

Alignment of consensus sequences of all monomer types identified in all NBPF HOR arrays in Neanderthal and human chromosome 1

For alignment of monomers we used CLUSTALO tool on link: <http://www.ebi.ac.uk/Tools/msa/clustalo/> with input parameters:

Program: clustalo
Version: 1.2.2
Output Guide tree: false
Output distance matrix: false
Realign input sequences: false
Mbed-like clustering Guide tree: true
Mbed-like clustering iteration: true
Number of iterations: 0
Maximum Guide tree iterations: -1
Maximum HMM iterations: -1
Output alignment format: clustal_num
Output order: input
Sequence Type: dna

Description of monomers used in this alignment:

- Nean – Neanderthal HOR array.
- human – human HOR array,
- m01...m04 ...monomer type
- numbers ~1600 – consensus length of specific monomer type in HOR array

Sequence 1: s1 1572 Nean 16 copy 3mer ~4708 bp HOR m01
Sequence 2: s2 1589 Nean 16 copy 3mer ~4708 bp HOR m02
Sequence 3: s3 1608 Nean 16 copy 3mer ~4708 bp HOR m03
Sequence 4: s4 1530 Nean 13 copy 3mer ~4724 bp HOR m01
Sequence 5: s5 1585 Nean 13 copy 3mer ~4724 bp HOR m02
Sequence 6: s6 1609 Nean 13 copy 3mer ~4724 bp HOR m03
Sequence 7: s7 1572 Nean 4 copy 4mer ~6236 bp HOR m01
Sequence 8: s8 1588 Nean 4 copy 4mer ~6236 bp HOR m02
Sequence 9: s9 1606 Nean 4 copy 4mer ~6236 bp HOR m03
Sequence 10: s10 1515 Nean 4 copy 4mer ~6236 bp HOR m04
Sequence 11: s11 1529 Nean 12 copy 3mer ~4749 bp HOR m01
Sequence 12: s12 1609 Nean 12 copy 3mer ~4749 bp HOR m02
Sequence 13: s13 1611 Nean 12 copy 3mer ~4749 bp HOR m03
Sequence 14: s14 1484 Nean 2 copy 4mer ~6069 bp HOR m01
Sequence 15: s15 1496 Nean 2 copy 4mer ~6069 bp HOR m02
Sequence 16: s16 1579 Nean 2 copy 4mer ~6069 bp HOR m03
Sequence 17: s17 1611 Nean 2 copy 4mer ~6069 bp HOR m04
Sequence 18: s18 1521 Nean 18 copy 3mer ~4770 bp HOR m01
Sequence 19: s19 1597 Nean 18 copy 3mer ~4770 bp HOR m02
Sequence 20: s20 1606 Nean 18 copy 3mer ~4770 bp HOR m03
Sequence 21: s21 1534 Human 22 copy 3mer ~4770 bp HOR m01

- Sequence 22: s22 1583 Human 22 copy 3mer ~4770 bp HOR m02
- Sequence 23: s23 1629 Human 22 copy 3mer ~4770 bp HOR m03
- Sequence 24: s24 1529 Human 14 copy 3mer ~4770 bp HOR m01
- Sequence 25: s25 1585 Human 14 copy 3mer ~4770 bp HOR m02
- Sequence 26: s26 1603 Human 14 copy 3mer ~4770 bp HOR m03
- Sequence 27: s27 1529 Human 2 copy 3mer ~4770 bp HOR m01
- Sequence 28: s28 1604 Human 2 copy 3mer ~4770 bp HOR m02
- Sequence 29: s29 1625 Human 2 copy 3mer ~4770 bp HOR m03
- Sequence 30: s30 1535 Human 11 copy 3mer ~4770 bp HOR m01
- Sequence 31: s31 1567 Human 11 copy 3mer ~4770 bp HOR m02
- Sequence 32: s32 1609 Human 11 copy 3mer ~4770 bp HOR m03
- Sequence 33: s33 1538 Human 14 copy 3mer ~4770 bp HOR m01
- Sequence 34: s34 1589 Human 14 copy 3mer ~4770 bp HOR m02
- Sequence 35: 1634 Human 14 copy 3mer ~4770 bp HOR m03

CLUSTAL O(1.2.2) multiple sequence alignment

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s1      CCTCCTGAAGACTATCTCTCACAGTGTCTATTCTCATGCTGAGGAGCCTGAAGTCCCTG      60
s2      CCTCCTGAAGTATCTCTCTCACATTGTCTGTTCTCATGCTGAGGAGCCTGAGATCCCTG      60
s3      CCTCCTGAAATATATCTCTCACGGTGTCTATTCTTATGCTGAGGAGCCTGAGGTCCCTG      60
s4      CCTCCTGAAGACTATCTCTCACAGTGTCTATTCTCATGCTGAGGAGCCTGAAGTCCCTG      60
s5      CCTCCTGAAGTATATCTCTCACATTGTCTGTTCTCATGCTGAGGAGCCTGAGATCCCTG      60
s6      CCTCCTGAAATATATCTCTCACAGTGTCTATTCTTATGCTGAGGAGCCTGAGGTCCCTG      60
s7      CCTCCTGAAGAAATATCTCTCACAGTGTCTATTCTCATGCTGAGGAGCCTGAAGTCCCTG      60
s8      CCTCCTGAAGTATATCCCTCAAATTGTCTGTTCTCATGCTGAGGAGCCTGAGATCCCTG      60
s9      CCTCCTGAAATATATCTCTCACAGTGTCTATTCTTATGCTGAGGAGCCTGAGGTCCCTG      60
s10     CCTCCTGAAGAAATATCTCTCACAGTGTCTATTCTCATGCTGAGGAGCCTGAAGTCCCTG      60
s11     CCTCCTGAAGAAATATCTCTCACAGTGTCTATTCTCATGCTGAGGAGCCTGAAGTCCCTG      60
s12     CCTCCTGAAGTATATCCCTCAAATTGTCTGTTCTCATGCTGAGGAGCCTGAGATCCCTG      60
s13     CCTCCTGAAATATATCTCTCACAGGCTCCGATGCTTAAAGCTCCCGAGCCGGGGATCACAC      60
s14     CCCCCAAAACAAGACCTCACACAGACTCCAATATCTCATCCCAAAGACCCCGAAGCCACA      60
s15     CCTCCTGAAGAATACCCACAACAGCCACCCACACG----CAGACGAAACAGAAGGAACTC      56
s16     CCTCCTGAAGTACATCTCACACAGTCCCTGCTCACACGCAGAAGACCCAGAGACCCCTG      60
s17     CCTCCTGAAATATATCTCTCACAGTGTCTATACGCAGACGAACCGACGGACCTCCCTG      60
s18     CCTCCTGAAGACTATCTCTCACAGTGTCTATTCTCATGCTGAGGAGCCTGAAGTCCCTG      60
s19     CCTCCTGAAGTATCTCTCTCACATTGTCTGTTCTCATGCTGAGGAGCCTGAGATCCCTG      60
s20     CCTCCTGAAATATATCTCTCACGGTGTCTATTCTTATGCTGAGGAGCCTGAGGTCCCTG      60
s21     CCTCCTGAAGACTATCTCTCACAGTGTCTATTCTCATGCTGAGGAGCCTGAAGTCCCTG      60
s22     CCTCCTGAAGTATCTCTCTCACATTGTCTGTTCTCATGCTGAGGAGCCTGAGATCCCTG      60
s23     CCTCCTGAAATATATCTCTCACGGTGTCTATTCTTATGCTGAGGAGCCTGAGGTCCCTG      60
s24     CCTCCTGAAGACTATCTCTCACAGTGTCTATTCTCATGCTGAGGAGCCTGAAGTCCCTG      60
s25     CCTCCTGAAATATATCTCTCACAGTGTCTATTCTTATGCTGAGGAGCCTGAGGTCCCTG      60
s26     CCTCCTGAAATATATCTCTCACAGTGTCTATTCTTATGCTGAGGAGCCTGAGGTCCCTG      60
s27     CCTCCTGAAGAAATATCTCTCACAGTGTCTATTCTCATGCTGAGGAGCCTGAAGTCCCTG      60
s28     CCTCCTGAAGTATATCCCAAAAAGTCCCTGCTCACACGCAGAAGACCCAGAGACCCCTG      60
s29     CCTCCTGAAATATATCTCTCACAGTGTCTATTCTTATGCTGAGGAGCCTGAGGTCCCTG      60
s30     CCTCCTGAAGACTATCTCTCACAGTGTCTATTCTCATGCTGAGGAGCCTGAAGTCCCTG      60
s31     CCTCCTGAAGTATATCTCTCACATTGTCTGTTCTCATGCTGAGGAGCCTGAGATCCCTG      60
s32     CCTCCTGAAATATATCTCTCACAGTGTCTATTCTTATGCTGAGGAGCCTGAGGTCCCTG      60
s33     CCTCCTGAAGAAATATCTCTCACAGTGTCTATTCTCATGCTGAGGAGCCTGAAGTCTCTG      60
s34     CCTCCTGAAGTATATCTCTCACATTGTCTGTTCTCATGCTGAGGAGCCTGAGATCCCTG      60
s35     CCTCCTGAAATATATCTCTCACAGTGTCTATTCTTATGCTGAGGAGCCTGAGGTCCCTG      60
      **  **  **      *      *      **      *      *      *      *      *

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s1      TGTGAGGATTAGACAGTGGATTGTTATGTGTGTAGGAGAACCAGCTTAATATGTCTGTCC      120
s2      TGTGGGGATTAGACAGTGGACTGTTATGGGTGTAGGTGAATTGGCTTATTTTGTCTGTCC      120
s3      TGTGAGGATTAGACAGTGGATTGTTATGTGTGTAGGGGAATCAGCTTAATGTGTCTGTCC      120
s4      TGTGAGGATTAGACAGTGGATTGTTATGTGTGTAGGAGAACCAGCTTAATATGTCTGTCC      120
s5      TGTGGGGATTAGACAGTGGACTGTTATGGGTGTAGGTGAATTGGCTTATTTTGTCTGTCC      120
s6      TGTGAGGATTAGACAGTGGATTGTTATGTGTGTAGGGGAATCAGCTTAATGTGTCTGTCC      120
s7      TGTGAGGATTAGACAGTGGATTGTTATGTGTGTAGGAGAACCAGCTTCAATATGTCTGTCC      120
s8      TGTGGGGATTAGACAGTGGACTGTTATGGGTGTAGGTGAATTGGCTTATTTTGTCTGTCC      120

