

ID in alignment	Strain	accession	coordinates
CP002573.1:c1237105-	- Acidithiobacillus caldus SM-1	CP002573.1	1237105-1234111
CP026328.2:1188918-1	- Acidithiobacillus caldus strain MTH-04	CP026328.2	1188918-1192451
CP043926.1:2163143-2	- Acidithiobacillus caldus strain MTH-04	CP043926.1	2163143-2166676
NODE_69_length_35653	- Acidithiobacillus ACA_BC13		1843-4293
NODE_59_length_16824	- Acidithiobacillus ACA_F		3477-1027
NODE_80_length_16896	- Acidithiobacillus ACA_DSM8584		3549-1099
NODE_220_length_1666	- Acidithiobacillus ACA_KU		3491-1041
CP005986.1:1830631-1	- Acidithiobacillus caldus ATCC_51756	CP005986.1	1830631-1833081
NODE_19_length_57735	- Acidithiobacillus ACA_MELC-5		24529-21621
NODE_66_length_49889	- Acidithiobacillus ACA_I17-1		854456:11516-13182
NODE_225_length_4037	- Acidithiobacillus ACA_G26-1		11494-13160

  

CP002573.1:c1237105-	ATCGGGCTTTCGGCGGATCGGGCGAAAGCGAACCGTCTTTCABAATCGAGCGTCCGTTTGCCGATAGGATTT-----TCCTAACGGAAACCGTGTGT	95
CP026328.2:1188918-1	ATCGGGCTTTCGGCGGATCGGGCGAAAGCGAACCGTCTTTCABAATCGAGCGTCCGTTTGCCGATAGGATTT-----TCCTAACGGAAACCGTGTGT	95
CP043926.1:2163143-2	ATCGGGCTTTCGGCGGATCGGGCGAAAGCGAACCGTCTTTCABAATCGAGCGTCCGTTTGCCGATAGGATTT-----TCCTAACGGAAACCGTGTGT	95
NODE_69_length_35653	ATCGGGCTTTCGGCGGATCGGGCGAAAGCGAACCGTCTTTCABAATCGAGCGTCCGTTTGCCGATAGGATTT-----TCCTAACGGAAACCGTGTGT	95
NODE_59_length_16824	ATCGGGCTTTCGGCGGATCGGGCGAAAGCGAACCGTCTTTCABAATCGAGCGTCCGTTTGCCGATAGGATTT-----TCCTAACGGAAACCGTGTGT	95
NODE_80_length_16896	ATCGGGCTTTCGGCGGATCGGGCGAAAGCGAACCGTCTTTCABAATCGAGCGTCCGTTTGCCGATAGGATTT-----TCCTAACGGAAACCGTGTGT	95
NODE_220_length_1666	ATCGGGCTTTCGGCGGATCGGGCGAAAGCGAACCGTCTTTCABAATCGAGCGTCCGTTTGCCGATAGGATTT-----TCCTAACGGAAACCGTGTGT	95
CP005986.1:1830631-1	ATCGGGCTTTCGGCGGATCGGGCGAAAGCGAACCGTCTTTCABAATCGAGCGTCCGTTTGCCGATAGGATTT-----TCCTAACGGAAACCGTGTGT	95
NODE_19_length_57735	ATCGGGCTTTCGGCGGATCGGGCGAAAGCGAACCGTCTTTCABAATCGAGCGTCCGTTTGCCGATAGGATTT-----TCCTAACGGAAACCGTGTGT	99
NODE_66_length_49889	ATCGGGCTTTCGGCGGATCGGGCGAAAGCGAACCGTCTTTCABAATCGAGCGTCCGTTTGCCGATAGGATTT-----TCCTAACGGAAACCGTGTGT	95
NODE_225_length_4037	ATCGGGCTTTCGGCGGATCGGGCGAAAGCGAACCGTCTTTCABAATCGAGCGTCCGTTTGCCGATAGGATTT-----TCCTAACGGAAACCGTGTGT	95

  

CP002573.1:c1237105-	TGCGCAATAGAGTCTGTCGCCGCTGTGCGGGGAAACCCAGAAAAATACGTGTCCGCGCAGCGTTTCTGGCGGTCTCCCGCGTGTGCGGGGAAAAACC	195
CP026328.2:1188918-1	TGCGCAATAGAGTCTGTCGCCGCTGTGCGGGGAAACCCAGAAAAATACGTGTCCGCGCAGCGTTTCTGGCGGTCTCCCGCGTGTGCGGGGAAAAACC	195
CP043926.1:2163143-2	TGCGCAATAGAGTCTGTCGCCGCTGTGCGGGGAAACCCAGAAAAATACGTGTCCGCGCAGCGTTTCTGGCGGTCTCCCGCGTGTGCGGGGAAAAACC	195
NODE_69_length_35653	TGCGCAATAGAGTCTGTCGCCGCTGTGCGGGGAAACCCAGAAAAATACGTGTCCGCGCAGCGTTTCTGGCGGTCTCCCGCGTGTGCGGGGAAAAACC	137
NODE_59_length_16824	TGCGCAATAGAGTCTGTCGCCGCTGTGCGGGGAAACCCAGAAAAATACGTGTCCGCGCAGCGTTTCTGGCGGTCTCCCGCGTGTGCGGGGAAAAACC	137
NODE_80_length_16896	TGCGCAATAGAGTCTGTCGCCGCTGTGCGGGGAAACCCAGAAAAATACGTGTCCGCGCAGCGTTTCTGGCGGTCTCCCGCGTGTGCGGGGAAAAACC	137
NODE_220_length_1666	TGCGCAATAGAGTCTGTCGCCGCTGTGCGGGGAAACCCAGAAAAATACGTGTCCGCGCAGCGTTTCTGGCGGTCTCCCGCGTGTGCGGGGAAAAACC	137
CP005986.1:1830631-1	TGCGCAATAGAGTCTGTCGCCGCTGTGCGGGGAAACCCAGAAAAATACGTGTCCGCGCAGCGTTTCTGGCGGTCTCCCGCGTGTGCGGGGAAAAACC	137
NODE_19_length_57735	TGCGCAATAGAGTCTGTCGCCGCTGTGCGGGGAAACCCAGAAAAATACGTGTCCGCGCAGCGTTTCTGGCGGTCTCCCGCGTGTGCGGGGAAAAACC	141
NODE_66_length_49889	TGCGCAATAGAGTCTGTCGCCGCTGTGCGGGGAAACCCAGAAAAATACGTGTCCGCGCAGCGTTTCTGGCGGTCTCCCGCGTGTGCGGGGAAAAACC	137
NODE_225_length_4037	TGCGCAATAGAGTCTGTCGCCGCTGTGCGGGGAAACCCAGAAAAATACGTGTCCGCGCAGCGTTTCTGGCGGTCTCCCGCGTGTGCGGGGAAAAACC	137

  

CP002573.1:c1237105-	TCTGTCCACTTCGTGGTTTACCACCTTCGTGGGGG-----	224
CP026328.2:1188918-1	TCTGTCCACTTCGTGGTTTACCACCTTCGTGGGGG-----	295
CP043926.1:2163143-2	TCTGTCCACTTCGTGGTTTACCACCTTCGTGGGGG-----	295
NODE_69_length_35653	-----	137
NODE_59_length_16824	-----	137
NODE_80_length_16896	-----	137
NODE_220_length_1666	-----	137
CP005986.1:1830631-1	-----	137
NODE_19_length_57735	-----	141
NODE_66_length_49889	-----	137
NODE_225_length_4037	-----	137

  

