

## 16S rRNA Sequences for southeastern US coastal bacteria

### Sequence 1

NNNNNNNGNNGCTACACATGCAGTCGAGCGGAACGAAGAGGTGCTTGCACCTCTGGCGTCGAGCGGCGGACG  
GGTGAGTAATGCTTGGGAATATGCCTTATGGTGGGGGACAACAGTTGGAAACGACTGCTAATACCGCATGATGTC  
TACGGACCAAAGTGGGGGACCTTCGGGCCTCACGCCATAAGATTAGCCCAAGTGGGATTAGCTAGTTGGTGAGGT  
AATGGCTACCAAGGCGACGATCCCTAGCTGGTTTGAGAGGATGATCAGCCACACTGGGACTGAGACACGGCCCA  
GACTCCTACGGGAGGCAGCAGTGGGGAATATTGCACAATGGGCGCAAGCCTGATGCAGCCATGCCGCGTGTGTG  
AAGAAGGCCTTCGGGTTGTAAAGCACTTTCAGTAAGGAGGAAAGGTTAAGTGTTAATAGCACTTAGCTGTGACGT  
TACTTACAGAAGAAGCACCGGCTAACTCCGTGCCAGCAGCCGCGTAATACGGAGGGTGCGAGCGTTAATCGGA  
ATTACTGGGCGTAAAGCGTACGCAGGCGGTTTGTTAAGCGAGATGTGAAAGCCCCGGGCTCAACCTGGGAACTG  
CATTTGCAACTGGCAAAGTAGAGTGTGATAGAGGGTGGTAGAATTCAGGTGTAGCGGTGAAATGCGTAGAGAT  
CTGAAGGAATACCGATGGCGAAGGCAGCCACCTGGGTCAACACTGACGCTCATGTACGAAAGCGTGGGGAGCAA  
ACAGGATTAGATAACCTGGTAGTCCACGCCGTAACGATGTCTACTAGAAGCTCGGGTCTTCGGACTTGTTTTTCA  
AAGCTAACGCATTAAGTAGACCGCCTGGGGAGTACGGCCGCAAGGTTAAAAGTCAAATGAATTGACGGGGGCC  
GCACAAGCGGTGGAGCATGTGGTTTAATTCGATGCAACGCGAGAACCTTACCTACACTTGACATACAGAGACTTAC  
CAGANATGGTTTNGCTTCGGGACTCTGATACNNTGCTGCATGNTGNCGTCAGCTCGTGTNTGAGATGTTGGGTA  
GTCCCGCACGAGCGNANCCTATCCNNNTGCCANNNGATCGGTCNNN

### Sequence 2

NNNNNNNNNNNNNNNNNNNNNNNNNTGCAGTCGAACGGTAACATTTCTAGCTTGTAGAGAAGATGACGAGTGGCGGAC  
GGGTGAGTAATGCTTGGGAACCTTGCCTTTCGAGAGGGGGATAACAGTTGGAAACGACTGCTAATACCGCATAATGT  
CTACGGACCAAACGGGGCTTAGGCTCTGGCGCAGAGAGAGGCCCAAGTGAGATTAGCTAGTTGGTAAGGTAACG  
GCTTACCAAGGCGACGATCTCTAGCTGTTCTGAGAGGAAGATCAGCCACACTGGGACTGAGACACGGCCCAGACT  
CCTACGGGAGGCAGCAGTGGGGAATATTGCACAATGGGGGAAACCCTGATGCAGCCATGCCGCGTGTGTGAAGA  
AGGCCTTCGGGTTGTAAAGCACTTTCAGTTGTGAGGAAAGGTTAGTAGTTAATACCTGCTAGCTGTGACGTTAGCA  
ACAGAAGAAGCACCGGCTAACTCCGTGCCAGCAGCCGCGGTAATACGGAGGGTGCGAGCGTTAATCGGAATTAC  
TGGGCGTAAAGCGCACGCAGGCGGTTTGTAAAGCTAGATGTGAAAGCCCCGGGCTCAACCTGGGATGGTCATTTA  
GAACTGGCAGACTAGAGTCTTGGAGAGGGGAGTGGAAATCCAGGTGTANCGGTGAAATGCGTANATATCTGGAG  
GAACATCNGTGGNNAANGCGGNTCCCTGNNCANNNGACTGACGCTCATGTGCGAAAGTGTGGGTAGNNNNNNNN  
GATTAGATACNCNGNNNNNTCCACANNNTANACNCNGTCTACTANCTGTGTGTGANTTNNNNNTCGNGNGTATCN  
NNNCTCACNCNCNANNNNNNNGCCNGGNNNTTANNNNNNCCNNNNNNNNNNNNNCANNNGNGNTNTNNNN  
GNCNNNNNNAACNNNNNGNNNGGNGNNNNNTTNNNNANNNNNNNNNNNNNNNNNNNNCNNNCNNNNNNNNNN  
NNNNNNNNNNNNNNNNNNNTNCCNGNNNNNTTNNNNNNNNNNCNNNNNGNNNNNNNNNNNNNNNNNNNN  
NNNNCNNNNANNNNNNNNNNNNNN