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s9 TGTGAGGATTAGACAGTGGATTGTTATGTGTGTAGGGGAATCAGCTTAATGTGTCTGTCC 120
s10 TGTGAGGATTAGACAGTGGATTGTTATGTGTGTAGGAGAACCAGCTTCATATGTCTGTCC 120
s11 TGTGAGGATTAGACAGTGGATTGTTATGTGTGTAGGAGAACCAGCTTCATATGTCTGTCC 120
s12 TGTGGGGATTAGACAGTGGACTGTTATGGGTGTAGGTGAATTGGCTTATTTTGTCTGTCC 120
s13 AGTGAATATTAAACAGTGGAGGGG-----AATCAGTTTAAGGGAATCAGCC 106
s14 CCGAAAAAACAGACAGCCCAGTGTAGGTGGGAAAGAGAAACAGCTCAATATGCAAGGAA 120
s15 CCTGAGGAAAAAACAGACAATGGATAGGTATGTAGGAAAACCAGCCCAGACGGAACTCA 116
s16 TGGGGAGAAGACACAGGACACTGATAGGGGTAGAGGAAAAGGCGCATATTGTCTCTCCCC 120
s17 AGGAAGAAACAGACAATGGATAGGTATGTAGGAAAAGCAACCAATGAATCTGTCCATCC 120
s18 TGTGAGGATTAGACAGTGGATTGTTATGTGTGTAGGAGAACCAGCTTAATATGTCTGTCC 120
s19 TGTGGGGATTAGACAGTGGACTGTTATGGGTGTAGGTGAATTGGCTTATTTTGTCTGTCC 120
s20 TGTGAGGATTAGACAGTGGATTGTTATGTGTGTAGGGGAATCAGCTTAATGTGTCTGTCC 120
s21 TGTGAGGATTAGACAGTGGATTGTTATGTGTGTAGGAGAACCAGCTTAATATGTCTGTCC 120
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s23 TGTGAGGATTAGACAGTGGATTGTTATGTGTGTAGGGGAATCAGCTTAATGTGTCTGTCC 120
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s29 TGTGAGGATTAGACAGTGGATTGTTATGTGTGTAGGGGAATCAGCTTAATGTGTCTGTCC 120
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s32 TGTGAGGATTAGACAGTGGATTGTTATGTGTGTAGGGGAATCAGCTTAATGTGTCTGTCC 120
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s34 TGTGGGGATTAGACAGTGGACTGTTATGGGTGTAGGTGAATTGGCTTATTTTGTCTGTCC 120
s35 TGTGAGGATTAGACAGTGGATTGTTATGTGTGTAGGGGAATCAGCTTAATGTGTCTGTCC 120

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s1 ATGCTCGAACTTATTGCAGAAATTGAAAAGTACCAAGAAGTGGAAGAAGACCAAGACCC- 179
s2 CTGTCTGAATGTATTGCAGGAAC TAAAAAGGACCAAGAAGAGGGAAGAAAGACCAAGGCC- 179
s3 ATGCTCGAATTTATTGCAGAAATTGAAAAGAAAGGGGAAGGGGAAGAAAAGAAAGGGGAAGA 180
s4 ATGCTCGAACTTATTGCAGAAATTGAAAAGTACCAAGAAGTGGAAGAAGACCAAGACCC- 179
s5 CTGTCTGAATGTATTGCAGGAATTAAAAAGGACCAAGAAGAGGGAAGAAAGACCAAGGCC- 179
s6 ATGCTCGAATTTATTGCAGAAATTGAAAAGAAAGGGGAAGGGGAAGAAAAGAAAGGGGAAGA 180
s7 ATGCTCGAACTTATTGCAGAAATTGAAAAGTACCAAGAAGTGGAAGAAGACCAAGACCC- 179
s8 CTGCCTGAATGTATTGCAGGAATTAAAAAGGACCAAGAAGAGGGAAGAAAGACCAAGGCC- 179
s9 ATGCTCGAATTTATTGCAGAAATTGAAAAGAAAGGGGAAGGGGAAGAAAAGAAAGGGGAAGA 180
s10 ATGCTCGAACTTATTGCAGAAATTGAAAAGTACCAAGAAGTGGAAGAAGACCAAGACCC- 179
s11 ATGCTCGAACTTATTGCAGAAATTGAAAAGTACCAAGAAGTGGAAGAAGACCAAGACCC- 179
s12 CTGTCTGAATGTATTGCAGGAATTAAAAAGGACCAAGAAGAGGGAAGAAAGACCAAGGCC- 179
s13 TAACTCGAATTTATAGCACAAATTGAAAAGAAAGGGAAAGGGGAAGAAAAGAAAGGGGAAGA 166
s14 AAAACCGCAAAATATAACAGAAACCAAAAAAACCAAGA----- 158
s15 ATGCAGAAACTGAAAACAAAAAGAAAAGAACAAAAAAGAAAACAAACCAACCAACCC- 175
s16 CCGGAAGAAAGTACAGCAAGAAAAAACCACCAAGAAAGAAAGAAACCAACCAACCC- 179
s17 ATGAATGAATTGAAAGAAAGAAAAAAGAAAAGAAAAGAAAAAAGAAAAAAGAAAA 180
s18 ATGCTCGAACTTATTGCAGAAATTGAAAAGTACCAAGAAGTGGAAGAAGACCAAGACCC- 179
s19 CTGTCTGAATGTATTGCAGGAAC TAAAAAGGACCAAGAAGAGGGAAGAAAGACCAAGGCC- 179
s20 ATGCTCGAATTTATTGCAGAAATTGAAAAGAAAGGGGAAGGGGAAGAAAAGAAAGGGGAAGA 180
s21 ATGCTCGAACTTATTGCAGAAATTGAAAAGTACCAAGAAGTGGAAGAAGACCAAGACCC- 179
s22 CTGTCTGAATGTATTGCAGGAAC TAAAAAGGACCAAGAAGAGGGAAGAAAGACCAAGGCC- 179
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s25 ATGCTCGAATTTATTGCAGAAATTGAAAAGAAAGGGGAAGGGGAAGAAAAGAAAGGGGAAGA 180
s26 ATGCTCGAATTTATTGCAGAAATTGAAAAGAAAGGGGAAGGGGAAGAAAAGAAAGGGGAAGA 180
s27 ATGCTCGAACTTATTGCAGAAATTGAAAAGTACCAAGAAGTGGAAGAAGACCAAGACCC- 179
s28 CCCCCCAAAATATAGCACAAAAAACAACAAAAAAGAAAAAAGAAAAAAGAAAAAAGAAAA 178
s29 ATGCTCGAATTTATTGCAGAAATTGAAAAGAAAGGGGAAGGGGAAGAAAAGAAAGGGGAAGA 180
s30 ATGCTCGAACTTATTGCAGAAATTGAAAAGTACCAAGAAGTGGAAGAAGACCAAGACCC- 179
s31 CTGTCTGAATGTATTGCAGGAATTAAAAAGGACCAAGAAGAGGGAAGAAAGACCAAGACCC- 179
s32 ATGCTCGAATTTATTGCAGAAATTGAAAAGAAAGGGGAAGGGGAAGAAAAGAAAGGGGAAGA 180
s33 ATGCTCGAACTTATTGCAGAAATTGAAAAGTACCAAGAAGTGGAAGAAGACCAAGACCC- 179
s34 CTGTCTGAATGTATTGCAGGAATTAAAAAGGACCAAGAAGAGGGAAGAAAGACCAAGACCC- 179
s35 ATGCTCGAATTTATTGCAGAAATTGAAAAGAAAGGGGAAGGGGAAGAAAAGAAAGGGGAAGA 180

** * * ** * *

s1 -----ATCA 183
s2 -----ACCA 183

s3 AGATCAAAGAAGGAAAGAAGAAGGGGAAGAAAAGAGGGGAAGAAAGATCAAACCCACCA 240
s4 -----ATCA 183
s5 -----ACCA 183
s6 AGATCAAAGAAGGAAAGAAGAAGGGGAAGAAAAGAGGGGAAGAAAGATCAAACCCACCA 240
s7 -----ATCA 183
s8 -----ACCA 183
s9 AGATCAAAGAAGAAAAGAAGAAGGGGAAGAAAAGAGGGGAAGAAAGATCAAACCCACCA 240
s10 -----ATCA 183
s11 -----ATCA 183
s12 -----ACCA 183
s13 AAAGAAAGGAAAAAGAAAAAGGGGAAAAAAGAGGGGAAGAAAAGAAAAACCAACAA 226
s14 -----ACAGGAAAAAGACCAAAACAAATCA 183
s15 -----AAAA 179
s16 -----ACCA 183
s17 AAAACAAAGAA---AGAAAAAGAAAAGAAAAAAGAAAAGAAAAAATAAAACCA 236
s18 -----ATCA 183
s19 -----ACCA 183
s20 AGATCAAAGAAGGAAAGAAGAAGGGGAAGAAAAGAGGGGAAGAAAGATCAAACCCACCA 240
s21 -----ATCA 183
s22 -----ACCA 183
s23 AGATCAAAGAAGGAAAGAAGAAGGGGAAGAAAAGAGGGGAAGAAAGATCAAACCCACCA 240
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s25 AGATCAAAGAAGGAAAGAAGAAGGGGAAGAAAAGAGGGGAAGAAAGATCAAACCCACCA 240
s26 AGATCAAAGAAGGAAAGAAGAAGGGGAAGAAAAGAGGGGAAGAAAGATCAAACCCACCA 240
s27 -----ATCA 183
s28 C-----AACCA 183
s29 AGATCAAAGAAGAAAAGAAGAAGGGGAAGAAAAGAGGGGAAGAAAGATCAAACCCACCA 240
s30 -----ATCA 183
s31 -----ACCA 183
s32 AGATCAAAGAAGGAAAGAAGAAGGGGAAGAAAAGAGGGGAAGAAAGATCAAACCCACCA 240
s33 -----ATCA 183
s34 -----ACCA 183
s35 AGATCAAAGAAGGAAAGAAGAAGGGGAAGAAAAGAGGGGAAGAAAGATCAAACCCACCA 240
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s1 TGCCCCAGGTAACTTTGAGCAATTAATGGATGCCTAATT---CTGTGTTGACACCTGGAGA 240
s2 TGCCCCAGG--TAACTGAGCAATTGTGAACAGCTACTT---CTGTGTTGACATCTGGAGA 238
s3 TGCCCCAGGTGACTTTGAGCAATTTGTTGGATGCCTAATT---CTGTGTTAACACCTGGAGG 297
s4 TGCCCCAGGTAACTTTGAGCAATTAATGGATGCCTAATT---CTGTGTTGACACCTGGAGA 240
s5 TGCCCCAGG--TAACTGAGCAATTGTGAACAGCTACTT---CTGTGTTGACATCTGGAGA 238
s6 TGCCCCAGGTGACTTTGAGCAATTTGTTGGATGCCTAATT---CTGTGTTAACACCTGGAGG 297
s7 TGCCCCAGGTAACTTTGAGCAATTAATGGATGCCTAATT---CTGTGTTGACACCTGGAGA 240
s8 TGCCCCAGG--TAACTGAGCAATTGTGAACAGCTACTT---CTGTGTTGACATCTGGAGA 238
s9 TGCCCCAGGTAACTTTGAGCAATTTGTTGGATGCCTAATT---CTGTGTTAACACCTGGAGG 297
s10 TGCCCCAGGTAACTTTGAGCAATTAATGGATGCCTAATT---CTGTGTTGACACCTGGAGA 240
s11 TGCCCCAGGTAACTTTGAGCAATTAATGGATGCCTAATT---CTGTGTTGACACCTGGAGA 240
s12 TGCCCCAGG--TAACTGAGCAATTGTGAACAGCTACTT---CTGTGTTGACATCTGGAGA 238
s13 AGCCCCAGCCACTTTCAGCAATTAAGGTTTCACTAATT---CTGGATGAACACTTGGGGG 283
s14 AAAACAGGAAAAACGAGACAAAAGATCCAAGCTGAATC---CGAGAAAGACCCACAAGA 240
s15 TGCCACAAAATAACGGAGACCAATAACGGAGGCGAAACC---CGGAG-----A 223
s16 CCCACAAA--CAAAGCAACAATGAACAACAACACTG---CGGTGACAACAGCAGAAGA 238
s17 ACCACCAACCACTGACAGCAACAATGGAGGATGAATAATGCGGTAAACAACCCAGGAAA 296
s18 TGCCCCAGGTAACTTTGAGCAATTAATGGATGCCTAATT---CTGTGTTGACACCTGGAGA 240
s19 TGCCCCAGG--TAACTGAGCAATTGTGAACAGCTACTT---CTGTGTTGACATCTGGAGA 238
s20 TGCCCCAGGTGACTTTGAGCAATTTGTTGGATGCCTAATT---CTGTGTTAACACCTGGAGG 297
s21 TGCCCCAGGTAACTTTGAGCAATTAATGGATGCCTAATT---CTGTGTTGACACCTGGAGA 240
s22 TGCCCCAGG--TAACTGAGCAATTGTGAACAGCTACTT---CTGTGTTGACATCTGGAGA 238
s23 TGCCCCAGGTGACTTTGAGCAATTTGTTGGATGCCTAATT---CTGTGTTAACACCTGGAGG 297
s24 TGCCCCAGGTAACTTTGAGCAATTAATGGATGCCTAATT---CTGTGTTGACACCTGGAGA 240
s25 TGCCCCAGGTGACTTTGAGCAATTTGTTGGATGCCTAATT---CTGTGTTAACACCTGGAGG 297
s26 TGCCCCAGGTGACTTTGAGCAATTTGTTGGATGCCTAATT---CTGTGTTAACACCTGGAGG 297
s27 TGCCCCAGGTAACTTTGAGCAATTAATGGATGCCTAATT---CTGTGTTGACACCTGGAGA 240
s28 CCCCACAGA--AAACAGAAAAAGTGAACACAGACACTT---CTGTGGACACATCGAGACA 238
s29 TGCCCCAGGTAACTTTGAGCAATTTGTTGGATGCCTAATT---CTGTGTTAACACCTGGAGG 297
s30 TGCCCCAGGTAACTTTGAGCAATTAATGGATGCCTAATT---CTGTGTTGACACCTGGAGA 240
s31 TGCCCCAGG--TAACTGAGCAATTGTGAACAGCTACTT---CTGTGTTGACATCTGGAGA 238
s32 TGCCCCAGGTGACTTTGAGCAATTTGTTGGATGCCTAATT---CTGTGTTAACACCTGGAGG 297
s33 TGCCCCAGGTAACTTTGAGCAATTAATGGATGCCTAATT---CTGTGTTGACACCTGGAGA 240