CP002573.1:c1237105-	CCCCGCGTGCAGGGGAAAAACCCTATTTCGACGTAAGCCAGCGCATTCCTCGTCCAGTCCCGCGTGCAGGGGAGAACCCGGATGTTGAGGTACGCGCAGA	224
CP026328.2:1188918-1	CCCCGCGTGCAGGGGAAAAACCCTATTTCGACGTAAGCCAGCGCATTCCTCGTCCAGTCCCGCGTGCAGGGGAGAACCCGGATGTTGAGGTACGCGCAGA	395
CP043926.1:2163143-2	CCCCGCGTGCAGGGGAAAAACCCTATTTCGACGTAAGCCAGCGCATTCCTCGTCCAGTCCCGCGTGCAGGGGAGAACCCGGATGTTGAGGTACGCGCAGA	395
NODE_69_length_35653	-----	137
NODE_59_length_16824	-----	137
NODE_80_length_16896	-----	137
NODE_220_length_1666	-----	137
CP005986.1:1830631-1	-----	137
NODE_19_length_57735	-----	141
NODE_66_length_49889	-----	137
NODE_225_length_4037	-----	137

  

CP002573.1:c1237105-	-----	224
CP026328.2:1188918-1	CGTGTAGCTTTCCAGTCCCGCGTGCAGGGGAGAACCCAGACCAAAATTTGACGGTCCGAGTGGGACACGGTCTCCCGCGTACCGGGGAAAAACC	495
CP043926.1:2163143-2	CGTGTAGCTTTCCAGTCCCGCGTGCAGGGGAGAACCCAGACCAAAATTTGACGGTCCGAGTGGGACACGGTCTCCCGCGTACCGGGGAAAAACC	495
NODE_69_length_35653	-----	137
NODE_59_length_16824	-----	137
NODE_80_length_16896	-----	137
NODE_220_length_1666	-----	137
CP005986.1:1830631-1	-----	137
NODE_19_length_57735	-----	141
NODE_66_length_49889	-----	137
NODE_225_length_4037	-----	137

  

CP002573.1:c1237105-	-----	224
CP026328.2:1188918-1	CTGGGGACAAAAGGAATGTCCACGCGCACTGCTCCCGCGTGCAGGGGAAAAACCAGACCAAAATTTGACGGTCCGAGTGGGACACGGTCTCCCGCGTACCGGGGAAAAACC	595
CP043926.1:2163143-2	CTGGGGACAAAAGGAATGTCCACGCGCACTGCTCCCGCGTGCAGGGGAAAAACCAGACCAAAATTTGACGGTCCGAGTGGGACACGGTCTCCCGCGTACCGGGGAAAAACC	595
NODE_69_length_35653	-----	137
NODE_59_length_16824	-----	137
NODE_80_length_16896	-----	137
NODE_220_length_1666	-----	137
CP005986.1:1830631-1	-----	137
NODE_19_length_57735	-----	141
NODE_66_length_49889	-----	137
NODE_225_length_4037	-----	137

  

CP002573.1:c1237105-	-----	224
CP026328.2:1188918-1	GCGTGCAGGGGAAAAACCCTATGGTGTGACGCCACCAAGGACGACACCTCTTCGCTTCCCGCGCAGTACGGGGAAAAACCCTTGTAGATCCCCGAGGGAGCGAC	695
CP043926.1:2163143-2	GCGTGCAGGGGAAAAACCCTATGGTGTGACGCCACCAAGGACGACACCTCTTCGCTTCCCGCGCAGTACGGGGAAAAACCCTTGTAGATCCCCGAGGGAGCGAC	695
NODE_69_length_35653	-----	137
NODE_59_length_16824	-----	137
NODE_80_length_16896	-----	137
NODE_220_length_1666	-----	137
CP005986.1:1830631-1	-----	137
NODE_19_length_57735	-----	141
NODE_66_length_49889	-----	137
NODE_225_length_4037	-----	137

NODE\_19\_length 57735 ----- 141  
NODE\_66\_length 49889 ----- 137  
NODE\_225\_length 4037 ----- 137

CP002573.1:c1237105----- 229  
CP026328.2:1188918-1 AGACTGGAACGGTCTGCCCGCGTGTGCGGGGGAAAAACCTGATACCCAGATCGACCGGTTCTGCGCCACCTGTCTCTCGCAATGTGCGGGGGAAAAAC 795  
CP043926.1:2163143-2 AGACTGGAACGGTCTGCCCGCGTGTGCGGGGGAAAAACCTGATACCCAGATCGACCGGTTCTGCGCCACCTGTCTCTCGCAATGTGCGGGGGAAAAAC 795  
NODE\_69\_length 35653 ----- 142  
NODE\_59\_length 16824 ----- 142  
NODE\_80\_length 16896 ----- 142  
NODE\_220\_length 1666 ----- 142  
CP005986.1:1830631-1 ----- 142  
NODE\_19\_length 57735 ----- 141  
NODE\_66\_length 49889 ----- 143  
NODE\_225\_length 4037 ----- 143

CP002573.1:c1237105-----TCGTCCCCCGTAGCGGGGGAAAAACCTATCTGGTTGCCAAGGCTAAAGATACCGTCTGCCCGC 294  
CP026328.2:1188918-1 CGATCATGACCAGCGCGGTGTCTCAAGGCATGTCTCCCCCGTAGCGGGGGAAAAACCTATCTGGTTGCCAAGGCTAAAGATACCGTCTGCCCGC 895  
CP043926.1:2163143-2 CGATCATGACCAGCGCGGTGTCTCAAGGCATGTCTCCCCCGTAGCGGGGGAAAAACCTATCTGGTTGCCAAGGCTAAAGATACCGTCTGCCCGC 895  
NODE\_69\_length 35653 ----- 167  
NODE\_59\_length 16824 ----- 167  
NODE\_80\_length 16896 ----- 167  
NODE\_220\_length 1666 ----- 167  
CP005986.1:1830631-1 ----- 167  
NODE\_19\_length 57735 ----- 145  
NODE\_66\_length 49889 ----- 167  
NODE\_225\_length 4037 ----- 167

CP002573.1:c1237105-----TCGTCCCCCGTAGCGGGGGAAAAACCTATCTGGTTGCCAAGGCTAAAGATACCGTCTGCCCGC 394  
CP026328.2:1188918-1 CGCGTCTGCCCGCGTGTGCGGGGGAAAAACCTCAAAAGAGGGTCTCTCGGAGATTTTCCTTGTCTGCCCGCGTGTGCGGGGGAAAAACCGGGCGAGGACACATTTCTCGA 995  
CP043926.1:2163143-2 CGCGTCTGCCCGCGTGTGCGGGGGAAAAACCTCAAAAGAGGGTCTCTCGGAGATTTTCCTTGTCTGCCCGCGTGTGCGGGGGAAAAACCGGGCGAGGACACATTTCTCGA 995  
NODE\_69\_length 35653 ----- 203  
NODE\_59\_length 16824 ----- 203  
NODE\_80\_length 16896 ----- 203  
NODE\_220\_length 1666 ----- 203  
CP005986.1:1830631-1 ----- 203  
NODE\_19\_length 57735 ----- 166  
NODE\_66\_length 49889 ----- 203  
NODE\_225\_length 4037 ----- 203