### Sequence 3

NNNNNNNGNNGNCNACNNTGCAGTCGAGCGGTAACAGAAAGTAGCTTGCTACTTTGCTGACGAGCGGCGGA  
CGGGTGAGTAATGCTTGGGAACATGCCTTGAGGTGGGGGACAACAGTTGGAAACGACTGCTAATACCGCATAAT  
GTCTACGGACCAAAGGGGGCTTCGGCTCTCGCCTTTAGATTGGCCCAAGTGGGATTAGCTAGTTGGTGAGGTAAT  
GGCTACCAAGGCAACGATCCCTAGCTGGTTTGAGAGGATGATCAGCCACACTGGAAGTGGGACTGAGACACGGTCCAGAC  
TCCTACGGGAGGCAGCAGTGGGGAATATTGCACAATGGGCGAAAGCCTGATGCAGCCATGCCGCGTGTGTGAAG  
AAGGCCTTCGGGTTGTAAAGCACTTTCAGTCAGGAGGAAAGGGTGTGAGTTAATACCTCATATCTGTGACGTTACT  
GACAGAAGAAGCACCGGCTAACTCCGTGCCAGCAGCCGCGTAATACGGAGGGTTCGAGCGTTAATCGGAATTA  
CTGGGCGTAAAGCGTACGCAGGCGGTTTGTTAAGCGAGATGTGAAAGCCCCGGGCTCAACCTGGGAACTGCATTT  
CGAACTGGCAAAGTGTGATAGAGGGTGGTAGAATTTAGGTGTAGCGGTGAAATGCGTAGAGATCTGAA  
GGAATACCGATGGCGAAGGCAGCCACCTGGGTCAACACTGACGCTCATGTACGAAAGCGTGGGGAGCAAACGGG  
ATTAGATACCCCGGTAGTCCACGCCGTAAACGATGTCTACTAGAAGCTCGGAACCTCGGTTCTGTTTTTCAAAGCT  
AACGCATTAAGTAGACCGCCTGGGGAGTACGGCCGAAGGTTAAACTCAAATGAATTTGACGGGGGCCCGCAC  
AAGCGGTGGAGCATGTGGTTTAAATTCGATGCAACGCGAAGAACCTTACCTACACTTGACATACAGAGAACTTTCTA  
GAGATAGATTGNGCCTTCGGGAACTCTGATACNNGCTGCATGGCTGTCGTCAGCTCNTGTNGN

### Sequence 4

NNNNNNNNNNNNNGCTACACATGCAGTCGAACGGTAACAGGAATAGCTTGCTATTTGCTGACGAGTGGCGGA  
CGGGTGAGTAATGCTTGGGAACCTTGCCTTTGCGAGGGGGATAACAGTTGGAAACGACTGCTAATACCGCATAATG  
TCTACGGACCAAACGGGGCTTAGGCTCCGGCGCATAGAGAGGCCCAAGTGGGATTAGCTAGATGGTGAGGTA  
GGCTACCATGGCGACGATCTCTAGCTGTTCTGAGAGGAAGATCAGCCACACTGGGACTGAGACACGGCCCAGAC  
TCCTACGGGAGGCAGCAGTGGGGAATATTGCACAATGGGGGAAACCCTGATGCAGCCATGCCGCGTGTGTGAAG  
AAGGCCTTCGGGTTGTAAAGCACTTTCAGTTGTGAGGAAAAGTTGGTAGTTAATACCTGCTAGCCGTGACGTTAAC  
AACAGAAGAAGCACCGGCTAACTCCGTGCCAGCAGCCGCGTAATACGGAGGGTTCGAGCGTTAATCGGAATTA  
CTGGGCGTAAAGCGCACGCAGGCGGTTTGTTAAGCTAGATGTGAAAGCCCCGGGCTCAACCTGGGACGGTCATTT  
AGAACTGGCAGACTAGAGTCTTGGAGAGGGGAGTGGAAATTCAGGTGTAGCGGTGAAATGCGTAGATATCTGGA  
GGAACATCAGTGGCGAAGGCGACTCCCTGGCCAAAGACTGACGCTCATGTGCGAAAGTGTGGGTAGCGAACAGG  
ATTAGATACCTGGTAGTCCACACCGTAAACGCTGTCTACTAGCTGTGTGTAATTTAATTCGTGCGTAGCGAAGC  
TAACGCGCTAAGTAGACCGCCTGGGGAGTACGGCCGAAGGTTAAACTCAAATGAATTGACGGGGGCCCGCAC  
NAGCGGTGGAGCATGTGGTTAAATTCGATGCAACGCGAAGANCTTACCTACNCTTGACATGCAGANAACCTTTNCA  
GAGATGGATTGNGCCTTCGGAACTCTGACNCAGTGCTGCATGGCTGTCGTCAGCTCNTGTNNGAGATGTNNGNT  
AAGTCCCGCAACGANNNCACCTTGTCCNTANTTNNACNNTTCANTNN