s34 TGCCCCAGG--TAACTGAGCAATTGTGAACAGCTACTT--CTGTGTTGACATCTGGAGA 238
s35 TGCCCCAGGTGACTTTTCAGCAATTGTGGATGCTTAATT--CTGTGTTAACACCTGGAGG 297

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s1 TGCCAGGT-----CCAGGGAAAAAAGAGTGTGTTCAATTTTCATGTTTTCAACGAAGG 293
s2 CTCTGGTTTCAGGGAAAAACAGAGCGGGCTGACATTAATCGATTACATCTTTTTCCAGCAAGC 298
s3 CAACAGAT-----TCAGGGAAA-CCAGAGTGTGTTTGTATGTCATGTTTTCAACGAAGG 349
s4 TGCCAGGT-----CCAGGGAAAAAAGAGTGTGTTCAATTTTCATATTTTTCAACGAAGG 293
s5 CTCTGGTTTCAGGGAAAAACAGCGGGCTGACATTAATCGATTACATCTTTTTCAACCAAGC 298
s6 CAACAGAT-----TCAGGGAAA-CCAGAGTGTGTTTGTATGACATGTTTTCAGCGAAGG 349
s7 TGCCAGGT-----CCAGGGAAAAAAGAGTGTGTTCAATTTTCATGTTTTCAACGAAGG 293
s8 CTCTGGTTTCAGGGAAAAATAGAGCGGGCTGACATTAATCGATTACATCTTTTTCAACCAAGC 298
s9 CAACAGAT-----TCAGGGAAA-CCAGAGTGTGTTTGTATGTCATGTTTTCAACGAAGG 349
s10 TGCCAGGT-----CCAGGGAAAAAAGAGTGTGTTCAATTTTCATGTTTTCCACGAAGG 293
s11 TGCCAGGT-----CCAGGGAAAAAAGAGTGTGTTCAATTTTCATGTTTTCAACGAAGG 293
s12 CTCTGGTTTCAGGGAAAAACAGAGCGGGCTGACATTAATCGATTACATCTTTTTCAACCAAGC 298
s13 CAAAAAT-----TCGGGAAA-CAGATCAGGTTAAACAGAAATGTTTTCAACGAAGG 335
s14 AACAGAT-----CCAGCAAAAACAGAGGCAAGCAAAAGGCAAAAACAGCAAAAGG 293
s15 TGACACCT-----CCAGAGAAAAAACAAGGGAAAAAAGACAGGGTTCAAACGAAGG 276
s16 CTCTGCAGCAAAAAAAAAACAGCCGACAACATCAACGACAACATCTCAACAAACAAGC 298
s17 CAAAACAG-----GCAACAAA-ACAGAGTGTGATGGAAGGCATGCAACCAACGAAGA 348
s18 TGCCAGGT-----CCAGGGAAAAAAGAGTGTGTTCAATTTTCATGTTTTCAACGAAGG 293
s19 CTCTGGTTTCAGGGAAAAACAGAGCGGGCTGACATTAATCGATTACATCTTTTTCCAGCAAGC 298
s20 CAACAGAT-----TCAGGGAAA-CCAGAGTGTGTTTGTATGTCATGTTTTCAACGAAGG 349
s21 TGCCAGGT-----CCAGGGAAAAAAGAGTGTGTTCAATTTTCATGTTTTCAACGAAGG 293
s22 CTCTGGTTTCAGGGAAAAACAGAGCGGGCTGACATTAATCGATTACATCTTTTTCCAGCAAGC 298
s23 CAACAGAT-----TCAGGGAAA-CCAGAGTGTGTTTGTATGTCATGTTTTCAACGAAGG 349
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s25 CAACAGAT-----TCAGGGAAA-CCAGAGTGTGTTTGTATGACATGTTTTCAGCGAAGG 349
s26 CAACAGAT-----TCAGGGAAA-CCAGAGTGTGTTTGTATGACATGTTTTCAGCGAAGG 349
s27 TGCCAGGT-----CCAGGGAAAAAAGAGTGTGTTCAATTTTCATGTTTTCAACGAAGG 293
s28 CCCCAGGCACAGAAAAACAGAGCGCGCACACAATAGAGAACACATCTTCAAAAAAAC 298
s29 CAACAGAT-----TCAGGGAAA-CCAGAGTGTGTTTGTATGTCATGTTTTCAACGAAGG 349
s30 TGCCAGGT-----CCAGGGAAAAAAGAGTGTGTTCAATTTTCATGTTTTCAGCGAAGG 293
s31 CTCTGGTTTCAGGGAAAAACAGAGCGGGCTGACATTAATCGATTACATCTTTTTCAACCAAGC 298
s32 CAACAGAT-----TCAGGGAAA-CCAGAGTGTGTTTGTATGACATGTTTTCAGCGAAGG 349
s33 TGCCAGGT-----CCAGGGAAAAAAGAGTGTGTTCAATTTTCATGTTTTCAACGAAGG 293
s34 CTCTGGTTTCAGGGAAAAACAGAGCGGGCTGACATTAATCGATTACATCTTTTTCAACGAAGC 298
s35 CAACAGAT-----TCAGGGAAA-CCAGAGTGTGTTTGTATGTCATGTTTTCAACGAAGG 349

* * *

s1 TTGAATTAATCCTCCTGACATTGCTGTTGGTTTTCAATTGCAGTAGATGTTTAGGTTTCCA 353
s2 CTGAATTAATCCTACTAACATTGCTGTTGGTTTTCAATTGCAGTAGATATTTAGGTTTCTT 358
s3 CTGAATTAATCCTACTGTCATTGCTGTTGGTTTTCAATTGCAGTAGATGTTTAGGTTTCCA 409
s4 TTGAATTAATCCTACTGACATTGCTGTTGGTTTTCAATTGCAGTAGATGTTTAGGTTTCCA 353
s5 CTGAATTAATCCTACTAACATTGCTGTTGGTTTTCAATTGCAGTAGATATTTAGGTTTCCA 358
s6 CTGAATTAATCCTACTGTCATTGCTGTTGGTTTTCAATTGCAGTAGATGTTTAGGTTTCCA 409
s7 TTGAATTAATCCTACTGCCATTGCTGTTGGTTTTCAATTGCAGTAGATGTTTAGGTTTCCA 353
s8 CTGAATTAATCCTACTAACATTGCTGTTGGTTTTCAATTGCAGTAGATATTTAGGTTTCCA 358
s9 CTGAATTAATCCTACTGTCATTGCTGTTGGTTTTCAATTGCAGTAGATGTTTAGGTTTCCA 409
s10 TTAAATTAATCCTCCTGACATTGCTGTTGGTTTTCAATTGCAGTAGATGTTTAGGTTTCCA 353
s11 TTAAATTAATCCTCCTGACATTGCTGTTGGTTTTCAATTGCAGTAGATGTTTAGGTTTCCA 353
s12 CTGAATTAATCCTACTAACATTGCTGTTGGTTTTCAATTGCAGTAGATCTTAGGTTTCCA 358
s13 CTGATTAACGCAGACTGAATTAATCCTAGTTTTACTTCGCATGGGTTTTTAGCTTTCCA 395
s14 AAAAAAAAAACCTACTCACATCACAAAGGCTGAAATAGCACTACAACATTACGTTTCCA 353
s15 TTGAAAAACAACGACGAACAACCGCCAGCGGACATCACTGCGGGAGATCATTACGGTACAA 336
s16 AAGAATTAATCCTAACAACTGCTGGTGCATCAGCAGAAAAAAGAGGCGCACCA 358
s17 ATGAATTAATCCTCCTGATGTTGGTTTTCAATTGCAGTAGATGTTTAGGTTTCCA 408
s18 TTGAATTAATCCTCCTGATATTGCTGTTGGTTTTCAATTGCAGTAGATGTTTAGGTTTCCA 353
s19 CTGAATTAATCCTACTAACATTGCTGTTGGTTTTCAATTGCAGTAGATATTTAGGTTTCCA 358
s20 CTGAATTAATCCTACTGTCATTGCTGTTGGTTTTCAATTGCAGTAGATGTTTAGGTTTCCA 409
s21 TTGAATTAATCCTCCTGATATTGCTGTTGGTTTTCAATTGCAGTAGATGTTTAGGTTTCCA 353
s22 CTGAATTAATCCTACTAACATTGCTGTTGGTTTTCAATTGCAGTAGATATTTAGGTTTCCA 358
s23 CTGAATTAATCCTACTGTCATTGCTGTTGGTTTTCAATTGCAGTAGATGTTTAGGTTTCCA 409
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s25 CTGAATTAATCCTACTGTCATTGCTGTTGGTTTTCAATTGCAGTAGATGTTTAGGTTTCCA 409
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s27 TTGAATTAATCCTACTGCCATTGCTGTTGGTTTTCAATTGCAGTAGATGTTTAGGTTTCCA 353

