plus TTGCACGGATAAAAAGTCtttttttataatccgccctcgtcaaaccgaaccgaaacgaaa	59 120 119 180 179 240 239
> mtrR Length Score Ident Stran Query Sbjct Query Sbjct Query Sbjct Query Sbjct	1 1 61 60 121 180 241	27 bits (664), Expect = 0.0 = 690/702 (98%), Gaps = 3/702 (0%) s/Plus TTGCACGGATAAAAAGTCtttttttataAATCCGCCCTCGTCAAACCGACCCGAAACGAAA	59 120 119 180 179 240 239 300
> mtrR Length Score Ident Stran Query Sbjct Query Sbjct Query Sbjct Query Sbjct Query Sbjct Query Sbjct	15.000 =700 = 12 ities d=Plu 1 1 61 60 121 120 181 180 241 240	27 bits (664), Expect = 0.0 = 690/702 (98%), Gaps = 3/702 (0%) s/Plus TTGCACGGATAAAAAGTCtttttttataatccgccctcgtcaaaccgacccgaaacgaaa	59 120 119 180 179 240 239 300 299

```
Sbjct
    360
        GGCTGCAAAGCAACGACATCCACTACAAATTCCACAACATCCTGTTTTTAAAGTGCGAAC
                                                     419
Ouerv
        ACACGGAGCAAAACGCCGCCGTTATCGCCATTGCCCGCAAGCATCAGGCAATCTGGCGCG
                                                     480
        420
        ATACGGAACAAACGCCGCCGTTATCGCCATTGCCCGCAAGCATCAGGCAATCTGGCGCG
                                                     479
Sbjct
        AGAAATTACCGCCGTTTTGACCGAAGCGGTGGAAATCAGGATTTGGCTGACGATTTGG
Query
     481
                                                     540
        480
        AGAAAATTACCGCCGTTTTGACCGAAGCGGTGGAAAATCAGGATTTGGCTGACGATTTGG
                                                    539
Sbjct
     541
        ACAAGGAAACGGCGGTCATCTTCATCAAATCGACGTTGGACGGGCTGATTTGGCGTTGGT
Ouerv
        ACAAGGAAACGGCGGTCATCTTCATCAAATCGACGTTGGACGGGCTGATTTGGCGTTGGT
                                                     599
     540
Sbjct
Query
     601
        {\tt TCTCTTCCGGCGAAAGTTTCGATTTGGGCAAAACCGCCCCCGCGCATCATCGGGATAAT}
                                                     660
        Sbjct
     600
        TCTCTTCCGGCGAAAGTTTCGATTTGGGCAAAACCGCCCC--GCGCATCATCGGGATAAT
     661
        GATGGACAACTTGGAAAACCATCCCTGCCTGCGCCGGAAATA 702
Ouerv
        Sbjct
     658
        GATGGACAACTTGGAAAACCATCCCTGCCTGCGCCGGAAATA 699
> mt.rR4.000
Length=700
Score = 1221 bits (661), Expect = 0.0
Identities = 689/702 (98%), Gaps = 3/702 (0%)
Strand=Plus/Plus
Ouerv 1
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Sbict
    1
                                                     59
     61
        ACGCCATTATGAGAAAACCAAAACCGAAGCCTTGAAAACCAAAGAACACCTGATGCTTG
                                                     120
Query
        Sbjct
     60
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        \tt CCGCCTTGGAAACCTTTTACCGCAAAGGGATTGCCCGCACCTCGCTCAACGAAATCGCCC
                                                     180
Query
    121
        Sbjct
    120
        \verb|CCGCCTTGGAAACCTTTTACCGCAAAGGGATTGCCCGCACCTCGCTCAACGAAATCGCCC|\\
                                                    179
Query
     181
        AAGCCGCCGCGTAACGCGCGCGCGCTTTATTGGCATTTCAAAAATAAGGAAGACTTGT
                                                     240
        180
        AAGCCGCCGGCGTAACGCGCGCGCGCTCTATTGGCATTTCAAAAATAAGGAAGACTTGT
                                                     2.39
Sbict
     241
        {\tt TCGACGCGCTGTTCCAACGTATCTGCGACGACATCGAAAACTGCATCGCGCAAGATGCCG}
                                                     300
Query
        240
        TTGACGCGTTGTTCCAACGTATCTGCGACGACATCGAAAACTGCATCGCGCAAGATGCCG
                                                     299
Sbjct
    301
        CAGATGCCGAAGGAGGTCTTGGGCGGTATTCCGCCACACGCTGCTGCACTTTTTCGAGC
                                                     360
Query
        359
Sbjct
     300
        CAGATGCCGAAGGAGGTTCTTGGACGGTATTCCGCCACACGCTGCTGCACTTTTTCGAGC
        GGCTGCAAAGCAACGACATCTACTACAAATTCCACAACATCCTGTTTTTAAAATGCGAAC
Query
     361
                                                     420
        Sbict
     360
        GGCTGCAAAGCAACGACATCCACTACAAATTCCACAACATCCTGTTTTTAAAGTGCGAAC
        ACACGGAGCAAAACGCCGCCGTTATCGCCATTGCCCGCAAGCATCAGGCAATCTGGCGCG
                                                     480
Query
     421
        479
Sbjct
     420
        ATACGGAACAAAACGCCGCCGTTATCGCCATTGCCCGCAAGCATCAGGCAATCTGACGCG
        AGAAAATTACCGCCGTTTTGACCGAAGCGGTGGAAAATCAGGATTTGGCTGACGATTTGG
    481
Ouerv
        Sbict
     480
        AGAAAATTACCGCCGTTTTGACCGAAGCGGTGGAAAATCAGGATTTGGCTGACGATTTGG
                                                    539