### Sequence 5

NNNNNNNNNGNNNCNANNCATGCAGTCGAGCGGTAACAGGGGTAGCTTGCTACCCGCTGACGAGCGGCGGACG  
GGTGAGTAATGCATAGGAATCTGCCCGGTAGTGGGGGATAACCTGGGAAACCCAGGCTAATACCGCATAACGTC  
CTACGGGAGAAAAGGGGGCTCCGGCTCCCGCTATTGGATGAGCCTATGTCGGATTAGCTAGTTGGTGAGGTAATG  
GCTCACCAAGGCGACGATCCGTAGCTGGTCTGAGAGGATGATCAGCCACATCGGGACTGAGACACGGCCCGAAC  
TCCTACGGGAGGCAGCAGTGGGGAATATTGGACAATGGGGGCAACCCTGATCCAGCCATGCCGCGTGTGTGAAG  
AAGGCCCTCGGGTTGTAAAGCACTTTCAGCGAGGAAGAAGCCTAGTGGTTAATACCCATTAGGAAAGACATCAC  
TCGCAGAAGAAGCACCGGCTAACTCCGTGCCAGCAGCCGCGGTAATACGGAGGGTGAAGCGTTAATCGGAATT  
ACTGGGCGTAAAGCGCGCTAGGTGGCTTGATAAGCCGGTTGTGAAAGCCCCGGGCTCAACCTGGGAACGGCAT  
CCGGAAGTGTACAGGCTAGAGTACAGGAGAGGAAGGTAGAATTCCCGGTGTAGCGGTGAAATGCGTAGAGATCG  
GGAGGAATACCAGTGGCGAAGGCGGCCTTCTGGACTGATACTGACACTGAGGTGCGAAAGCGTGGGTAGCAAAC  
AGGATTAGATACCCTGGTAGTCCACGCCGTAACGATGTCGACCAGCCGTTGGGTGCCTAGAGCACTTTNTGGCG  
AAGTTAACCGGATAAGTCGACCGCCTGGGGAGTACGGCCGCAAGGTTAAACTCAAATGAATTGACGGGGGCC  
GCACAAGCGGTGGAGCATGTGGTTTAATTCGATGCAACGCGAANAACCTTACCTACCCTTGACATCTACAGAANC  
CGGAAGANATTCTGGTGTGCCTTCGGGAAGTGAAGACAGNNGCTGCATGGCTGTCGTCNNCTCNTGTTGTGAA  
ATGTTGGGTAAAGTN