s28 CAAAAATACCCACAAAAACAGCGCTGGGGGTTACAGCACAAGAGATACAGAGGTCCACA 358
s29 CTGAATTACTCCTACTGTCAATTGCTGTTGGTTTTTCATTGCAGTAGATGTTTAGGTTTCCA 409
s30 TTGAATTACTCCTACTGACATTGCTGTTGGTTTTTCATTGCAGTAGATGTTTAGGTTTCCA 353
s31 CTGAATTACTCCTACTAACATTGCTGTTGGTTTTTCATTGCAGTAGATATTTAGGTTTCCA 358
s32 CTGAATTACTCCTACTGTCAATTGCTGTTGGTTTTTCATTGCAGTAGATGTTTAGGTTTCCA 409
s33 TTGAATTACTCCTACTGACATGGCTGTTGGTTTTTCATTGCAGTAGATGTTTAGGTTTCCA 353
s34 CTGAATTACTCCTACTAACATTGCTGTTGGTTTTTCATTGCAGTAGATATTTAGGTTTCCA 358
s35 CTGAATTACTCCTACTGTCAATTGCTGTTGGTTTTTCATTGCAGTAGATGTTTAGGTTTCCA 409

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s1 TTTCTTCCTCCCCTTATCATTCTAACTAACCCTACTATAGGTTGACCATACCTCAAAGGCTGT 413
s2 TTTCTTCCTCCCCTTATCATTCTAAACCTACTGTAGGTTGGACCAGACTTCAAACCTGT 418
s3 TTTCTTCCTCCCCTTATCATTCTTAACTAACCATAGGTTGACCATACCTCAAAGGCTGT 469
s4 TTTCTTCCTCCCCTTATCATTCTACTCACTTACTATAGGTTGACCATACCTCAAAGGCTGT 413
s5 TTTCTTCCTCCCCTTATCATTCTAACTAACCCTACTGTAGGTTGGACCAGACTTCAAACCTGT 418
s6 TTTCTTCCTCCCCTTATCATTCTTAACTAACCCTAGGTTGACCATACCTCAAAGGCTGT 469
s7 TTTCTTCCTCCCCTTGTCACTTAACTAACCCTACTATAGGTTGACCATACCTCAAAGGCTGT 413
s8 TTTCTTCCTCCCCTTATCATTCTAACTAACCCTACTGTAGGTTGGACCAGACTTCAAACCTGT 418
s9 TTTCTTCCTCCCCTTATCATTCTAACTAACCCTAGGTTGACCATACCTCAAAGGCTGT 469
s10 TTTCTTCCTCCCCTTATCATTCTAACTAACCCTACTATAGGTTGACCATACCTCAAAGGCTGT 413
s11 TTTCTTCCTCCCCTTGTCACTTAACTAACCCTACTATAGGTTGACCATACCTCAAAGGCTGT 413
s12 TTTCTTCCTCCCCTTATCATTCTAACTAACCCTACTGTAGGTTGGACCAGACTTCAAACCTGT 418
s13 TTTCTTCCTCCCCTTATCATTCTAACTAACCCTACTATAGGTTGACCATACCTCAAAGGCTGT 413
s14 TTTCTTCCTCCCCTTATCATTCTAACTAACCCTACTATAGGTTGACCATACCTCAAAGGCTGT 413
s15 GTTCAGCCTCCAAAAACACACAAACGAAAGATAGACCACAAACATAAAAAACAAAGG 396
s16 CTTCTCCCCCTTCACTAACTAACTAACCCTACTATAGGTTGACCATACCTCAAAGGCTGT 418
s17 TTCTCCCCCTTCACTAACTAACCCTAACCCTAACCCTAACCCTAACCCTAACCCTAACCCT 468
s18 TTTCTTCCTCCCCTTATCATTCTAACTAACCCTACTATAGGTTGACCATACCTCAAAGGCTGT 413
s19 TTTCTTCCTCCCCTTATCATTCTAACTAACCCTACTGTAGGTTGGACCAGACTTCAAACCTGT 418
s20 TTTCTTCCTCCCCTTATCATTCTAACTAACCCTACTATAGGTTGACCATACCTCAAAGGCTGT 469
s21 TTTCTTCCTCCCCTTATCATTCTAACTAACCCTACTATAGGTTGACCATACCTCAAAGGCTGT 413
s22 TTTCTTCCTCCCCTTATCATTCTAACTAACCCTACTGTAGGTTGGACCAGACTTCAAACCTGT 418
s23 TTTCTTCCTCCCCTTATCATTCTTAACTAACCCTAGGTTGACCATACCTCAAAGGCTGT 469
s24 TTTCTTCCTCCCCTTATCATTCTACTCACTTACTATAGGTTGACCATACCTCAAAGGCTGT 413
s25 TTTCTTCCTCCCCTTATCATTCTTAACTAACCCTAGGTTGACCATACCTCAAAGGCTGT 469
s26 TTTCTTCCTCCCCTTATCATTCTTAACTAACCCTAGGTTGACCATACCTCAAAGGCTGT 469
s27 TTTCTTCCTCCCCTTGTCACTTAACTAACCCTACTATAGGTTGACCATACCTCAAAGGCTGT 413
s28 TCTCCCCCTTCACTAACTAACCCTAACCCTAACCCTAACCCTAACCCTAACCCTAACCCT 418
s29 TTTCTTCCTCCCCTTATCATTCTAACTAACCCTAGGTTGACCATACCTCAAAGGCTGT 469
s30 TTTCTTCCTCCCCTTATCATTCTACTCACTTACTGTAGGTTGACCATACCTCAAAGGCTGT 413
s31 TTTCTTCCTCCCCTTATCATTCTAACTAACCCTACTGTAGGTTGGACCAGACTTCAAACCTGT 418
s32 TTTCTTCCTCCCCTTATCATTCTTAACTAACCCTAGGTTGACCATACCTCAAAGGCTGT 469
s33 TTTCTTCCTCCCCTTATCATTCTAACTAACCCTACTATAGGTTGACCATACCTCAAAGGCTGT 413
s34 TTTCTTCCTCCCCTTATCATTCTAACTAACCCTACTGTAGGTTGGACCAGACTTCAAACCTGT 418
s35 TTTCTTCCTCCCCTTATCATTCTAACTAACCCTAGGTTGACCATACCTCAAAGGCTGT 469

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s1 ATGGCAACTGCATGG-----AATCTTGAGCAAGTTTATGGAAAATTATTGAGCCCACT 466
s2 ATTCTCATGGCGACTACATGGAACTTGGGCACATTTTATGGAAAATTATTGAGCACAGT 478
s3 ATGCTCATAGCATATGCAAAGAAATTTTGGTATATTTTATCATTAACATAATGTCCTTTCT 529
s4 ATGGCAACTGCATGG-----AATCTTGAGCAAGTTTATGGAAAATTATTGAGCCCACT 466
s5 ATTCTCATGGCGACTGCATGGAACTTGGGCACATTTTATGGAAAATTATTGAGCACAGT 478
s6 ACTCTCATGGCGACTGCATCGAAATTTGAGCATATTTTATGGAAAATTATTGAGCTCACT 529
s7 ATGGCAACTGCATGG-----AATCTTGAGCAAGTTTATGGAAAATTATTGAGCCCACT 466
s8 ATTCTCATGGCGACTGCATGGAACTTGGGCACATTTTATGGAAAATTATTGAGCACAGT 478
s9 ACTCTCATGGCGACTGCATCGAAATTTGAGCATATTTTATGGAAAATTATTGAGCTCACT 529
s10 ATGGCAACTGCATGG-----AATCTTGAGCAAGTTTATGGAAAATTATTGAGCCCACT 466
s11 ATGGCAACTGCATGG-----AATCTTGAGCAAGTTTATGGAAAATTATTGAGCCCACT 466
s12 ATTCTCATGGCGACTGCATGGAACTTGGGCACATTTTATGGAAAATTATTGAGCACAGT 478
s13 ACTCCAATGGCCACTGCATCGAAATTTGAGCATATTTTATGGAAAATTATTGAGCTCACT 515
s14 AGGGAACCTGCACCA-----AACCTCAAAAACTGTATGCAAAAGGAAACAGCACACA 466
s15 ATGGAAACCAAAATGC-----AAGCAAGAGCAAGCAAAATGGAAAAAAATGAGTCAACC 449
s16 ATCATCACGACGACAGCAAAAAACAGCACAACATATG--AAAAAAATTAAGCAAC 475
s17 ACACGCACACCCAAATCCAACGAAAGCAAAACATAATGGAAAAAAACGAGCGAACTCACT 528
s18 ATGGCAACTGCATGG-----AATCTTGAGCAAGTTTATGGAAAATTATTGAGCCCACT 466
s19 ATTCTCATGGCGACTGCATGGAACTTGGGCACATTTTATGGAAAATTATTGAGCACAGT 478
s20 ACTCTCATGGCGACTGCATCGAAATTTGAGCATATTTTATGGAAAATTATTGAGCTCACT 529
s21 ATGGCAACTGCATGG-----AATCTTGAGCAAGTTTATGGAAAATTATTGAGCCCACT 466

s22 ATTCATGCGGACTGCATGGAACTTGAGCACATTTTATGGAAAATTATTGAGCACAGT 478
s23 ACTCTCATGGCCACTGCATCGAATTTTGGAGCATATTTTATGGAAAATTATTGAGCTCACT 529
s24 ATGGCAACTGCATGG-----AATCTTGGAGCAAGGTTATGGAAAATTATTGAGCCCACT 466
s25 ACTCTCATGGCCACTGCATCGAATTTTGGAGCATATTTTATGGAAAATTATTGAGCTCACT 529
s26 ACTCTCATGGCCACTGCATCGAATTTTGGAGCATATTTTATGGAAAATTATTGAGCTCACT 529
s27 ATGGCAACTGCATGG-----AATCTTGGAGCAAGTTTATGGAAAATTATTGAGCCCACT 466
s28 ACTCACAGGGACACCACAGAAAAACGAGAACACATTTATAGAAAAAATAGAGAACACACT 478
s29 ACTCTCATGGCCACTGCATCGAATTTTGGAGCATATTTTATGGAAAATTATTGAGCTCACT 529
s30 ATGGCAACTGTAATGG-----AATCTTGGAGCAAGTTTATGGAAAATTATTGAGCCCACT 466
s31 ATTCATGCGGACTGCATGGAACTTGAGCACATTTTATGGAAAATTATTGAGCACAGT 478
s32 ACTCTCATGGCCACTGCATCGAATTTTGGAGCATATTTTATGGAAAATTATTGAGCTCACT 529
s33 ATGGCAACTGCATGG-----AATCTTGGAGCAAGTTTATGGAAAATTATTGAGCCCACT 466
s34 ATTCATGCGGACTGCATGGAACTTGAGCACATTTTATGGAAAATTATTGAGCACAGT 478
s35 ACTCTCATGGCCACTGCATCGAATTTTGGAGCATATTTTATGGAAAATTATTGAGCTCACT 529