CP002573.1:c1237105-----GGCCATAACCCGTCTGCCCGCGTGTGCGGGGGAAAAACCTGATAGATAGCCATGCCTGCTCCTGTCTGCCCGCGTGTGCGGGGGAAAAACCGCTGGC 494  
CP026328.2:1188918-1 GGCCATAACCCGTCTGCCCGCGTGTGCGGGGGAAAAACCTGATAGATAGCCATGCCTGCTCCTGTCTGCCCGCGTGTGCGGGGGAAAAACCGCTGGC 1095  
CP043926.1:2163143-2 GGCCATAACCCGTCTGCCCGCGTGTGCGGGGGAAAAACCTGATAGATAGCCATGCCTGCTCCTGTCTGCCCGCGTGTGCGGGGGAAAAACCGCTGGC 1095  
NODE\_69\_length 35653 ----- 257  
NODE\_59\_length 16824 ----- 257  
NODE\_80\_length 16896 ----- 257  
NODE\_220\_length 1666 ----- 257  
CP005986.1:1830631-1 ----- 257  
NODE\_19\_length 57735 ----- 193  
NODE\_66\_length 49889 ----- 257  
NODE\_225\_length 4037 ----- 257

CP002573.1:c1237105-----GCAAGGACTGGCAGGCAAGCGGGGCTAGTCTGCCCGCGTACCGGGGGAAAAACCTTGAGATCCCCGAGGAGCGACAGACTGGAACGATCGTTCCGCGC 594  
CP026328.2:1188918-1 GCAAGGACTGGCAGGCAAGCGGGGCTAGTCTGCCCGCGTACCGGGGGAAAAACCTTGAGATCCCCGAGGAGCGACAGACTGGAACGATCGTTCCGCGC 1195  
CP043926.1:2163143-2 GCAAGGACTGGCAGGCAAGCGGGGCTAGTCTGCCCGCGTACCGGGGGAAAAACCTTGAGATCCCCGAGGAGCGACAGACTGGAACGATCGTTCCGCGC 1195  
NODE\_69\_length 35653 ----- 278  
NODE\_59\_length 16824 ----- 278  
NODE\_80\_length 16896 ----- 278  
NODE\_220\_length 1666 ----- 278  
CP005986.1:1830631-1 ----- 278  
NODE\_19\_length 57735 ----- 214  
NODE\_66\_length 49889 ----- 278  
NODE\_225\_length 4037 ----- 278

CP002573.1:c1237105-----TGTGCGGGGGAAAAACCTCCACCGCGGCCAGGTCTCGTAAGGATCGCTGCTGCTCCGCGTGTGCGGGGGAAAAACCTTCCGAGAAACCGGCAACACC 693  
CP026328.2:1188918-1 TGTGCGGGGGAAAAACCTCCACCGCGGCCAGGTCTCGTAAGGATCGCTGCTGCTCCGCGTGTGCGGGGGAAAAACCTTCCGAGAAACCGGCAACACC 1294  
CP043926.1:2163143-2 TGTGCGGGGGAAAAACCTCCACCGCGGCCAGGTCTCGTAAGGATCGCTGCTGCTCCGCGTGTGCGGGGGAAAAACCTTCCGAGAAACCGGCAACACC 1294  
NODE\_69\_length 35653 ----- 328  
NODE\_59\_length 16824 ----- 328  
NODE\_80\_length 16896 ----- 328  
NODE\_220\_length 1666 ----- 328  
CP005986.1:1830631-1 ----- 328  
NODE\_19\_length 57735 ----- 264  
NODE\_66\_length 49889 ----- 334  
NODE\_225\_length 4037 ----- 334

CP002573.1:c1237105-----TGCGTCTGCCCGC-----TCGTCCCCCGTGTGCGGGGGGAGAACCCAGGTCTCGATTTCCCTGTGCTTTTTCGCTGTGTCTGCCCGCGTGTGCGGGGG 787  
CP026328.2:1188918-1 TGCGTCTGCCCGC-----TCGTCCCCCGTGTGCGGGGGGAGAACCCAGGTCTCGATTTCCCTGTGCTTTTTCGCTGTGTCTGCCCGCGTGTGCGGGGG 1388  
CP043926.1:2163143-2 TGCGTCTGCCCGC-----TCGTCCCCCGTGTGCGGGGGGAGAACCCAGGTCTCGATTTCCCTGTGCTTTTTCGCTGTGTCTGCCCGCGTGTGCGGGGG 1388  
NODE\_69\_length 35653 ----- 369  
NODE\_59\_length 16824 ----- 369  
NODE\_80\_length 16896 ----- 369  
NODE\_220\_length 1666 ----- 369  
CP005986.1:1830631-1 ----- 369  
NODE\_19\_length 57735 ----- 304  
NODE\_66\_length 49889 ----- 432  
NODE\_225\_length 4037 ----- 432

CP002573.1:c1237105-----TTCGACCAAAATCC-----ETG-----TTTTTGTTCGTTTGATAAARAGGAGACACGATATGTCGATGTTGGAACCTTGGATGTTTCGGGAAAACCTGCTGGCCGTT 884  
CP026328.2:1188918-1 TTCGACCAAAATCC-----ETG-----TTTTTGTTCGTTTGATAAARAGGAGACACGATATGTCGATGTTGGAACCTTGGATGTTTCGGGAAAACCTGCTGGCCGTT 1485  
CP043926.1:2163143-2 TTCGACCAAAATCC-----ETG-----TTTTTGTTCGTTTGATAAARAGGAGACACGATATGTCGATGTTGGAACCTTGGATGTTTCGGGAAAACCTGCTGGCCGTT 1485  
NODE\_69\_length 35653 ----- 467



NODE\_69\_length\_35653 CGGTGCGGGC GGTGAGCTGGCCATGGAATCTGAACGCCAGCGTCATCCGCCAGGATATCCTGAACGGC CCCCAGAGCCGGAAGCCGGAACGCTCACCO 1267  
NODE\_59\_length\_16824 CGGTGCGGGC GGTGAGCTGGCCATGGAATCTGAACGCCAGCGTCATCCGCCAGGATATCCTGAACGGC CCCCAGAGCCGGAAGCCGGAACGCTCACCO 1267  
NODE\_80\_length\_16896 CGGTGCGGGC GGTGAGCTGGCCATGGAATCTGAACGCCAGCGTCATCCGCCAGGATATCCTGAACGGC CCCCAGAGCCGGAAGCCGGAACGCTCACCO 1267  
NODE\_220\_length\_1666 CGGTGCGGGC GGTGAGCTGGCCATGGAATCTGAACGCCAGCGTCATCCGCCAGGATATCCTGAACGGC CCCCAGAGCCGGAAGCCGGAACGCTCACCO 1267  
CP005986.1:1830631-1 CGGTGCGGGC GGTGAGCTGGCCATGGAATCTGAACGCCAGCGTCATCCGCCAGGATATCCTGAACGGC CCCCAGAGCCGGAAGCCGGAACGCTCACCO 1267  
NODE\_19\_length\_57735 CGGTGCGGGC GGTGAGCTGGCCATGGAATCTGAACGCCAGCGTCATCCGCCAGGATATCCTGAACGGC CCCCAGAGCCGGAAGCCGGAACGCTCACCO 1204  
NODE\_66\_length\_49889 CGGTGCGGGC GGTGAGCTGGCCATGGAATCTGAACGCCAGCGTCATCCGCCAGGATATCCTGAACGGC CCCCAGAGCCGGAAGCCGGAACGCTCACCO 1330  
NODE\_225\_length\_4037 CGGTGCGGGC GGTGAGCTGGCCATGGAATCTGAACGCCAGCGTCATCCGCCAGGATATCCTGAACGGC CCCCAGAGCCGGAAGCCGGAACGCTCACCO 1330