### Sequence 6

NNNNNNNNNNNNNNNGCCTANNNTGCAAGTCGAGCGCACTCTTCGGAGTGAGCGGCGGACGGGTTAGTAACGC  
GTGGGAACATACCCTTTTCTACGGAATAGCCTCGGGAAACTGAGAGTAATACCGTATACGCCCTTCGGGGGAAAG  
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GAATCTTAGACAATGGGCGCAAGCCTGATCTAGCCATGCCGCGTGAGTGACGAAGGCCTTAGGGTCGTAAAGCTC  
TTTCGCCAGAGATGATAATGACAGTATCTGGTAAAGAAACCCCGGCTAACTCCGTGCCAGCAGCCGCGTAATAC  
GGAGGGGGTTAGCGTTGTTCGGAATTAAGCGTACGTAGGCGGATTAGAAAGTAGGGGGTGAAA  
TCCCAGGGCTCAACCCTGGAAGTGCCTCCTAAACTACTAGTCTAGAGTTCGAGAGAGGTGAGTGGAAATCCAAGT  
GTAGAGGTGAAATTCGTAGATATTTGGAGGAACACCAAGTGGCGAAGGCGGCTCACTGGCTCGATACTGACGCTG  
AGGTACGAAAGTGTGGGGAGCAAACAGGATTAGATACCCTGGTAGTCCACACCGTAAACGATGAATGCCAGACG  
TCGGGGGGCTTGCCCTTCGGTGTACACCTAACGGATTAAGCATTCCGCCTGGGAGTACGGTCGCAAGATTAAA  
ACTCAAAGGAATTGACGGGGGGCCCGACAAGCGGTGGAGCATGTGGTTTAATTCGAAGCAACGCGCAGAACCTT  
ACCAACCCTTGACATCCTCGGACCGGCAGAGAGATCTGTTTTCACTTCGGTGGCCGAGTGACAGGTGCTGCATG  
GCTGTCGTCAGCTCGTGTGAGATGTTTCGNTAAGTCCGGCAACGAGCGCAACCCACATCCTANTTGCCAGC  
AGTTCGGCTGGGNN

### Sequence 7

NNNNNNNNNNNGNACNCATGCAGTCGAGCGAGANCTTCGGGTCTAGCGGCGGACGGGTTAGTAACGCGTGG  
GAATATACCCCTTCACTACGGAATAGCCTCGGGAAACTGGGAGTAATACCGTATACGCCCTTCGGGGGAAAGATTT  
ATCGGTGAAGGATTAGCCCCGCTCTGATTAGATAGTTGGTGGGGTAATGGCCTACCAAGTCTACGATCAGTAGCT  
GGTTTGAGAGGATGATCAGCAACACTGGGACTGAGACACGGCCCAGACTCCTACGGGAGGCAGCAGTGGGGAAT  
CTTAGACAATGGGCGCAAGCCTGATCTAGCCATGCCGCGTGAGTGACGAAGGCCTTAGGGTCGTAAAGCTCTTTC  
GCCAGAGATGATAATGACAGTATCTGGTAAAGAAACCCCGGCTAACTCCGTGCCAGCAGCCGCGGTAATACGGAG  
GGGGTTAGCGTTGTTTCGGAATTACTGGGCGTAAAGCGTACGTAGGCGGATTAGAAAAGTAGGGGGTAAAATCCCA  
GGGCTCAACCCTGGAAGTGCCTCCTAACTACTAGTCTAGAGTTCGAGAGAGGTGAGTGAATTCCAAGTGTAGA  
GGTGAAATTCGTAGATATTTGGAGGAACACCAAGTGGCGAAGGCGGCTCACTGGCTCGATACTGACGCTGAGGTA  
CGAAAGTGTGGGGAGCAAACAGGATTAGATACCCTGGTAGTCCACACCGTAAACGATGAATGCCAGACGTCAGG  
GGGCTTGCCCTTTGGTGTACACCTAACGGATTAAGCATTCCGCTGGGGAGTACGGTCGCAAGATTAATACTCAA  
AGGAATTGACGGGGGCCCGCACAAAGCGGTGGAGCATGTGGTTTAATTCGAAGCAACGCGCANAACTTACCAAC  
CCTTGACATCCTCTGACCGGCTGGGAGACCAGCTTTTCTCGTAAGAGACAGAGTGACAGGTGCTGCATGGCTGTC  
GTCAGCTCGTGTGAGATGTTTCGGTTAAGTCCGGCAACGAGCGCAACCCACATCTTTAGTTGCCAGCAGTTCGN  
CTGGGCACTCTAAAGAAACNN