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s1 CTTTTATGATCACTGTTTCGCTGTGTGTCCTGAGGGCACTAACTCAGAGTG---TCCTTT 523
s2 CTTTTATGATCCCTGTATGCTGTGTGTCCTGAGGGCACTAACTCAGAGTG---TCCTGT 535
s3 CTTTCAATGATCACTGTTTGTGTGTGTCATTTAACCCCTAACCCAGATTG---TCCTTT 586
s4 CTTTTATGATCACTGTTTCGCTGTGTGTCCTGAGGGCACTAACTCAGAGTG---TCCTTT 523
s5 CTTTTATGATCCCTGTATGCTGTGTGTCCTGAGGGCACTAACTCAGAGTG---TCCTGT 535
s6 CTTTTATGATCACAGTTTGTGTGTGTCATGAGGGCACTAACTCAGAGTG---TCCTTT 586
s7 GTTTTATGATCACTGTTCACTGTGTGTCCTGAGGGCACTAACTCAGAGTG---TCCTTT 523
s8 CTTTTATGATCACTGTATGCTGTGTGTCCTGAGGGCACTAACTCAGAGTG---TCCTGT 535
s9 CTTTTATGATCACAGTTTGTGTGTGTCATGAGGGCACTAACTCAGAGTG---TCCTTT 586
s10 CTTTTATGATCACTGTTTCGCTGTGTGTCCTGAGGGCACTAACTCAGAGTG---TCCTTT 523
s11 CTTTTATGATCACTGTTTCGCTGTGTGTCCTGAGGGCACTAACTCAGAGTG---TCCTTT 523
s12 CTTTTATGATCACTGTATGCTGTGTGTCCTGAGGGCACTAACTCAGAGTG---TCCTGT 535
s13 CTTTTATGATCACAGTTTGTGTGTGTCATGAGGGCACTAACTCAGAGTG---TCCTTT 572
s14 AACTTACCACAATGACCCAAAAGTATCCAGAACACACTAACCAAGAGCA---CCCTTC 523
s15 CACTCCATGAACAATCACCCCTCGCTGTCCTGAGGGCACTAACTCAGAGTG---TCCTTT 506
s16 AGTCTCATATCACCCAGGATGCGGGGCTCAGGACACCAACAAAGAAGAGCCTCCTAC 535
s17 CCATGAACAACAACAGCTGGCTGTGTCAGGAAGGAAACGACGAACACAAAATA---CCCTAT 585
s18 CTTTTATGATCACTGTTTCGCTGTGTGTCCTGAGGGCACTAACTCAGAGTG---TCCTTT 523
s19 CTTTTATGATCCCTGTATGCTGTGTGTCCTGAGGGCACTAACTCAGAGTG---TCCTGT 535
s20 CTTTTATGATCACAGTTTGTGTGTGTCATGAGGGCACTAACTCAGAGTG---TCCTTT 586
s21 CTTTTATGATCACTGTTTCGCTGTGTGTCCTGAGGGCACTAACTCAGAGTG---TCCTTT 523
s22 CTTTTATGATCCCTGTATGCTGTGTGTCCTGAGGGCACTAACTCAGAGTG---TCCTGT 535
s23 CTTTTATGATCACAGTTTGTGTGTGTCATGAGGGCACTAACTCAGAGTG---TCCTTT 586
s24 CTTTTATGATCACTGTTTCGCTGTGTGTCCTGAGGGCACTAACTCAGAGTG---TCCTTT 523
s25 CTTTTATGATCACAGTTTGTGTGTGTCATGAGGGCACTAACTCAGAGTG---TCCTTT 586
s26 CTTTTATGATCACAGTTTGTGTGTGTCATGAGGGCACTAACTCAGAGTG---TCCTTT 586
s27 GTTTTATGATCACTGTTCACTGTGTGTCCTGAGGGCACTAACTCAGAGTG---TCCTTT 523
s28 CTTCAACAAGAACACTATACGCTGTGTCCTGAGGGCACTAACTCAGAGTG---TCCTGA 535
s29 CTTTTATGATCACAGTTTGTGTGTGTCATGAGGGCACTAACTCAGAGTG---TCCTTT 586
s30 CTTTTATGATCACTGTTTCGCTGTGTGTCCTGAGGGCACTAACTCAGAGTG---TCCTTT 523
s31 CTTTTATGATCCCTGTATGCTGTGTGTCCTGAGGGCACTAACTCAGAGTG---TCCTGT 535
s32 CTTTTATGATCACAGTTTGTGTGTGTCATGAGGGCACTAACTCAGAGTG---TCCTTT 586
s33 CTTTTATGATCACTGTTTCGCTGTGTGTCCTGAGGGCACTAACTCAGAGTG---TCCTTT 523
s34 CTTTTATGATCACTGTATGCTGTGTGTCCTGAGGGCACTAACTCAGAGTG---TCCTGT 535
s35 CTTTTATGATCACAGTTTGTGTGTGTCATGAGGGCACTAACTCAGAGTG---TCCTTT 586

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s1 GACCC-----TTATCAGTGTGTACCCGGCCAACTCGCTGAGCTTACTTT-CTCTCTC 578
s2 TACTCC-----CTATCAGTGTGTACCTGGACAAATTCAGTGTGCTGTTCTCTCTCTGTG 591
s3 TCTCA-----CTAACTAGTGTGTACCTTCCCTATTCCTCTGTCTCTTTT-TCCTCTC 641
s4 GACCC-----TTATCAGTGTGTACCCGGCCAAATTCGCTGAGCTCACTTT-CTCTCTC 578
s5 TACTCC-----CTATCAGTGGGTACCTGGACAAATTCCTGAGCTGTTCTCTCTCTC 591
s6 GACTCC-----CTTACCAGTATGTACCTGGCCAAATTCAGTGTGCTTTT-TCCTGTG 641
s7 GACCTC-----TTACAGTGTACCCCGGACAAATCC-GAGAACAATTT-C----- 570
s8 TACTCC-----CTATCAGTGTGTACCTGGACAAATTCAGTGTGCTTTTCTCTCTCTC 591
s9 GACTCC-----CTTACCAGTATGTACCTGGCCAAATTCAGTGTGCTTTT-TCCTGTG 641
s10 GACCC-----TTATCAGTGTGTACCCGGCCAAATTCGCTGAGCTCACTTT-CTCTCTC 578
s11 GACCC-----TTATCAGTGTGTACCCGGCCAAATTCGCTGAGCTCACTTT-CTCTCTC 578
s12 TACTCC-----CTATCAGTGTGTACCTGGACAAATTCAGTGTGCTTTTCTCTCTCTC 591
s13 GACTCC-----CTTACCAGTATGTACCTGGCCAAATTCAGTGTGCTTTT-TCCTGTG 627
s14 AACCC-----TGACCAAGAGCACAAACACAAATGCAGTGTGAGCCACTC-ATCAGCGC 578
s15 CACCCACCAATCAATCAGTGTGTACCCACCAACCAACTCAGGAACTCACTCC-CCCTCTC 565

s16 TACCCC----ATCAGCAGGGCACCAACCACAACAAACCAAGCACCTCCTCCCCCTCTCTCTC 591
s17 GACACC----CGGACAAGTAACTAACCCACCCAAATCCACGACGCCACCTCC-GCCCCCCC 640
s18 GACCCC----TTCATCAGTGTGTACCCGGCCAACTCGCTGAGCTTACTTT-CTCCTCTC 578
s19 TACTCC----CTCATCAGTGTGTACCTGGCAAATTCACTGAGCTCGTTCTCTCTGTG 591
s20 TACTCC----CTTACCAGTATGTACCTGGCCAAATTCACTAGGTCACTTTC-TCTCTGTG 641
s21 GACCCC----TTCATCAGTGTGTACCCGGCCAACTCGCTGAGCTTACTTT-CTCCTCTC 578
s22 TACTCC----CTCATCAGTGTGTACCTGGCAAATTCACTGAGCTCGTTCTCTCTGTG 591
s23 TACTCC----CTTACCAGTATGTACCTGGCCAAATTCACTAGGTCACTTTC-TCTCTGTG 641
s24 GACCCC----TTCATCAGTGTGTACCCGGCCAAATTCGCTGAGCTCACTTT-CTCCTCTC 578
s25 GACTCC----CTTACCAGTATGTACCTGGCCAAATTCACTAGGTCACTTTC-TCTCTGTG 641
s26 GACTCC----CTTACCAGTATGTACCTGGCCAAATTCACTAGGTCACTTTC-TCTCTGTG 641
s27 GAACCC----TTCATCAGTGTGTACCCGGCCAAATTCGCTGAGCTCACTTT-CTCCTCTC 578
s28 CACCCC----CACAAACAGTGTACACCCGACAAAACACACAGAGCGGTTCTCTCTCTCTC 591
s29 GACTCC----CTTACCAGTATGTACCTGGCCAAATTCACTAGCTCACTTTC-TCTCTGTG 641
s30 GACCCC----TTCATCAGTGTGTACCCGGCCAAATTCGCTGAGCTCACTTT-CTCCTCTC 578
s31 TACTCC----CTCATCAGTGTGTACCTGGCAAATTCACTGAGCTCGTTCTCTCTCTCTC 591
s32 GACTCC----CTTACCAGTATGTACCTGGCCAAATTCACTAGGTCACTTTC-TCTCTGTG 641
s33 GACCCC----TTCATCAGTGTGTACCCGGCCAAATTCGCTGAGCTCACTTT-CTCCTCTC 578
s34 TACTCC----CTCATCAGTGTGTACCTGGCAAATTCACTGAGCTCGTTCTCTCTCTCTC 591
s35 TACTCC----CTTACCAGTATGTACCTGGCCAAATTCACTAGGTCACTTTC-TCTCTGTG 641