CP002573.1:c1237105- CGGGCGGGAGAAATCCGTGTGGATGG CTGCTGGCCGAGCATCT CCGAATTCGACCCGGCTGGCGAAA SCGGG TTTCGGGATGGATTTCATTGC 1784  
CP026328.2:1188918-1 CGGGCGGGAGAAATCCGTGTGGATGG CTGCTGGCCGAGCATCT CCGAATTCGACCCGGCTGGCGAAA SCGGG TTTCGGGATGGATTTCATTGC 2385  
CP043926.1:2163143-2 CGGGCGGGAGAAATCCGTGTGGATGG CTGCTGGCCGAGCATCT CCGAATTCGACCCGGCTGGCGAAA SCGGG TTTCGGGATGGATTTCATTGC 2385  
NODE\_69\_length\_35653 CGGGCGGGAGAAATCCGTGTGGATGG CTGCTGGCCGAGCATCT CCGAATTCGACCCGGCTGGCGAAA SCGGG TTTCGGGATGGATTTCATTGC 1367  
NODE\_59\_length\_16824 CGGGCGGGAGAAATCCGTGTGGATGG CTGCTGGCCGAGCATCT CCGAATTCGACCCGGCTGGCGAAA SCGGG TTTCGGGATGGATTTCATTGC 1367  
NODE\_80\_length\_16896 CGGGCGGGAGAAATCCGTGTGGATGG CTGCTGGCCGAGCATCT CCGAATTCGACCCGGCTGGCGAAA SCGGG TTTCGGGATGGATTTCATTGC 1367  
NODE\_220\_length\_1666 CGGGCGGGAGAAATCCGTGTGGATGG CTGCTGGCCGAGCATCT CCGAATTCGACCCGGCTGGCGAAA SCGGG TTTCGGGATGGATTTCATTGC 1367  
CP005986.1:1830631-1 CGGGCGGGAGAAATCCGTGTGGATGG CTGCTGGCCGAGCATCT CCGAATTCGACCCGGCTGGCGAAA SCGGG TTTCGGGATGGATTTCATTGC 1367  
NODE\_19\_length\_57735 CGGGCGGGAGAAATCCGTGTGGATGG CTGCTGGCCGAGCATCT CCGAATTCGACCCGGCTGGCGAAA SCGGG TTTCGGGATGGATTTCATTGC 1304  
NODE\_66\_length\_49889 CGGGCGGGAGAAATCCGTGTGGATGG CTGCTGGCCGAGCATCT CCGAATTCGACCCGGCTGGCGAAA SCGGG TTTCGGGATGGATTTCATTGC 1430  
NODE\_225\_length\_4037 CGGGCGGGAGAAATCCGTGTGGATGG CTGCTGGCCGAGCATCT CCGAATTCGACCCGGCTGGCGAAA SCGGG TTTCGGGATGGATTTCATTGC 1430

CP002573.1:c1237105- CTGCCCGGCTGGTGGAGGGGAGTGAGTG CAAAAATCGATAAAAAACAGGTGTGAGAG TAGAGTCTCCCGGCTGCGCGGGGAAAAAC GAAGC 1884  
CP026328.2:1188918-1 CTGCCCGGCTGGTGGAGGGGAGTGAGTG CAAAAATCGATAAAAAACAGGTGTGAGAG TAGAGTCTCCCGGCTGCGCGGGGAAAAAC ----- 2451  
CP043926.1:2163143-2 CTGCCCGGCTGGTGGAGGGGAGTGAGTG CAAAAATCGATAAAAAACAGGTGTGAGAG TAGAGTCTCCCGGCTGCGCGGGGAAAAAC ----- 2451  
NODE\_69\_length\_35653 CTGCCCGGCTGGTGGAGGGGAGTGAGTG CAAAAATCGATAAAAAACAGGTGTGAGAG TAGAGTCTCCCGGCTGCGCGGGGAAAAAC ----- 1433  
NODE\_59\_length\_16824 CTGCCCGGCTGGTGGAGGGGAGTGAGTG CAAAAATCGATAAAAAACAGGTGTGAGAG TAGAGTCTCCCGGCTGCGCGGGGAAAAAC ----- 1433  
NODE\_80\_length\_16896 CTGCCCGGCTGGTGGAGGGGAGTGAGTG CAAAAATCGATAAAAAACAGGTGTGAGAG TAGAGTCTCCCGGCTGCGCGGGGAAAAAC ----- 1433  
NODE\_220\_length\_1666 CTGCCCGGCTGGTGGAGGGGAGTGAGTG CAAAAATCGATAAAAAACAGGTGTGAGAG TAGAGTCTCCCGGCTGCGCGGGGAAAAAC ----- 1433  
CP005986.1:1830631-1 CTGCCCGGCTGGTGGAGGGGAGTGAGTG CAAAAATCGATAAAAAACAGGTGTGAGAG TAGAGTCTCCCGGCTGCGCGGGGAAAAAC ----- 1433  
NODE\_19\_length\_57735 CTGCCCGGCTGGTGGAGGGGAGTGAGTG CAAAAATCGATAAAAAACAGGTGTGAGAG TAGAGTCTCCCGGCTGCGCGGGGAAAAAC ----- 1370  
NODE\_66\_length\_49889 CTGCCCGGCTGGTGGAGGGGAGTGAGTG CAAAAATCGATAAAAAACAGGTGTGAGAG TAGAGTCTCCCGGCTGCGCGGGGAAAAAC ----- 1496  
NODE\_225\_length\_4037 CTGCCCGGCTGGTGGAGGGGAGTGAGTG CAAAAATCGATAAAAAACAGGTGTGAGAG TAGAGTCTCCCGGCTGCGCGGGGAAAAAC ----- 1496

CP002573.1:c1237105- GAGTTGGACAGCGACTACCACGAGGCCA **GTCTCCCGGCTGCGCGGGGAAAAAC** GCCGACAGGCTGGCCGGCTAACGGCTGGTTGC **GTCTCCCGG** 1984  
CP026328.2:1188918-1 -----GCCGACAGGCTGGCCGGCTAACGGCTGGTTGC **GTCTCCCGG** 2523  
CP043926.1:2163143-2 -----GCCGACAGGCTGGCCGGCTAACGGCTGGTTGC **GTCTCCCGG** 2523  
NODE\_69\_length\_35653 -----GTGGGATCTCCCAAT 1478  
NODE\_59\_length\_16824 -----GTGGGATCTCCCAAT 1478  
NODE\_80\_length\_16896 -----GTGGGATCTCCCAAT 1478  
NODE\_220\_length\_1666 -----GTGGGATCTCCCAAT 1478  
CP005986.1:1830631-1 -----GTGGGATCTCCCAAT 1478  
NODE\_19\_length\_57735 -----CCATAGTCAGCCGTCAGCATGGCAAAAATGCTC **GTCTCCCGG** 1442  
NODE\_66\_length\_49889 ----- 1525  
NODE\_225\_length\_4037 ----- 1525

CP002573.1:c1237105- **CGTGCGCGGGGAAAAAC**CCACAAGTCGGCCACCGGCAACCAATCTGGG**GTCTCCCGGCTGCGCGGGGAAAAAC**GGATCATAACCAAGCC----- 2076  
CP026328.2:1188918-1 **CGTGCGCGGGGAAAAAC**CCACAAGTCGGCCACCGGCAACCAATCTGGG**GTCTCCCGGCTGCGCGGGGAAAAAC**GGATCATAACCAAGCC----- 2615  
CP043926.1:2163143-2 **CGTGCGCGGGGAAAAAC**CCACAAGTCGGCCACCGGCAACCAATCTGGG**GTCTCCCGGCTGCGCGGGGAAAAAC**GGATCATAACCAAGCC----- 2615  
NODE\_69\_length\_35653 CGGCGCGG-----CAGGTGTGCT**GTCTCCCGGCTGCGCGGGGAAAAAC**GGATCATAACCAAGCC----- 1536  
NODE\_59\_length\_16824 CGGCGCGG-----CAGGTGTGCT**GTCTCCCGGCTGCGCGGGGAAAAAC**GGATCATAACCAAGCC----- 1536  
NODE\_80\_length\_16896 CGGCGCGG-----CAGGTGTGCT**GTCTCCCGGCTGCGCGGGGAAAAAC**GGATCATAACCAAGCC----- 1536  
NODE\_220\_length\_1666 CGGCGCGG-----CAGGTGTGCT**GTCTCCCGGCTGCGCGGGGAAAAAC**GGATCATAACCAAGCC----- 1536  
CP005986.1:1830631-1 CGGCGCGG-----CAGGTGTGCT**GTCTCCCGGCTGCGCGGGGAAAAAC**GGATCATAACCAAGCC----- 1536  
NODE\_19\_length\_57735 **CGTGCGCGGGGAAAAAC**TTACAGTATGGCGGGAACGACGCGGTTGGCT**GTCTCCCGGCTGCGCGGGGAAAAAC**GGATCATAACCAAGCC----- 1542  
NODE\_66\_length\_49889 -----GGAGCA----- 1530  
NODE\_225\_length\_4037 -----GGAGCA----- 1530