### Sequence 8

NNNNNNNNNGNNGCNACNNTGCAGTCGAACGGAAACATGTCTAGCTTGCTAGATGATGTCGAGTGGCGGACGG  
GTGAGTAATGCCTGGGAATTTGCCTTTGTGTGGGGGATAACCATTGGAAACGATGGCTAATACCGCATGATACCT  
ACGGGTCAAAGGGGGCTTCGGCTCCCGCGCAAAGAGAAGCCCAGGTGAGATTAGCTAGTTGGTGAAGTAAAGGC  
TCACCAAGGCGACGATCTCTAGCTGTTCTGAGAGGAAGATCAGCCACACTGGAAGTGAAGACACGGTCCAGACTCC  
TACGGGAGGCAGCAGTGGGGAATATTGCACAATGGGCGAAAGCCTGATGCAGCCATGCCGCGTGTGTGAAGAA  
GGCCTTCGGGTTGTAAAGCACTTTCAGTTGTGAGGAAAGGTTGGCGGTTAATACCCGTCAGCTGTGACGTTAGCA  
ACAGAAGAAGCACCGGCTAACTCCGTGCCAGCAGCCGCGTAATACGGAGGGTGCAAGCGTTAATCGGAATTAC  
TGGGCGTAAAGCGCACGCAGGCGGTCTGTTAAGCTAGATGTGAAAGCCCCGCTCAACGTGGGATGGTCATTTA  
GAACTGGCAGACTAGAGTTTTGGAGAGGAGAGTGAATTCCAGGTGTAGCGGTGAAATGCGTAGATATCTGGAG  
GAACATCAGTGGCGAAGGCGACTCTCTGGTCAATAACTGACGCTCATGTGCGAAAGTGTGGGTAGCGAACAGGA  
TTAGATACCCTGGTAGTCCACACCGTAAACGCTGTCTACTAACTGTTTGTGGATTTAATCCGTGAGTAGTGAAGCTA  
ACGCGATAAGTAGACCGCTGGGGAGTACGGCCGCAAGGTTAAAACCTCAAATGAATTGACGGGGGCCCGCACAA  
GCGGTGGAGCATGTGGTTTAATTCGATGCAACGCGAAGAACCTTACCTACTTTGACATACTTGNNAATTTTTCANA  
NATGATTANTGCCTTCGGGNCNNNTACNNNGCTGCATGNTGTCGTCAGCTCGTGTGAGATGTTGGGTNNTC  
CCNNACGAGCGCAACNN

### Sequence 9

NNNNNNNNGNNGCTTACNNTGCAGTCGAGGGGTAGCAGGGAGCTTGCTCCGCTGACGACCGGCGAACGGGTG  
CGTAACGCGTATAGAATCTACCTCTTACTAAGGGATAGCCCAGAGAAATTTGGATTAATATCTTATAGTATACAGA  
CCTGGCATCAGGATTGTATTAAGGTTACGGTAAGAGATGACTATGCGTCTATTAGCTAGATGGTGTGGTAACG  
GCACACCATGGCTACGATAGGTAGGGGCCCTGAGAGGGGGATCCCCACACTGGTACTGAGACACGGACCAGAC  
TCCTACGGGAGGCAGCAGTGAGGAATATTGGACAATGGAGGCAACTCTGATCCAGCCATGCCGCGTGCAGGAAG  
ACTGCCCTATGGGTTGAAACTGCTTTTATACAGGAAGAAACACTCTCACGTGTGAGAGCTTGACGGTACTGTAAG  
AATAAGGATCGGCTAACTCCGTGCCAGCAGCCGCGGTAATACGGAGGATCCAAGCGTTATCCGGAATCATTGGGT  
TTAAAGGGTCCGTAGGTGGATGATTAAGTCAGAGGTGAAATCCTGCAGCTCAACTGTAGAATTGCCTTTGATACTG  
GTTGTCTTGAGTTATTATGAAGTAGTTAGAATATGTAGTGTAGCGGTGAAATGCATAGATATTACATAGAATACCA  
ATTGCGAAGGCAGATTAATAATACTGACACTGATGGACGAAAGCGTGGGGAGCGAACAGGATTAGATAC  
CCTGGTAGTCCACGCCGTAAACGATGGTCACTAGCTGTTCCGACTTCGGTTTGAGTGGCTAAGCGAAAGTGATAA  
GTGACCCACCTGGGGAGTACGTTCAAGAATGAAACTCAAAGGGAATTGACGGGGGCCCCGACAAGCGGTGGA  
GCATGTGGTTTAATTGATGATACGCGAGGAACCTTACCNGGCTTAAATGTAGATTGACAGGTTTAGAAATAGACT  
TTTCTTCGGANANTTACANNGCTGCATGGNNTCGTCAGCTCGTGCCNTGAGNNGTCAGGTTAAGTCCTANNAN