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s1 TCTCTCCCTCTCT----- 591
s2 TGTGTGTGT-----GTGTGTGTGTGTGTGTGTGTGTGTGTGTGTG 631
s3 TCTGTCTCTGTCTCTC-----TCTCTCTCTCTCT- 670
s4 TCTCTC----- 584
s5 TCTCTGTGT-----GTGTGTGTGTGTGT---GTGTGTGTGTGTG 627
s6 TCTGTCTCTGTCTCTG-----T----- 658
s7 -----CTCTCTCT- 578
s8 TCTCTCTCTTTCTCTCTCAGTGTGTGCGTGTGTCTTTGTGTGTGTGTGTGTGTGTG 651
s9 TCTGTCTCTGTCTCTG-----TCTCTGTCTCTCTC 671
s10 TCTCTCTCTCCCT----- 591
s11 TCTCTCTCTCCCT----- 591
s12 TCTCTCTCTTTCTCTCTCAGTGTGTGCGTGTGTCTGTGTGTGTGTGTGTGTGTGTG 651
s13 TCTATCTCTGTCTCTG-----TCTCTGTCTCTGTG 657
s14 GCCACCTCACAACTCACT---GAC-----CTCCCCCTGCGTGCGTG 617
s15 TCTCTCTCTGCCT----- 578
s16 TCTCTCTCTCTCT-----CTCTGTGTGTGTGTG 621
s17 CGC-----CC-----CGGCCTCCCCCTCCAATC 662
s18 TCTCTCTCTCTCT----- 591
s19 TGTGTGTGTGTCTGTGTGTGTCTGTGTGTGTG-----TGTGTG--TGTGTGTG 639
s20 TCTGTCTCTGTCTCTC-----TCTCTGTCTCTGTG 671
s21 TCTCTCTCTCTCT----- 591
s22 TGTGTGTGTGTCTGTGTGTGTGTGTGTG-----TG 625
s23 TCTGTCTCTGTCTCTC-----TCTCTGTCTCTGTG 671
s24 TCTCTC----- 584
s25 TCTGTCT-----CTG----- 651
s26 TCTGTCT-----CTG----- 651
s27 TCTCTCTCTCCCT----- 591
s28 TCTCTCTCTCTCTCTCAGTGTGTGCGTGTGT--CTGTGTGTGTGTGTGTGTGT---GTG 645
s29 TCTGTCTCTGTCTCTG-----TCTCTGTCTCTG-- 669
s30 TCTCT----- 583
s31 TCTGTGTGTGTGTGTGTGTGTGTGTGTG----- 622
s32 TCTGTCTCTGTCTCTG----- 657
s33 TCTCTCTCTCTCT----- 591
s34 TCTCTGTGTGTGTGTGTGTGTGTGTG-----TGTGTGTGTG 631
s35 TCTGTCTCTGTCTCTC-----TCTCTGTCTCTGTG 671

s1 -CTCTCTCCCCCTCTCTCTCTCTCTCTTTTCTTCTCTCCCCCTCCCTCTCCCTCTCTC 650
s2 TGTGTGTGTGTGTCTATCTGTCTTTCTCTTTTACTCTTTTCCATTTGGCCCTGTTCTGTG 691
s3 -----TTCTCTTTCTTTCTCTTTTACCCTGCCCTATTCATC 707
s4 -----TCTCCCTCTCCCTGTCTTTCTCTTTTACTCTTTTCTACCTGGCCCTGGTCTATC 638
s5 TGTGTGTGTGTGTCTATCTGTCTTTCTCTTTTACTCTTTTCCATTTGGCCCTGTTCTGTG 687
s6 -----TTCTCTTTCTTTTCTCTTTTCAATGCTTTCTACCTGGCCCTGTTCAATC 707
s7 -CTCTCTCCCCCTCCCCCTCTTTTCTCTTTTCAATCTTTTCTACCTGGCCCTGGTCTATC 637
s8 TGTGTGTGTGTG--GTGTCTCTTTCTCTTTTCAATTTCTTCTATTTTGGCCCATCATGTA 709
s9 TCTCTCTCTTTTCAATCTTTTCC-----TACATGTATTCTACCA-----TA 711

s10 -CTCC-----CTGTCTTTCTCTTTCAATCTTTTCTACCTGGCCCTGGTCTATC 638
s11 -CTCCCTGTCT-----TCTTTTTCTTCCCTTTTCCACCTTGCCCCGGTCCATC 637
s12 TGTGTGTGTGTGTGTGTCTGTCTTTCTCTTTCAATCTTTTCCATTTGGCCCTGTTCTGTC 711
s13 TCTCTCTCTGTCTTTCTCT-----TTCTTTTTTCTACCTGGCCCTGTTCTATC 708
s14 TCTACCTGGCCCTGGGTGAG-CCCAACCCAAACACATAATGCACCTGGCCCTGTTCTATC 676
s15 -CTCCCTG-----TCT-TCCCTTCAATCCTTTTCCAACCGGCCCCCAATCGATC 624
s16 TGTGTGTGTGTGTCTATCTGTCTTTCTCTTTCAATCTTTTCCATTTGGCCCTGTTCTGTC 681
s17 GCTGTCTACCTCGCCCTCTGCCATCCCAACACAAAGGCAACAAACTGGCCCTGTACCACA 722
s18 -CTCTCCCTCCCTCTCCCTCTCTCTCTCTTTTCAATCTTTTCCATCTGGCCCCGCTCTATC 650
s19 TGTGTGTGTGTGTCTCTCTCTCTCTTTTCTTTTCAATTTTTCCATTTTGGGCCCTTCTCTC 699
s20 TCT----CTCTCTCTCTGTCTTTCTTTTCAATGTTTTTACCTGGCCCTGGTCTATC 727
s21 -CTCTCCCTCCCTCTCCCTGTCTTTCTTTTCAATCTTTTCTACCTGGCCCTGGTCTATC 650
s22 TGTGTGTGTGTGTGTGTCTGTCTTTCTCTCTCTCTCTTTTCTTTTGTCTTTTCCCCTT 685
s23 TCT----CTCTCTCTCTGTCTTTCTTTTCAATGTTTTTACCTGGCCCTGTTCTATC 727
s24 -----TCTCCCTCTCCCTGTCTTTCTTTTCAATCTTTTCTACCTGGCCCTGGTCTATC 638
s25 -----TCTCTGTCTGTCTTTCTTTTCAATGTTTTTCTACCTGGCCCTGTTCTGTC 701
s26 -----TCTCTGTCTGTCTTTCTTTTCAATGTTTTTCTACCTGGCCCTGTTCTGTC 701
s27 -CTCCCT-----GTCTTCTTTTCAATCTTTTCTACCTGGCCCTGGTCTATC 637
s28 TGTGTGTGTGTGTCTATCTCTCTCTCTCTCTCACACTCTTCCACATGGCCCCCTGCTCTC 705
s29 -----TCTCTCTCTCTGTCTTTCTTTTCAATGTTTTTCTACCTGGCCCTGTTCTATC 723
s30 -----CTCTCCCTCTCCCTGTCTTTCTTTTCAATCTTTTCTACCTGGCCCTGGTCTATC 638
s31 -----GTGTGTGTGTGTGTGTCTTTCTTTTCTCTCTTTTCTTGGCCCTTTTCCATT 677
s32 -----TCTCTGTCTGTCTTTCTTTTCAATGTTTTTCTACCTGGCCCTGTTCTATC 707
s33 -----CTCTCCCTCTCCCTGTCTTTCTTTTCAATCTTCTACCTGGCCCTGGTCTATC 646
s34 TGTGTGTGTGTCTATCTGTCTTTCTTTTCAATCTTTTCTACCTGGCCCTTTTCTGTA 691
s35 TCTCTCTCTCTCTCTCTGTCTTTCTTTTCAATGTTTTTCTACCTGGCCCTGTTCTATC 731

s1 TCAATATTAATTA-----ACTACCTCTTGATTA-TATCTATATTTATGCTA-TTTTT 700
s2 CCAACATGAAGGCAATAATTTGTTACCTCATTAAATG-GATCTATCCTTTTGTATTTTAA 750
s3 CTAACAGAAACCTTCAATATCTCAACAAAGGAAT-GATCTGTTTCTTTTTTA-PTAGA 765
s4 CCAACATAAAGGCAATAATTCATTACCTCATTAAATG-GATCTGTCCTTTTTCTT-TTTAA 696
s5 CCAACATGAAGGCAATAATTTGTTACCTCATTAAATG-GATCTATCCTTTTGTATTTTAA 746
s6 CCAACATAAAGGCAATAATTTGTTAACTCATTCTTG-TATTTGTCCTTTTTCTTTTCAA 766
s7 CCAACATAAAGGCAATAATTCATTACCTCATTAAATG-GATCTGTCCTTTTTCTT-TTTAA 695
s8 CCCAAAAAAGGAAAAAAATCTAACCCACAAATAA-CACATATAACTTTTT-TTTTTTA 767
s9 CCAACATAAATCCAATAATTAATTAATAA-----TTTGTCAATTTATTATCTAA 762
s10 CCAACATAAAGGCAATAATTCATTACCTCATTAAATG-GATCTGTCAATTTTATC-CTTTA 696
s11 CCAACATAAAGGCAATAATTCATTACCTCATTAAATG-GATTTTTTCTTTTTCTT-TTTAA 695
s12 CCAACATGAAGGCAATAATTTGTTACCTCATTAAATG-GATCTATCCTTTTACTTTTTTAA 770
s13 CCAACATAAAGGCAATAATTTGTTACCTCATTAAATG-GATCTGTCCTTTTTCTTTTCTAA 767
s14 CAAACAGAAACCGCAACAAACCCATAAAACATAAATG-GAGCTGTCCGGTTTTCTGATCAAA 735
s15 CCAACCAAAGGAAAGAAATCCATCACCTCACTAAATG-AAACAGTCCCTTATCTT-AGCAA 682
s16 CCAACATGAAGGCAATAATTTGTTACCTCATTAAATG-GATCTATCCTTTTGTATTTTAA 740
s17 CCAACAGAAAGCAATAATTCCTTACCTAACCAATG-CATCAGGCCACTTCAGAAACAAA 781
s18 CCAACATAAAGGCAATAATTCATTACCTCATTAAATG-GATCTGTCCTTTTTCTT-TTTAA 708
s19 CCCACATGAAACAATAATTTTTTATCTCATTATAA-GATCTATTTCTTTAGTTTTTAA 758
s20 CCAACATAAAGGCAATAATTTGTTACCTCATTAAATG-GATCTGTCCTTTTTCTTTTCAA 786
s21 CCAACATAAAGGCAATAATTCATTACCTCATTAAATG-GATCTGTCCTTTTTCTT-TTTAA 708
s22 TCACCATAAAGGCAAGAAATTAATTAACCTCATTAAATG-TATTTATATTTTTATTTTTTAT 744
s23 CCAACATAAAGGCAATAATTTGTTACCTCATTAAATG-GATCTGTCCTTTTTCTTTTCAA 786
s24 CCAACATAAAGGCAATAATTCATTACCTCATTAAATG-GATCTGTCCTTTTTCTT-TTTAA 696
s25 CCAACATAAAGGCAATAATTTGTTACCTCATTAAATG-GATCTGTCCTTTTTCTTTTCAA 760
s26 CCAACATAAAGGCAATAATTTGTTACCTCATTAAATG-GATCTGTCCTTTTTCTTTTCAA 760
s27 CCAACATAAAGGCAATAATTCATTACCTCATTAAATG-GATCTGTCCTTTTTCTT-TTTAA 695
s28 CCAAAACAAAAAATAAATTTGTTGACACCACAAAAAGATATACCTTACACTTTTTAA 765
s29 CCAACATAAAGGCAATAATTTGTTACCTCATTAAATG-GATCTGTCCTTTTTCTTTTCTAA 782
s30 CCAACATAAAGGCAATAATTCCTTACCTCATTAAATG-GATCTGTCCTTTTTCTT-TTTAA 696
s31 CCAACACAAAAATCAATTCATAAATGCATTAAATA-TATTTATACTTTTATTTTTTAT 736
s32 CCAACATAAAGGCAATAATTTGTTACCTCATTAAATG-GATCTGTCCTTTTTCTTTTCAA 766
s33 CCAACATAAAGGCAATAATTCATTACCTCATTAAATG-GATCTGTCCTTTTTCTT-TTTAA 704
s34 CCAACATGAAGGCAATTTATTCGTTAACTCATTAAATC-TATCTATCCTTTTTTCTTACTCAA 750
s35 CAAACATAAAGGCAATAATTTGTTACCTCATTAAATG-GATCTGTCCTTTTTCTTTTCAA 790