CP002573.1:c1237105- -----TCTGTAGCATGGTGGATGCC----- **GTCTCCCGGCTGCGCGGGGAAAAAC** 2123  
CP026328.2:1188918-1 -----TCTGTAGCATGGTGGATGCC----- **GTCTCCCGGCTGCGCGGGGAAAAAC** 2662  
CP043926.1:2163143-2 -----TCTGTAGCATGGTGGATGCC----- **GTCTCCCGGCTGCGCGGGGAAAAAC** 2662  
NODE\_69\_length\_35653 -----ACGCGACCGTGGTGCAGGCC----- **GTCTCCCGGCTGCGCGGGGAAAAAC** 1583  
NODE\_59\_length\_16824 -----ACGCGACCGTGGTGCAGGCC----- **GTCTCCCGGCTGCGCGGGGAAAAAC** 1583  
NODE\_80\_length\_16896 -----ACGCGACCGTGGTGCAGGCC----- **GTCTCCCGGCTGCGCGGGGAAAAAC** 1583  
NODE\_220\_length\_1666 -----ACGCGACCGTGGTGCAGGCC----- **GTCTCCCGGCTGCGCGGGGAAAAAC** 1583  
CP005986.1:1830631-1 -----ACGCGACCGTGGTGCAGGCC----- **GTCTCCCGGCTGCGCGGGGAAAAAC** 1583  
NODE\_19\_length\_57735 CAGCTTGAGCCG**TAGTCCCGGCTGCGCGGGGAAAAAC**CGCCCGCGCGCTTGTGAGCATGACGAGAGACC**GTCTCCCGGCTGCGCGGGTAGAGAAC** 1642  
NODE\_66\_length\_49889 ----- 1530  
NODE\_225\_length\_4037 ----- 1530

CP002573.1:c1237105- CG-TCC-----CAACTCCGCGGCG-----TGGAATATCTGCCCGCTGCTC 2163  
CP026328.2:1188918-1 CG-TCC-----CAAGTCCGCGGCG-----TGGAATATCTGCCCGCTGCTC 2702  
CP043926.1:2163143-2 CG-GTCC-----CAAGTCCGCGGCG-----TGGAATATCTGCCCGCTGCTC 2702  
NODE\_69\_length\_35653 C-----GGGATCAGCGGCGTACTCATCCACTTGTGGGCC-----GTCTGC 1623  
NODE\_59\_length\_16824 C-----GGGATCAGCGGCGTACTCATCCACTTGTGGGCC-----GTCTGC 1623  
NODE\_80\_length\_16896 C-----GGGATCAGCGGCGTACTCATCCACTTGTGGGCC-----GTCTGC 1623  
NODE\_220\_length\_1666 C-----GGGATCAGCGGCGTACTCATCCACTTGTGGGCC-----GTCTGC 1623  
CP005986.1:1830631-1 C-----GGGATCAGCGGCGTACTCATCCACTTGTGGGCC-----GTCTGC 1623  
NODE\_19\_length\_57735 CGGGCTCCAGCAGACCGTCTACGACCTCGTAT**GTCTCCCGGCTGCGCGGGGAAAAAC**CTGTGGCGCACCTACGAGGACCGCTCAAGGG**GTCTGC** 1742  
NODE\_66\_length\_49889 ----- 1530  
NODE\_225\_length\_4037 ----- 1530

CP002573.1:c1237105- **CGCGGCTGCGCGGGGAAAAAC**CGCATATCAGGGTGTCTCTGGGCTCTGTTTC-T**GTCTCCCGGCTGCGCGGGGAAAAAC**CG-----AAGATGAG 2256  
CP026328.2:1188918-1 **CGCGGCTGCGCGGGGAAAAAC**CGCATATCAGGGTGTCTCTGGGCTCTGTTTC-T**GTCTCCCGGCTGCGCGGGGAAAAAC**CG-----AAGATGAG 2795  
CP043926.1:2163143-2 **CGCGGCTGCGCGGGGAAAAAC**CGCATATCAGGGTGTCTCTGGGCTCTGTTTC-T**GTCTCCCGGCTGCGCGGGGAAAAAC**CG-----AAGATGAG 2795  
NODE\_69\_length\_35653 **CGCGGCTGCGCGGGGAAAAAC**TTACAGTATGGCGGGAACGACGCGGTTGGCG-T**GTCTCCCGGCTGCGCGGGGAAAAAC**-CTG-----ATCACCGG 1715  
NODE\_59\_length\_16824 **CGCGGCTGCGCGGGGAAAAAC**TTACAGTATGGCGGGAACGACGCGGTTGGCG-T**GTCTCCCGGCTGCGCGGGTGGAAAC**-CTG-----ATCACCGG 1715

NODE\_80\_length\_16896 **CCGCGTCCGCGGGGAAAACCTT**ACAGTATGGCGCGGAACGACGCGGTGGCG-T**GTCTCCCGGTGCGCGGTGGAAA**-CCTG-----ATCACCGG 1715  
NODE\_220\_length\_1666 **CCGCGTCCGCGGGGAAAACCTT**ACAGTATGGCGCGGAACGACGCGGTGGCG-T**GTCTCCCGGTGCGCGGTGGAAA**-CCTG-----ATCACCGG 1715  
CP005986.1:1830631-1 **CCGCGTCCGCGGGGAAAACCTT**ACAGTATGGCGCGGAACGACGCGGTGGCG-T**GTCTCCCGGTGCGCGGTGGAAA**-CCTG-----ATCACCGG 1715  
NODE\_19\_length\_57735 **CCGCGTCCGCGGGGAAAACCTT**ACAGTATGGCGCGGAACGACGCGGTGGCG-T**GTCTCCCGGTGCGCGGGGAAAACCT**CGGCGAGCATCACCGG 1841  
NODE\_66\_length\_49889 **CCGCGTCCGCGGGGAAAACCTT**ACAGTATGGCGCGGAACGACGCGGTGGCG-T**GTCTCCCGGTGCGCGGGGAAAACCT**CGGCGAGCATCACCGG 1537  
NODE\_225\_length\_4037 **CCGCGTCCGCGGGGAAAACCTT**ACAGTATGGCGCGGAACGACGCGGTGGCG-T**GTCTCCCGGTGCGCGGGGAAAACCT**CGGCGAGCATCACCGG 1537