### Sequence 10

GCGCAGCCCTACCATGCNAGTCGAGCGGTAACATTTCTAGCTTGCTAGAAGATGACGAGCGGCGGACGGGTGAG  
TAATGCTTGGGAACATGCCTTGAGGTGGGGGACAACCATTGGAACGATGGCTAATACCGCATAATGTCTACGGA  
CCAAAGGGGGCTTCGGCTCTCGCCTTAGATTGGCCCAAGTGGGATTAGCTAGTTGGTGAAGTAAAGGCTCACCA  
AGGCGACGATCCCTAGCTGGTTTGAGAGGATGATCAGCCACACTGGAAGTGAACACGGTCCAGACTCCTACGGG  
AGGCAGCAGTGGGGAATATTGCACAATGGGCGCAAGCCTGATGCAGCCATGCCGCGTGTGTGAAGAAGGCCTTC  
GGTTGTAAAGCACTTTCAGTCAGGAGGAAAGGTTAGTAGTTAATACCTGCTAGCTGTGACGTTACTGACAGAAG  
AAGCACCGGCTAACTCCGTGCCAGCAGCCGCGGTAATACGGAGGGTGCAGCGTAAATCGGAATTACTGGGCGT  
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CAAAGTAGAGTGTGATAGAGGGTGGTGAATTTAGGTGTAGCGGTGAAATGCGTAGAGATCTGAAGGAATACC  
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CCCTGGTAGTCCACGCCGTAAACGATGTCTACTAGGAGCTGGGGTCTTCGGACAACCTTTCCAAAGCTAACGCATT  
AAGTAGACCGCCTGGGGAGTACGGCCGCAAGGTTAAACTCAAATGAATTGACGGGGGCCCCGACAAGCGGTGG  
AAGCATGTGGNTTAAATTCGATGCAACGCGAAGAACCTTACCTACACTTGACATACAGAGAACTTACNAAAAATG  
GTTTGGTGCCTTCNGGAGCTCTGATACAGGTGCTGCATGGCTGTCCTCACCTCCTGTTNTNNAATNTTGGGTAA  
ATNCCCCAACGAGCGCANCCCCTATCTNANTCCNACCGATNCGNTCGGGANCTCTAAGAAAAGTCCGGTTAA  
AANCCCGNAGAAAGGGGGGNACAACNTCAANTCTCNTGGNCCCTNACTNTAGGGCTACCNCNTNCTCAATGGC  
NGGTACAAAAACNCCNA

### Sequence 11

GCGCAGCCTACCATGCAGTCGAGCGGTAACATTTCTAGCTTGCTAGAAGATGACGAGCGGCGGACGGGTGAGTA  
ATGCTTGGGAACATGCCTTTAGGTGGGGGACAACCATTGAAACGATGGCTAATACCGCATAATGTCTACGGACC  
AAAGGGGGCTTCGGCTCTCGCCTTTAGATTGGCCCAAGTGGGATTAGGTAGTTGGTGAGGTAATGGCTCACCAAG  
CCGACGATCCCTAGCTGGTTTGAGAGGATGATCAGCCACACTGGAAGTGAACACGGTCCAGACTCCTACGGGAG  
GCAGCAGTGGGGAATATTGCACAATGGGCGCAAGCCTGATGCAGCCATGCCGCGTGTGTGAAGAAGGCCTTCGG  
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GCACCGGCTAACTCCGTGCCAGCAGCCGCGGTAATACGGAGGGTGCGAGCGTTAATCGGAATTACTGGGCGTAA  
AGCGTACGCAGGCGGTTTGTAAAGCGAGATGTGAAAGCCCCGGGCTCAACCTGGGAACTGCATTTGAACTGGCA  
AACTAGAGTGTGATAGAGGGTGGTAGAATTTAGGTGTAGCGGTGAAATGCGTAGAGATCTGAAGGAATACCGA  
TGGCGAAGGCAGCCACCTGGGTCAACACTGACGCTCATGTACGAAAGCGTGGGGAGCAAACGGGATTAGATACC  
CCGGTAGTCCACGCCGTAACGATGTCTACTAGGAGTTCGGTCTTTGGGACTGTCTTCAAAGCTAACGCATTAA  
GTAGACCGCCTGGGGAGTACGGCCGCAAGGTTAAACTCAAATGAATTGACGGGGGGCCCGCACAAGCGGTGGAA  
CCATGTGGTTTAATTCNATGCACCNCGAANAACCTTACCTACACTTGACATCCANANAACCTTGCTANANAATAGTT  
TGGTGCCTTCNGGANCTCTGAAACAGGTGCTTGCATGGCTGTCNTCANCTCNTGTTNTTAAATGTTTGGGTTAAT  
TCCNCACCAACCCANCCNTATCTNANTTGCCANCNATTNCTCGGGANCTTAAGNAACTGCCGGTGATA  
ACCCGAANNAAGNNGGNACAACNTCAANTCTCNNGGCCCTTNNNTNTNNGGCTACCCNTNCTANANGGNCC  
AAACAANN