* *
s1 TTTTTTCTTAAATGTTAGCAATGTACTCTTGGTTTTATATGTTGGGTTTTTTGTTTTCCCTG 760
s2 CCACTTCCCTATGCTACCCATGAAACCTAGTTGGGGCTCTGTTGTGTCTGATTTCCCTG 810
s3 ACTCTCCCTTATCTTTGCAATCTAATCTAGACGGGGCGGTGTGGATTTTTGATCTGGCCTG 825

s4 ACAGTTCCTTATGTTAGCCATGAAATCTAGCTGGGGCTGTGTGGTTTCTGATTCCCCCTG 756
s5 CCACCTCCCTATGCTACCCATGAAACCTAGTTGGGGCTCTGTTGTGTCTGATTTCCCCTG 806
s6 CTC-TTCCTGACGTTAGCCTTGAACCTGTAGCTGGGGCTATGTGGTTTCTCTTTCCCCTTTG 825
s7 ACAGTTCCTTATGTTAGCCATGAAATCTAGCTGGGGCTGTGTGGTTTCTGATTTCCCCTG 755
s8 ACACCTCCCTTATATACCCACAAAACAAATTGGGGCCCTCTGTTGTCTATTTTCCCCC 827
s9 CTATCTAATTACTTTACTAACCAAAATCATGATGTCACTCTGGGAATCTAGAGTCCCTCTG 822
s10 AAACCTAGCTATGGTAGACACGAAAAATAAACCCAAAGTTTATTCTTTAATTATCCCTA 756
s11 ACAAGTCCTTAAATGTAACCAAGAAATCTAGGTGGGGCTTTTGGGTTTCCGATTCCCCTG 755
s12 CCACCTCCCTTATGCTACCCATGAAACCTAGTTGGGGCTCTGTTGTGTCTGATTTCCCCTG 830
s13 CCACCTCCCTTATGTTAGCCATGAAATCTAGCTGGGGCTGTGTGATTTCTGATTTCCCCTG 827
s14 CCCGGC-CTAACCTTAACCATGAAACACAGCTCCAGCCGACGGGACGAGA----- 785
s15 ACAAAATCCAGATGGGACCCAGGAAATCCAGATGCCCCCGGGCGGATTCTGA----- 733
s16 CCACCTCCCTATGCTACCCATGAAACCTAGTTGGGGCTCTGTTGTGTCTGATTTCCCCTG 800
s17 CTCGGC-CTCACGGGAGCCAGAAAAATCCAGC----- 811
s18 ACAGTTCCTTATTTTAGTCATGAAATCTAGCTGGGGCTGTGTGTTTTCTGATTCCCTCCTG 768
s19 CCACCTCTCCCCTGCGATCCATGTAAACTCGTTTTGGCTCTGTTTTGTCTCTGTTTTCTC 818
s20 CTCTTCCCTT-ACGTTAGCCATGAAATCTAGCTGGGGCTGTGTGGTTTCTGATTTCCCCTG 845
s21 ACAGTTCCTTATGTTAGCCATGAAATCTAGCTGGGGCTGTGTGGTTTCTGATTTCCCCTG 768
s22 CCATTTCCCTATCTTACCCATCAAACTAGTTCGGGTGCTGTTGTTTTTGTGTTCCCTTG 804
s23 CTCTTCCCTT-ACGTTAGCCATGAAATCTAGCTGGGGCTGTGTGGTTTCTGATTTCCCCTG 845
s24 ACAGTTCCTTATGTTAGCCATGAAATCTAGCTGGGGCTGTGTGGTTTCTGATTTCCCCTG 756
s25 CTCTTCCCTT-ACGTTAGCCATGAAATCTAGCTGGGGCTGTGTGGTTTCTGATTTCCCCTG 819
s26 CTCTTCCCTT-ACGTTAGCCATGAAATCTAGCTGGGGCTGTGTGGTTTCTGATTTCCCCTG 819
s27 ACAGTTCCTTATGTTAGCCACGAAATCTAGCTGGGGCTGTGTGGTTTCTGATTTCCCCTG 755
s28 ACACCTCCCTTATGCTACCCATGAAACCTAGTTGGGGCTCTGTTGTGTCTGATTTCCCCTG 825
s29 CCACCTCCCTATGTTAGCCATGAAATCTAGCTGGGGCTGTGTGATTTCTGATTTCCCCTG 842
s30 ACTGTTCCCTTATGTTAGCCATGAAATCTAGCTGGGGCTGTGTGGTTTCTGATTTCCCCTG 756
s31 CCATTTCCCTTATTTTACCCTGAAATCCGGGTTGTGGTGTGTGTGATTTTCGTGTGCCCTTT 796
s32 CTCTTCCCTT-ACGTTAGCCATGAAATCTAGCTGGGGCTGTGTGGTTTCTGATTTCCCCTG 825
s33 ACAGTTCCTTATGTTAGCCATGAAATCTAGCTGGGGCTGTGTGGTTTCTGATTTCCCCTG 764
s34 CCCCTCCCCAACCTACCAATGAAAGCTGGCTCTGGCTTGTGTGTGTTTGGCTTCCCCTT 810
s35 CTCTTCCCTTAAAGTTAGCCATGAAATCTAGCTGGGGCTGTGCGGTTTCTGATTTCCCCTG 850

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s1 ACATCTTCTTTTGTTTTTCTTGTTTTTCCATTCCCCGGGGTAGT-TGCTGATTGAGCCT 819
s2 GCTTATTCTTTACTTTTTCTCCTTTTTCCAGGCTCAGCAGGGAGC----- 855
s3 GTGTTTTCTTTTCTTCTCCACTATTTCTCGGCTCTGAACCGCGC----- 870
s4 ACTTATTCTTTACTTTTTCTCCTTTTTCCAGGCTCAGCAGGGAGC-TGCTGGATGAGAA- 814
s5 GCTTATTCTTTACTTTTTCTCCTTTTTCCAGGCTCAGCAGGGAGC----- 851
s6 CCTTATTCTTTACTTTTTCCACATTTCCAGGCTCAGCAAGGAGC----- 870
s7 GCTTATTCTTTACTTTTTCTCCTTTTTCCAGGCTCAGCAGGGAGC-TGCTGGCTGAGAA- 813
s8 GCCTATTATTTTATTTTTTCTCCTTTTTCAAGACCCACAGGGGGG----- 872
s9 TCCTATTCTGATTATTTCTTCACTTTTCCCAAGTTTGAAGCCAAAC----- 867
s10 CCTTATTCTTCTTCAAACACTCCTCAAGGAAAAAAGAAAGC-TGCCTGGAGAGAAA 815
s11 GCTTTTTTTTTTCTTTTTCCACCTTTCCAGGCTCAGAAAGGAAAGCGCGGGCGGAGAAA 815
s12 GCTTATTCTTTACTTTTTCTCCTTTTTCCAGGCTCAGCAGGGAGC----- 875
s13 GCTTATTCTTTACTTTTTCCACTTTTTCCAGGCTCAGCAGGGAGC----- 872
s14 ----- 785
s15 -----ACCCCCCGACTATTCCAGACTCAGCACGAAGC-TGCCAGACGAAAAA 781
s16 GCTTATTCTTTACTTTTTCTCCTTTTTCCAGGCTCAGCAGGGAGC----- 845
s17 GCGGCCCTCTACTCTCGGCACATTTTACAGGCTCAAAAGCATCCAGACGCAACAGGAAG 871
s18 GCTTATTCTTTATTTTTCTCCTACTTTCCAGGCTCAGCAGGGAGC-TACTGGATGAGAA- 826
s19 TCTTTTTTTTTTTCTTTCCCCCCTTCCCGGGGACAGGGGGG----- 863
s20 GCTTATTCTTTACTTTTTCCACTTTTTCCAGGCTCAGCAGGGAGC----- 890
s21 GCTTATTCTTTACTTTTTCTCCTTTTTCCAGGCTCAGCAGGGAGC-TGCTGGATGAGAA- 826
s22 TCTCATTTTTTTCTTTTTTTCTTTTTCCAGTCTCACCCGGGAGG----- 849
s23 GCTTATTCTTTACTTTTTCCACTTTTTCCAGGCTCAGCAGGGAGC----- 890
s24 ACTTATTCTTTACTTTTTCTCCTTTTTCCAGGCTCAGCAGGGAGC-TGCTGGATGAGAA- 814
s25 GCTTATTCTTTACTTTTTCCACTTTTTCCAGGCTCAGCAGGGAGC----- 864
s26 GCTTATTCTTTACTTTTTCCACTTTTTCCAGGCTCAGCAGGGAGC----- 864
s27 GCTTATTCTTTACTTTTTCTCCTTTTTCCAGGCTCAGCAGGGAGC-TGCTGGCTGAGAA- 813
s28 GCTTATTCTTTACTTTTTCTCCTTTTTCCAGGCTCAGCAGGGAGC----- 870
s29 GCTTATTCTTTACTTTTTCCACTTTTTCCAGGCTCAGCAGGGAGC----- 886
s30 GCTTATTCTTTACTTTTTCTCCTTTTTCCAGGCTCAGCAGGGAGC-TGCTGGATGAGAA- 814
s31 TCTTTTTTTTTTCTTTTTCTTTTTCCAGGCTCGCCCGGGG----- 841
s32 GCTTATTCTTTACTTTTTCCACTTTTTCCAGGCTCAGCAGGGAGC----- 870
s33 GCTTATTCTTTACTTTTTCTCCTTTTTCCAGGCTCAGCAGGGAGC-TGCTGGATGAGAA- 822
s34 GCTTTTTCTTTACTTCTTCTCCTTTGCCAGGCTAGGGAGGGAGC----- 855