CP002573.1:c1237105- GCGATAAGTCCAGACGACGCACT**GTCTCCCGGTGCGCGGGGAAAACCT**CGGCGAGCATCACCGG 2352  
CP026328.2:1188918-1 GCGATAAGTCCAGACGACGCACT**GTCTCCCGGTGCGCGGGGAAAACCT**CGGCGAGCATCACCGG 2891  
CP043926.1:2163143-2 GCGATAAGTCCAGACGACGCACT**GTCTCCCGGTGCGCGGGGAAAACCT**CGGCGAGCATCACCGG 2891  
NODE\_69\_length\_35653 --GACAAAACCGGGCGGCG--**GTCTCCCGGTGCGCGGGGAAAACCT**CGGCGAGCATCACCGG 1804  
NODE\_59\_length\_16824 --GACAAAACCGGGCGGCG--**GTCTCCCGGTGCGCGGGGAAAACCT**CGGCGAGCATCACCGG 1804  
NODE\_80\_length\_16896 --GACAAAACCGGGCGGCG--**GTCTCCCGGTGCGCGGGGAAAACCT**CGGCGAGCATCACCGG 1804  
NODE\_220\_length\_1666 --GACAAAACCGGGCGGCG--**GTCTCCCGGTGCGCGGGGAAAACCT**CGGCGAGCATCACCGG 1804  
CP005986.1:1830631-1 --GACAAAACCGGGCGGCG--**GTCTCCCGGTGCGCGGGGAAAACCT**CGGCGAGCATCACCGG 1804  
NODE\_19\_length\_57735 --GACAAAACCGGGCGGCG--**GTCTCCCGGTGCGCGGGGAAAACCT**CGGCGAGCATCACCGG 1930  
NODE\_66\_length\_49889 --GACAAAACCGGGCGGCG--**GTCTCCCGGTGCGCGGGGAAAACCT**CGGCGAGCATCACCGG 1549  
NODE\_225\_length\_4037 --GACAAAACCGGGCGGCG--**GTCTCCCGGTGCGCGGGGAAAACCT**CGGCGAGCATCACCGG 1549

CP002573.1:c1237105- **TGCGCGGGGAAAACCT**CGTCATG----- 2374  
CP026328.2:1188918-1 **TGCGCGGGGAAAACCT**CGTCATG----- 2913  
CP043926.1:2163143-2 **TGCGCGGGGAAAACCT**CGTCATG----- 2913  
NODE\_69\_length\_35653 **TGCGCGGGGAAAACCT**-TCATC----- 1825  
NODE\_59\_length\_16824 **TGCGCGGGGAAAACCT**-TCATC----- 1825  
NODE\_80\_length\_16896 **TGCGCGGGGAAAACCT**-TCATC----- 1825  
NODE\_220\_length\_1666 **TGCGCGGGGAAAACCT**-TCATC----- 1825  
CP005986.1:1830631-1 **TGCGCGGGGAAAACCT**CGTCATG----- 1825  
NODE\_19\_length\_57735 **TGCGCGGGGAAAACCT**CGTCATG----- 2030  
NODE\_66\_length\_49889 **TGCGCGGGGAAAACCT**CGTCATG----- 1557  
NODE\_225\_length\_4037 **TGCGCGGGGAAAACCT**CGTCATG----- 1557

CP002573.1:c1237105- -----AAAGCGTCTACGACCTTGAATAATAC-----CGTCGTCCCGGTGCGCGGGGAAAACCT 2427  
CP026328.2:1188918-1 -----AAAGCGTCTACGACCTTGAATAATAC-----CGTCGTCCCGGTGCGCGGGGAAAACCT 2966  
CP043926.1:2163143-2 -----AAAGCGTCTACGACCTTGAATAATAC-----CGTCGTCCCGGTGCGCGGGGAAAACCT 2966  
NODE\_69\_length\_35653 -----GCTATACCAATGCGCAAGGGGCGGACC-----CGGCGTCCCGGTGCGCGGGGAAAACCT 1882  
NODE\_59\_length\_16824 -----GCTATACCAATGCGCAAGGGGCGGACC-----CGGCGTCCCGGTGCGCGGGGAAAACCT 1882  
NODE\_80\_length\_16896 -----GCTATACCAATGCGCAAGGGGCGGACC-----CGGCGTCCCGGTGCGCGGGGAAAACCT 1882  
NODE\_220\_length\_1666 -----GCTATACCAATGCGCAAGGGGCGGACC-----CGGCGTCCCGGTGCGCGGGGAAAACCT 1882  
CP005986.1:1830631-1 -----GCTATACCAATGCGCAAGGGGCGGACC-----CGGCGTCCCGGTGCGCGGGGAAAACCT 1882  
NODE\_19\_length\_57735 GCCTTGGCA**GTCTCCCGGTGCGCGGGGAAAACCT**CGTCATG----- 2130  
NODE\_66\_length\_49889 -----GCTATACCAATGCGCAAGGGGCGGACC-----CGGCGTCCCGGTGCGCGGGGAAAACCT 1557  
NODE\_225\_length\_4037 -----GCTATACCAATGCGCAAGGGGCGGACC-----CGGCGTCCCGGTGCGCGGGGAAAACCT 1557

CP002573.1:c1237105- -----TCTTACAGTATGGCGCGGAACGACGCGGTGGCG**GTCTCCCGGTGCGCGGGGAAAACCT**GGGTCACGCGCGGCTTGAG 2516  
CP026328.2:1188918-1 -----TCTTACAGTATGGCGCGGAACGACGCGGTGGCG**GTCTCCCGGTGCGCGGGGAAAACCT**GGGTCACGCGCGGCTTGAG 3055  
CP043926.1:2163143-2 -----TCTTACAGTATGGCGCGGAACGACGCGGTGGCG**GTCTCCCGGTGCGCGGGGAAAACCT**GGGTCACGCGCGGCTTGAG 3055  
NODE\_69\_length\_35653 GCCTTGAGCTCCCTGTTCGCCATGTGGAGGA-----**GTCTCCCGGTGCGCGGGGAAAACCT**GGGTCACGCGCGGCTTGAG 1966  
NODE\_59\_length\_16824 GCCTTGAGCTCCCTGTTCGCCATGTGGAGGA-----**GTCTCCCGGTGCGCGGGGAAAACCT**GGGTCACGCGCGGCTTGAG 1966  
NODE\_80\_length\_16896 GCCTTGAGCTCCCTGTTCGCCATGTGGAGGA-----**GTCTCCCGGTGCGCGGGGAAAACCT**GGGTCACGCGCGGCTTGAG 1966  
NODE\_220\_length\_1666 GCCTTGAGCTCCCTGTTCGCCATGTGGAGGA-----**GTCTCCCGGTGCGCGGGGAAAACCT**GGGTCACGCGCGGCTTGAG 1966  
CP005986.1:1830631-1 GCCTTGAGCTCCCTGTTCGCCATGTGGAGGA-----**GTCTCCCGGTGCGCGGGGAAAACCT**GGGTCACGCGCGGCTTGAG 1966  
NODE\_19\_length\_57735 GCCTTGAGCTCCCTGTTCGCCATGTGGAGGA-----**GTCTCCCGGTGCGCGGGGAAAACCT**GGGTCACGCGCGGCTTGAG 2214  
NODE\_66\_length\_49889 -----GCTATACCAATGCGCAAGGGGCGGACC-----CGGCGTCCCGGTGCGCGGGGAAAACCT 1557  
NODE\_225\_length\_4037 -----GCTATACCAATGCGCAAGGGGCGGACC-----CGGCGTCCCGGTGCGCGGGGAAAACCT 1557