### Sequence 12

GGCGCNGCCCTACCATGCNAGTCGAGCGGTAACAGGAAGTGCTTGCACCTTCGCTGACGAGCGGCGGACGGGTGA  
GTAATGCTTGGGGATCTGCCTCTAGGTGGGGGATAACTACTGAAACGGTGGCTAATACCGCATGACGTCTACGG  
ACCAAAGATAGCCTCTGAATATGCTATCGCCTAGAGATGAACCCAAGTGGGATTAGGTAGTTGGTGAGGTAAGG  
CTACCAAGCCGACGATCCCTAGCTGGTCTGAGAGGATGATCAGCCACACTGGAAGTGAACACGGTCCAGACTC  
CTACGGGAGGCAGCAGTGGGGAATATTGCACAATGGGCGCAAGCCTGATGCAGCCATGCCGCGTGTGTGAAGAA  
GGCTTTCGGGTTGTAAAGCACTTTCAGTGGGGAGGAAAGGGTGTACGTTAATAGCGTGCATCTGTGACGTTACCC  
ACAGAAGAAGCACCGGCTAACTCCGTGCCAGCAGCCGCGGTAATACGGAGGGTGCAAGCGTTAATCGGAATTAC  
TGGGCGTAAAGCGCACGAGGCGGTTTGTAAAGCGAGATGTGAAATCCCCGGGCTCAACCTGGGAATTGCATTC  
GAACTGGCAAAGTACGAGAGAGGGGGGTAGAATCCAGGTGTAGCGGTGAAATGCGTAGATATCTGGA  
GGAATACCGATGGCGAAGGCAGCCCCCTGGTTCGATACTGACGCTCAGGTGCGAAGGCGTGGGGAGCAAACAG  
GATTAGATACCCTGGTAGTCCACGCGGTAACGATGTCTACTAGCAGCTCGCTCCGTAGAGGAGGGTTTTGCGCA  
GCTAACCGGATAAGTAGACCGCCTGGGGAGTACGGTCGCAAGATTAATAACTCAAATGAATTGACGGGGGGCCCGC  
ACAAGCGGTGGAGCATGTGGTTTAATTCGATGCAACGCGAAGAACCTTACCATCCCTTGACATCCACAGAAGAATC  
TAGAGATAGATTTGTGCCNTNCGGAACTGTGANACAGGTGCTGCATGGCTGTCGTCANCTCGTGTTGTGANATGT  
TGGGTTAANTCCCGCAACGAGCGCAACCCCTATCCTTANTTGCTANCANTTTGGCTGAAAACCTAAGGAACTG  
CCGGTGANN

### Sequence 13

CGCNGCCTACCATGCAGTCGAGCGGTAACATTTCTAGCTTGCTAGAAAGATGACGAGCGGCGGACGGGTGAGTAA  
TGCTTGGGAACATGCCTTTAGGTGGGGGACAACCATTGGAAACGATGGCTAATACCGCATAATGTCTACGGACCA  
AAGGGGGCTTCGGCTCTCGCCTTTAGATTGGCCCAAGTGGGATTAGCTAGTTGGTGAGGTAATGGCTCACCAAGG  
CGACGATCCCTAGCTGGTTTGAGAGGATGATCAGCCACACTGGAAGTACGACACGGTCCAGACTCCTACGGGAGG  
CAGCAGTGGGGAATATTGCACAATGGGCGCAAGCCTGATGCAGCCATGCCGCGTGTGTGAAGAAGGCCTTCGGG  
TTGTAAAGCACTTTAGTAAGGAGGAAAGGTTAGTAGTTAATACCTGCTAGCTGTGACGTTACTTACAGAAGAAG  
CACCGGCTAACTCCGTGCCAGCAGCCGCGTAATACGGAGGGTGCAGCGTTAATCGGAATTACTGGGCGTAAA  
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ACTAGAGTGTGATAGAGGGTGGTAGAATTTAGGTGTAGCGGTGAAATGCGTAGAGATCTGAAGGAATACCGAT  
GGCGAAGGCAGCCACCTGGGTCAACACTGACGCTCATGTACGAAAGCGTGGGGAGCAAACGGGATTAGATACCC  
CGGTAGTCCACGCCGTAAACGATGTCTACTAGGAGTTCGGTCTTTGAGACTGTCTTCAAAGCTAACGCATTAAG  
TAGACCGCCTGGGGAGTACGGCCGCAAGGTTAAAACCTCAAATGAATTGACGGGGGCCCGCACAAGCGGTGGAGC  
ATGTGGTTTAATTCGATGCAACGCGAAGAACNTTACCTACACTTGACATCCAGAGAACTACTAAAGATAGTTTGGT  
GCCTTCNGGAACTCTGANACAGGTGCTGCATGGCTGTCNTCANCTCGTGTGTGAAATGTTTGGNTAAATNCCCC  
AACGANCGCAACCCCTATCCTNATTNGCCANCGATNCGNTCGGGANCTCTAAGGAACTGCCNGTGAAAACCNG  
AAGAAAGGTGGGGACNACCTCAANTCTTCTTGGNCCCTTN