     541
        ACAAGGAAACGGCGGTCATCTTCATCAAATCGACGTTGGACGGGCTGATTTGGCGTTGGT
                                                     600
Query
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ACAAGGAAACGGCGGTCATCTTCATCAAATCGACGTTGGACGGGCTGATTTGGCGTTGGT

Sbjct

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TCTCTTCCGGCGAAAGTTTCGATTTGGGCAAAACCGCCCCCGCGCATCATCGGGATAAT
     601
Query
                                                     660
        Sbjct
     600
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                                                     657
    661
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Query
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     658
Sbict
> mt.rR3.000
Length=700
Score = 1221 bits (661), Expect = 0.0
Identities = 689/702 (98%), Gaps = 3/702 (0%)
Strand=Plus/Plus
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        Sbict
    1
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Query
     61
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                                                     120
        60
        ACGCCATTATGAGAAAACCAAAACCGAAGCCTTGAAAAACCAAAGAACACCTGATGCTTG
Sbjct
                                                     119
        \verb|CCGCCTTGGAAACCTTTTACCGCAAAGGGATTGCCCGCACCTCGCTCAACGAAATCGCCC|\\
    121
                                                     180
Query
        CCGCCTTGGAAACCTTTTACCGCAAAGGGATTGCCCGCACCTCGCTCAACGAAATCGCCC
                                                     179
    120
Sbjct
Query
    181
        AAGCCGCCGGCGTAACGCGCGCGCGCTTTATTGGCATTTCAAAAATAAGGAAGACTTGT
                                                     240
        Sbjct
     180
        \tt AAGCCGCCGGCGTAACGCGCGCGCGCTCTATTGGCATTTCAAAAATAAGGAAGACTTGT
                                                     239
        TCGACGCGCTGTTCCAACGTATCTGCGACGACATCGAAAACTGCATCGCGCAAGATGCCG
Ouerv
     241
                                                     300
        Sbjct
     240
        TTGACGCGTTGTTCCAACGTATCTGCGACGACATCGAAAACTGCATCGCGCAAGATGCCG
                                                     299
     301
        CAGATGCCGAAGGAGGTCTTGGGCGGTATTCCGCCACACGCTGCTGCACTTTTTCGAGC
Query
        CAGATGCCGAAGGAGGTTCTTGGACGGTATTCCGCCACACGCTGCTGCACTTTTTCGAGC
                                                     359
Sbjct
     300
Ouerv
     361
        GGCTGCAAAGCAACGACATCTACTACAAATTCCACAACATCCTGTTTTTTAAAATGCGAAC
                                                     420
        GGCTGCAAAGCAACGACATCCACTACAAATTCCACAACATCCTGTTTTTAAAGTGCGAAC
Sbict
     360
                                                     419
     421
        ACACGGAGCAAAACGCCGCCGTTATCGCCATTGCCCGCAAGCATCAGGCAATCTGGCGCG
                                                     480
Ouerv
        ATACGGAACAAAACGCCGCCGTTATCGCCATTGCCCGCAAGCATCAGGCAATCTGGCGCG
Sbjct
     420
                                                     479
        AGAAAATTACCGCCGTTTTGACCGAAGCGGTGGAAAATCAGGATTTGGCTGACGATTTGG
                                                     540
Query
     481
        480
        AGAAAATTACCGCCGTTTTGACCGAAGCGGTGGAAAATCAGGATTTGGCTGACGATTTGG
                                                     539
Sbict
        {\tt ACAAGGAAACGGCGGTCATCTTCATCAAATCGACGTTGGACGGGCTGATTTGGCGTTGGT}
Query
     541
                                                     600
        ACAAGGAAACGGCGGTCATCTTCATCAAATCGACGTTGGACGGGCTGATTTGGCGTTGGT
                                                     599
Sbjct
     540
Ouerv
     601
        TCTCTTCCGGCGAAAGTTTCGATTTGGGCAAAACCGCCCCCGCGCATCATCGGGATAAT
        600
        \verb|TCTCTTCCGGCGAAAGTTTCGATTTGGGCAAAACCGCCCC--GCGCATCATCGGGATAAT|
                                                     657
Sbjct
Ouerv
     661
        GATGGACAACTTGGAAAACCATCCCTGCCTGCGCCGGAAATA 702
        GATGGACAACTTGGAAAACCATCCCTGCCTGCGCCGGAAATA
Sbjct
     658
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Lambda K H 1.33 0.621 1.12

Gapped

Lambda K H 1.28 0.460 0.850

Effective search space used: 11139268

Database: /home/irish_m/ng-star-test-2/ngstar/BusinessLogic/data/allele_db_Fmo6Bvzp.fasta Posted date: May 28, 2015 1:29 PM

Number of letters in database: 16,446 Number of sequences in database: 13

Matrix: blastn matrix 1 - 2

Gap Penalties: Existence: 0, Extension: 2.5