CP002573.1:c1237105- CTTGAGCC**GTCTCCCGGTGCGCGGGGAAAACCT**-----GTTCCGACGTAAGCGGTCATCATC- 2579  
CP026328.2:1188918-1 CTTGAGCC**GTCTCCCGGTGCGCGGGGAAAACCT**-----GTTCCGACGTAAGCGGTCATCATC- 3118  
CP043926.1:2163143-2 CTTGAGCC**GTCTCCCGGTGCGCGGGGAAAACCT**-----GTTCCGACGTAAGCGGTCATCATC- 3119  
NODE\_69\_length\_35653 TTCCCAAAA**GTCTCCCGGTGCGCGGGGAAAACCT**-----GTTCCGACGTAAGCGGTCATCATC- 2022  
NODE\_59\_length\_16824 TTCCCAAAA**GTCTCCCGGTGCGCGGGGAAAACCT**-----GTTCCGACGTAAGCGGTCATCATC- 2022  
NODE\_80\_length\_16896 TTCCCAAAA**GTCTCCCGGTGCGCGGGGAAAACCT**-----GTTCCGACGTAAGCGGTCATCATC- 2022  
NODE\_220\_length\_1666 TTCCCAAAA**GTCTCCCGGTGCGCGGGGAAAACCT**-----GTTCCGACGTAAGCGGTCATCATC- 2022  
CP005986.1:1830631-1 TTCCCAAAA**GTCTCCCGGTGCGCGGGGAAAACCT**-----GTTCCGACGTAAGCGGTCATCATC- 2022  
NODE\_19\_length\_57735 CAGCGATGG**GTCTCCCGGTGCGCGGGGAAAACCT**TCAAGGCATCACGAGAGAACAAATCGAGCATT**GTCTCCCGGTGCGCGGGGAAAACCT**TT 2314  
NODE\_66\_length\_49889 -----GCTATACCAATGCGCAAGGGGCGGACC-----CGGCGTCCCGGTGCGCGGGGAAAACCT 1557  
NODE\_225\_length\_4037 -----GCTATACCAATGCGCAAGGGGCGGACC-----CGGCGTCCCGGTGCGCGGGGAAAACCT 1557

CP002573.1:c1237105- -----**GTCTCCCGGTGCGCGGGGAAAACCT**CGTCATG----- 2631  
CP026328.2:1188918-1 -----**GTCTCCCGGTGCGCGGGGAAAACCT**CGTCATG----- 3170  
CP043926.1:2163143-2 -----**GTCTCCCGGTGCGCGGGGAAAACCT**CGTCATG----- 3170  
NODE\_69\_length\_35653 CATTCCAGCGATGG-----**GTCTCCCGGTGCGCGGGGAAAACCT**CGTCATG----- 2081  
NODE\_59\_length\_16824 CATTCCAGCGATGG-----**GTCTCCCGGTGCGCGGGGAAAACCT**CGTCATG----- 2081  
NODE\_80\_length\_16896 CATTCCAGCGATGG-----**GTCTCCCGGTGCGCGGGGAAAACCT**CGTCATG----- 2081  
NODE\_220\_length\_1666 CATTCCAGCGATGG-----**GTCTCCCGGTGCGCGGGGAAAACCT**CGTCATG----- 2081  
CP005986.1:1830631-1 TGTAGGAGTATGGCCGGTCCGCTAGGT**GTCTCCCGGTGCGCGGGGAAAACCT**TGGGGGTATAGCAGCAGCATATGGTATAGTCCCGC 2414  
NODE\_19\_length\_57735 -----G-----**GTCTCCCGGTGCGCGGGGAAAACCT**CGTCATG----- 1586  
NODE\_66\_length\_49889 -----G-----**GTCTCCCGGTGCGCGGGGAAAACCT**CGTCATG----- 1586  
NODE\_225\_length\_4037 -----G-----**GTCTCCCGGTGCGCGGGGAAAACCT**CGTCATG----- 1586

CP002573.1:c1237105- -----CCATGTGGAGG**GTCTCCCGGTGCGCGGGGAAAACCT**----- 2671  
CP026328.2:1188918-1 -----CCATGTGGAGG**GTCTCCCGGTGCGCGGGGAAAACCT**----- 3210  
CP043926.1:2163143-2 -----CCATGTGGAGG**GTCTCCCGGTGCGCGGGGAAAACCT**----- 3210  
NODE\_69\_length\_35653 ---GAGAGCGTCTCTATT**GTCTCCCGGTGCGCGGGGAAAACCT**----- 2125  
NODE\_59\_length\_16824 ---GAGAGCGTCTCTATT**GTCTCCCGGTGCGCGGGGAAAACCT**----- 2125  
NODE\_80\_length\_16896 ---GAGAGCGTCTCTATT**GTCTCCCGGTGCGCGGGGAAAACCT**----- 2125  
NODE\_220\_length\_1666 ---GAGAGCGTCTCTATT**GTCTCCCGGTGCGCGGGGAAAACCT**----- 2125  
CP005986.1:1830631-1 ---GAGAGCGTCTCTATT**GTCTCCCGGTGCGCGGGGAAAACCT**----- 2125  
NODE\_19\_length\_57735 CGTGCAGGGGCTAT**GTCTCCCGGTGCGCGGGGAAAACCT**TCTTTCGATTTCCGATTTCCGATTTCTGCGCTT**GTCTCCCGGTGCGCGGGGAAAACCT** 2514  
NODE\_66\_length\_49889 -----G-----**GTCTCCCGGTGCGCGGGGAAAACCT**CGTCATG----- 1598  
NODE\_225\_length\_4037 -----G-----**GTCTCCCGGTGCGCGGGGAAAACCT**CGTCATG----- 1598

CP002573.1:c1237105- -----G-----TACGCGGCTCATGCACACCATTCACCGAT 2702  
CP026328.2:1188918-1 -----G-----TACGCGGCTCATGCACACCATTCACCGAT 3241  
CP043926.1:2163143-2 -----G-----TACGCGGCTCATGCACACCATTCACCGAT 3241

NODE\_69\_length\_35653 -----CCGAGCCAG-----CACCAGACTCTTGATAGCG-----AAT 2156  
NODE\_59\_length\_16824 -----CCGAGCCAG-----CACCAGACTCTTGATAGCG-----AAT 2156  
NODE\_80\_length\_16896 -----CCGAGCCAG-----CACCAGACTCTTGATAGCG-----AAT 2156  
NODE\_220\_length\_1666 -----CCGAGCCAG-----CACCAGACTCTTGATAGCG-----AAT 2156  
CP005986.1:1830631-1 -----CCGAGCCAG-----CACCAGACTCTTGATAGCG-----AAT 2156  
NODE\_19\_length\_57735 **GGGAAAACCCGGGCCAGGTTGGGGCGTTCTCACTACGAGATACGTCATCCCGCATGTCGGGGGAAAACCAAGCACGGTTGGCGGTAATGGCAAAGTTGTG** 2614  
NODE\_66\_length\_49889 ----- 1598  
NODE\_225\_length\_4037 ----- 1598