### Sequence 14

NNNNNNGCGCNGCNACACATGCAGTCGAGCGAGATCTTCGGATCTAGCGGCGGACGGGTAGTAACGCGTGG  
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ATCGCCTTTGGATCGGCCCGGTTAGATTAGATAGTTGGTGGGGTAACGGCCTACCAAGTCTACGATCTATAGCTG  
GTTTTAGAGGATGATCAGCAACACTGGGACTGAGACACGGCCAGACTCCTACGGGAGGCAGCAGTGGGGAATC  
TTGGACAATGGGGGCAACCCTGATCCAGCCATGCCGCGTGAGTGATGAAGGCCCTAGGGTTCGTAAGCTCTTTCG  
CCTGTGAAGATAATGACTGTAGCAGGTAAGAAACCCCGGCTAACTCCGTGCCAGCAGCCGCGGTAATACGGAG  
GGGGTTAGCGTTGTTTCGGAATTACTGGGCGTAAAGCGCGCTAGGCGGACTGGAAAGTTGGGGGTGAAATCCCA  
GGGCTCAACCCTGGAAGTGCCTCCAAAACCTATCAGTCTAGAGTTTCGAGAGAGGTGAGTGAATTCCGAGTGTAGA  
GGTGAATTCGTAGATATTCGGAGGAACACCAGTGCCGAAGGCGGCTCACTGGCTCGATACTGACGCTGAGGTG  
CGAAAGTGTGGGGAGCAAACAGGATTAGATACCCTGGTAGTCCACACCGTAAACGATGAATGCCAGTCGTCGGG  
TAGCATGCTATTCGGTGACACACCTAACGGATTAAGCATTCCGCCTGGGGAGTACGGTCGCAAGATTAACCTCAA  
AGGAATTGACGGGGGCCCGCACAAGCGGTGGAGCATGTGGTTAATTCGAAGCAACGCGCAGAACCTTACCAAC  
CCTTGACATCCTCGGACCGCCAGAGAGATTTGGCTTTCATTCGGTGACCGAGTGACAGTGCTGCATGGCTGTCGT  
CAGCTCGTGTGAGATGTTTCGGTTAAGTCCGGCACGAGCGCACCATCTANTGCAGCAGTCGGCTGGGCANT  
CTANNAACTGCCGTGATAGCNGGGAGGAAGNNGNNATGACGTC

## Sequence 15

NNNNNNANNNNNNGNNNGNTNANNNATGCAAGTCGAGGGGTAACAGGGTGCTTGCACCGCTGACGACCGGCG  
AACGGGTGCGTAACGCGTATAGAATCTGCCTTGTACAGGAGGATAGCCTTTAGAAATGAAGATTAATACTCCATA  
ATACTGAGATGTGGCATCACAATTTAGTTAAAGATTTATCGGTACAAGATGACTATGCGTCCTATTAGCTAGATGG  
TAAGGTAACGGCTTACCATGGCAACGATAGGTAGGGGGTCTGAGAGGATTATCCCCACACTGGTACTGAGACAC  
GGACCAGACTCCTACGGGAGGCAGCAGTGAGGAATATTGGTCAATGGAGGCAACTCTGAACCAGCCATGCCGCG  
TGCAGGAAGACTGCCCTATGGGTTGTAACTGCTTTTATACAGGAAGAAACACTCCCTCGTGAGGGGGCTTGACG  
GTACTGTAAGAATAAGCACCGGCTAACTCCGTGCCAGCAGCCGCGGTAATACGGAGGGTGCAAGCGTTATCCGG  
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A