CP002573.1:c1237105- GGT**CTCCTCCCGCGTGC**GGGGGAAACTTTTGC---AATCCGCATTTGCGATTTGCTGCGCT-**TTCTCCTCCCGCAATGTCGGGGGAGAACCTTGCGG** 2798  
CP026328.2:1188918-1 GGT**CTCCTCCCGCGTGC**GGGGGAAACTTTTGC---AATCCGCATTTGCGATTTGCTGCGCT-**TTCTCCTCCCGCAATGTCGGGGGAGAACCTTGCGG** 3337  
CP043926.1:2163143-2 GGT**CTCCTCCCGCGTGC**GGGGGAAACTTTTGC---AATCCGCATTTGCGATTTGCTGCGCT-**TTCTCCTCCCGCAATGTCGGGGGAGAACCTTGCGG** 3337  
NODE\_69\_length\_35653 CT**GTAGTCCCGCGTATGCGGGGAGAAC**GCAACC--GTACCGGACCCCGCGCCACGCTA**GTAGTCCCGCG**-**GTATGCGGGGAGAAC**AGTCG- 2252  
NODE\_59\_length\_16824 CT**GTAGTCCCGCGTATGCGGGGAGAAC**GCAACC--GTACCGGACCCCGCGCCACGCTA**GTAGTCCCGCG**-**GTATGCGGGGAGAAC**AGTCG- 2252  
NODE\_80\_length\_16896 CT**GTAGTCCCGCGTATGCGGGGAGAAC**GCAACC--GTACCGGACCCCGCGCCACGCTA**GTAGTCCCGCG**-**GTATGCGGGGAGAAC**AGTCG- 2252  
NODE\_220\_length\_1666 CT**GTAGTCCCGCGTATGCGGGGAGAAC**GCAACC--GTACCGGACCCCGCGCCACGCTA**GTAGTCCCGCG**-**GTATGCGGGGAGAAC**AGTCG- 2252  
CP005986.1:1830631-1 CT**GTAGTCCCGCGTATGCGGGGAGAAC**GCAACC--GTACCGGACCCCGCGCCACGCTA**GTAGTCCCGCG**-**GTATGCGGGGAGAAC**AGTCG- 2252  
NODE\_19\_length\_57735 CT**GTCTCCTCCCGTACGCGGGGAAAAC**CCGAGCCAGCACCTGACTTTGATAG--CGAATCT**GTAGTCCCGCG**-**GTATGCGGGGAGAAC**AGTCG- 2710  
NODE\_66\_length\_49889 ----- 1598  
NODE\_225\_length\_4037 ----- 1598

CP002573.1:c1237105- GGT**TGCTCTGTTGGAGATTTGGGAA**-----**GTCAACCCCGCGTGC**GGGGGAAACTATGCAGTGGCTCGGTGGTTTCG-CGGCCAATAGGGT**CTC** 2892  
CP026328.2:1188918-1 GGT**TGCTCTGTTGGAGATTTGGGAA**-----**GTCAACCCCGCGTGC**GGGGGAAACTATGCAGTGGCTCGGTGGTTTCG-CGGCCAATAGGGT**CTC** 3431  
CP043926.1:2163143-2 GGT**TGCTCTGTTGGAGATTTGGGAA**-----**GTCAACCCCGCGTGC**GGGGGAAACTATGCAGTGGCTCGGTGGTTTCG-CGGCCAATAGGGT**CTC** 3431  
NODE\_69\_length\_35653 ----ATATCAGCGGAAACGCTTCGGACATTGC**CCCGTCCCGCGTATGCGGAGGAGAAC**ACA-AGCGGCCAGGTCTCCCGTCATGCTCAAGAAGT**CTC** 2347  
NODE\_59\_length\_16824 ----ATATCAGCGGAAACGCTTCGGACATTGC**CCCGTCCCGCGTATGCGGAGGAGAAC**ACA-AGCGGCCAGGTCTCCCGTCATGCTCAAGAAGT**CTC** 2347  
NODE\_80\_length\_16896 ----ATATCAGCGGAAACGCTTCGGACATTGC**CCCGTCCCGCGTATGCGGAGGAGAAC**ACA-AGCGGCCAGGTCTCCCGTCATGCTCAAGAAGT**CTC** 2347  
NODE\_220\_length\_1666 ----ATATCAGCGGAAACGCTTCGGACATTGC**CCCGTCCCGCGTATGCGGAGGAGAAC**ACA-AGCGGCCAGGTCTCCCGTCATGCTCAAGAAGT**CTC** 2347  
CP005986.1:1830631-1 ----ATATCAGCGGAAACGCTTCGGACATTGC**CCCGTCCCGCGTATGCGGAGGAGAAC**ACA-AGCGGCCAGGTCTCCCGTCATGCTCAAGAAGT**CTC** 2347  
NODE\_19\_length\_57735 ----ATATCAGCGGAAACGCTTCGGACATTGC**CCCGTCCCGCGTATGCGGAGGAGAAC**ACA-AGCGGCCAGGTCTCCCGTCATGCTCAAGAAGT**CTC** 2805  
NODE\_66\_length\_49889 -----GC**CCCT**----- 1605  
NODE\_225\_length\_4037 -----GC**CCCT**----- 1605

CP002573.1:c1237105- **CCCGCTACGCGGGGAGAAC**CGATTTGGTAGCAGACCATCTGGTGGATA**ATCG**-----**GCTGTCCCGCAATGTCGGGGGAGAAC**CGGAACC 2981  
CP026328.2:1188918-1 **CCCGCTACGCGGGGAGAAC**CGATTTGGTAGCAGACCATCTGGTGGATA**ATCG**-----**GCTGTCCCGCAATGTCGGGGGAGAAC**CGGAACC 3520  
CP043926.1:2163143-2 **CCCGCTACGCGGGGAGAAC**CGATTTGGTAGCAGACCATCTGGTGGATA**ATCG**-----**GCTGTCCCGCAATGTCGGGGGAGAAC**CGGAACC 3520  
NODE\_69\_length\_35653 **CCCGCTACGCGGGGAGAAC**-----GTACACCATGGCGCAATA**ATCG**ACTTTCTGGCC**GTCTCCCGCGTGC**GGGGGAGAACCGGAACC 2437  
NODE\_59\_length\_16824 **CCCGCTACGCGGGGAGAAC**-----GTACACCATGGCGCAATA**ATCG**ACTTTCTGGCC**GTCTCCCGCGTGC**GGGGGAGAACCGGAACC 2437  
NODE\_80\_length\_16896 **CCCGCTACGCGGGGAGAAC**-----GTACACCATGGCGCAATA**ATCG**ACTTTCTGGCC**GTCTCCCGCGTGC**GGGGGAGAACCGGAACC 2437  
NODE\_220\_length\_1666 **CCCGCTACGCGGGGAGAAC**-----GTACACCATGGCGCAATA**ATCG**ACTTTCTGGCC**GTCTCCCGCGTGC**GGGGGAGAACCGGAACC 2437  
CP005986.1:1830631-1 **CCCGCTACGCGGGGAGAAC**-----GTACACCATGGCGCAATA**ATCG**ACTTTCTGGCC**GTCTCCCGCGTGC**GGGGGAGAACCGGAACC 2437  
NODE\_19\_length\_57735 **CCCGCTACGCGGGGAGAAC**-----GTACACCATGGCGCAATA**ATCG**ACTTTCTGGCC**GTCTCCCGCGTGC**GGGGGAGAACCGGAACC 2895  
NODE\_66\_length\_49889 -----ATCG-TTTCTGCAAG**GTCTCCCGCGTGC**GGGGGAGAACCGGAACC 1653  
NODE\_225\_length\_4037 -----ATCG-TTTCTGCAAG**GTCTCCCGCGTGC**GGGGGAGAACCGGAACC 1653

CP002573.1:c1237105- **CGCGACGGGCCTT** 2995  
CP026328.2:1188918-1 **CGCGACGGGCCTT** 3534  
CP043926.1:2163143-2 **CGCGACGGGCCTT** 3534  
NODE\_69\_length\_35653 **CGCGACGGGCCTT** 2451  
NODE\_59\_length\_16824 **CGCGACGGGCCTT** 2451  
NODE\_80\_length\_16896 **CGCGACGGGCCTT** 2451  
NODE\_220\_length\_1666 **CGCGACGGGCCTT** 2451  
CP005986.1:1830631-1 **CGCGACGGGCCTT** 2451  
NODE\_19\_length\_57735 **CGCGACGGGCCTT** 2909  
NODE\_66\_length\_49889 **CGCGACGGGCCTT** 1667  
NODE\_225\_length\_4037 **CGCGACGGGCCTT** 1667