s35 GCTTATTCTTTACTTTCTCCCACTTTTCCAGGCTCAGCAGGGAGC----- 895

s1 GAGTTTGAAGGCTCGA-AAGACTGCTTGTGTATGAGTAAAAGGATTCTGTCTGGCTAGAA 878

s2 -----TGCTGGAGGTAGTAGAGCCTGAAGTCTTGCAGGAC 890

s3 -----TGCTAGATGAAAAAGGGAGTGAAGCCTTGCGAAAC 905

s4 -----AGAGCCTGAAGTCTTGCAGGAC 836

s5 -----TGCTGGAGGTAGTAGAGCCTGAAGTCTTGCAGGAC 886

s6 -----AGCGCATGAGAAAGGGCATGAAGTCTTGCAGGAC 905

s7 -----AGAGCCTGAAGTCTTGCAGGAC 835

s8 -----AGCTGGAGGAAGTAGAAGCCCAAGAACCAGGAA 907

s9 -----TACAGGCTCAAAGCAGACTGAAGGCATGAAGAAA 902

s10 CAGTCTATAGTTTCCACCGACTACTTC----- 843

s11 -----GGCCCGAAGGCTCTGGCAGGA 835

s12 -----TGCTGGAGGTAGTAGAGCCTGAAGTCTTGCAGGAC 910

s13 -----TGCTGGCTGAGAAAGAGCCTGAAGTCTTGCAGGAC 907

s14 ----- 785

s15 G-----AGACCGAAGGCATGAAAAAC 802

s16 -----TGCTGGAGGTAGTAGAGCCTGAAGTCTTGCAGGAC 880

s17 -----AGCCTGAAGGAGAAAAGGACTCAAGGCATACAGGAC 907

s18 -----AGAGCCTGAAGTCTTGCAGGAC 848

s19 -----GGCGGGGGGTAGAAGAGCCTGAAGTCTTGTACGGC 898

s20 -----TGCTGGATGAGAAAGGGCCTGAAGTCTTGCAGGAC 925

s21 -----AGAGCCTGAAGTCTTGCAGGAC 848

s22 -----GGGTGGAGGGGGAGAGCCTGAGGGCTTGAAGGCC 884

s23 -----TGCTGGATGAGAAAGGGCCTGAAGTCTTGCAGGAC 925

s24 -----AGAGCCTGAAGTCTTGCAGGAC 836

s25 -----TGCTGGATGAGAAAGGGCCTGAAGTCTTGCAGGAC 899

s26 -----TGCTGGATGAGAAAGGGCCTGAAGTCTTGCAGGAC 899

s27 -----AGAGCCTGAAGTCTTGCAGGAC 835

s28 -----TGCTGGAGGTAGTAGAGCCTGAAGTCTTGCAGGAC 905

s29 -----TGCTGGCTGAGAAAGAGCCTGAAGTCTTGCAGGAC 921

s30 -----AGATCCTGAAGTCTTGCAGGAC 836

s31 -----AGGTGGTGAAGCAGAGCTTGAAGGGCGTCAAGGAG 876

s32 -----TGCTGGATGAGAAAGGGCCTGAAGTCTTGCAGGAC 905

s33 -----AGAGCCTGAAGTCTTGCAGGAC 844

s34 -----TGGTGGAGGAGGGAGAGCATGAAGGCTTGACGCAC 890

s35 -----TGCTGGATGAGAAAGGGCCTGAAGTCTTGCAGGAC 930

s1 TGAAGTACAGACTTTGGCCAAACCCTTAA-----CAGTATTTTTTACTGTTTGACA 930

s2 TCACTGGATAGATGTTATTCAACTCCTTCC-----AGTTGTCTTGAACAGCCTGACT 942

s3 GGACTGAAGAGATGTGATTACACCCGTTA-----GATTGTATTGAACCTCCCTCAGT 957

s4 TCACTGGATAGATGTTATTTCGACTCCTTCA-----GGTTATCTTGAACAGCCTGACT 888

s5 TCACTGGATAGATGTTATTCAACTCCTTCC-----AGTTGTCTTGAACAGCCTGACT 938

s6 TCACTGGATAGATGTTATTCACTCCTTCA-----CGTTGTCTTGAACAGCCTGACT 957

s7 TCACTGGATAGATGTTATTTCGACTCCTTCA-----GGTTATCTTGAACAGCCTGACT 887

s8 CACACAGAAAAAGATATTAACAACCTTCC-----AACTGTCTCAAAAACCCCAAC 959

s9 TCCAGGAATCAATGGAAACACACTACTTAAATCTTCTCGAAATCATCGACCCACTCAA 962

s10 -----ATTAATCTTCCCAATTACATAT-----GCAACCCTTGA----- 877

s11 TCAATGGAATAATGGTAATTCAAATCCTTCA-----AGGTATTTTTGACCGCCCTAAT 887

s12 TCACTGGATAGATGTTATTCAACTCCTTCC-----AGTTGTCTTGAACAGCCTGACT 962

s13 TCACTGGATAGATGGTATTTCGACTCCTTCA-----GTTTATCTTGGACTGACTGACC 959

s14 -CACCCCATAGATGATACTCAACTCCTTCA-----CACTGTCCCAAACTCACCAAAG 836

s15 ACACTGAAGACATGCAAGACGAACCCGGCA-----GATGATATTCAACTCCCTCACC 854

s16 TCACTGGATAGATGTTATTCAACTCCTTCC-----AGTTGTCTTGAACAGCCTGACT 932

s17 ACACGACACAGACAATATACAACGAACTAA-----CGGACTCATGAAAGCACTAAAG 959

s18 TCACTGGATAGATGTTATTTCGACTCCTTCA-----TGATATCTTGAACAGCCTGACT 900

s19 TCACTGTATATATGTTATTTACAACCCCTCC-----CGATTTCTTCAACAGCCCCACT 950

s20 TCACTGGATAGAAAGTTATTCAACTCCTTCA-----GGTTGTCTTGAACAGCCTGACT 977

s21 TCACTGGATAGATGTTATTTCGACTCCTTCA-----GGTTATCTTGAACAGCCTGACT 900

s22 TCACTGTCTAGATGTTATTTCTACTCCTTCT-----CTTTTCTTGTTCACCCCTGACT 936

s23 TCACTGGATAGAAAGTTATTCAACTCCTTCA-----GGTTGTCTTGAACAGCCTGACT 977

s24 TCACTGGATAGATGTTATTTCGACTCCTTCA-----GGTTATCTTGAACAGCCTGACT 888

s25 TCACTGGATAGATGTTATTCAACTCCTTCA-----GGTTGTCTTGAACAGCCTGACT 951

s26 TCACTGGATAGATGTTATTCAACTCCTTCA-----GGTTGTCTTGAACAGCCTGACT 951

s27 TCACTGGATAGATGTTATTTCGACTCCTTCA-----GGTTATCTTGAACAGCCTGACT 887

s28 TCACTGGATAGATGTTATTCAACTCCTTCC-----AGTTGTCTTGAACAGCCTGACT 957

s29	TCACTGGATAGATGGTATTTCGACTCCTTCA-----GTTTATCTTGGACTGACTGACC	973
s30	TCACTGGATAGATGTTATTTCGACTCCTTCA-----GGTTATCTTGAAGTGCCTGACT	888
s31	TAAAGGTATTATTGTACTTCTCCCTCTTCT-----CTTGTCTTCAACTCCCAGACC	928
s32	TCACTGGATAGATGTTATTTCGACTCCTTCA-----GGTTGCTTGAAGTGAAGTACTGACT	957
s33	TCACTGGATAGATGTTATTTCGACTCCTTCA-----GGTTATCTTGAAGTGCCTGACT	896
s34	TCAATAGATAGTTGTTATCCACCTCCTTCT-----AGTTGGCAGAACAGCCTCCCT	942
s35	TCACTAGATAGATGTTATCCAACTCCTTCA-----GGTTGCTTGAAGTGAAGTACTGACT	982
s1	GATGAGAGCCCTACACCAGCGCTGGGTACGCCTGGAGGAACC---GTAAGTGTCTTTG	987
s2	CCTGCCAGCCCTATGGAAGTTCCTTTTATGCATTGGAGGAAAA---ACATGTTGGCTTTT	999
s3	CAGGCCTGACTACAGAAGTGTCTCAACGCATTAGAGGAACA---TCGTGTTGGCTTGG	1014
s4	TAGGCCAGCCCTACAGCAGTGTCTTTACTCATTGGAGGAACA---GTACCTTGGCTTGG	945
s5	CCTGCCAGCCCTATGGAAGTTCCTTTTATGCATTGGAGGAAAA---ACATGTTGGCTTTT	995
s6	CATGCCAGCCCTACAGAGGTGCCGTTTATGTATTGGAGCAACA---GCGTGTTGGCTTGG	1014
s7	TAGGCCAGCCCTACAGAAGTGTCTTTACTCATTGGAGGAACA---GTACCTTGGCTTGG	944
s8	ACTCCCAACCCCAAAAAGATCCTTTTTTAAATAGAGGAAAAAACAATGGCCCTTTT	1019
s9	CCTACCAGCCCTACACAAGAACTATTTGAAGTATCAGAGAATCA---GCTTGGCAGCTGAA	1019
s10	--AGAAAACCTACAGAGAAACAGAAAAAGAAATGAGATCAACA---GCGTGTTGACATGC	932
s11	TAGGCCAGCCCTACAAAAGGGTGTAAACCAATTGGGGGAAC---GGTACTTGGCTTGG	944
s12	CCTGCCAGCCCTACAGAAGTTCCTTTTATGCATTGGAGGAAAA---ACATGTTGGCTTTT	1019
s13	CATGCCAGCCCTACAGAAGTGCCTTTTACGTATTGGAGCAACA---GCGTGTTGGCTTGG	1016
s14	AACGCCAGCAGCAAAAAGGCCCGAAGACATACAGGACCAACA---GCATAGAGGCTAGG	893
s15	TAGCCAGAACTACAGCACTGAGGCCAACCAACAGAGAACA---GTACACTACTGGA	911
s16	CCTGCCAGCCCTATGGAAGTTCCTTTTATGCATTGGAGGAAAA---ACATGTTGGCTTTT	989
s17	AAGGCCAGCCCAAAAAGGACCAAGAACAATCAGAGCAACA---CCGTACGGGCACAA	1016
s18	TACGCCAGCCCTACAGCAGTCTGTTTACTCATTGGAGGAACA---GTACCTTGGTTTGG	957
s19	CCCGCCAGACCTATGGAAGTTCCTTTTTGGATTTTAGGGAAA---ACATGTTGGCTTT	1007
s20	CATGCCAGCCCTACAGAAGTGCCTTTTACGTATTGGAGCAACA---GCGTGTTGGCTTGG	1034
s21	TAGGCCAGCCCTACAGCAGTGTCTTTACTCATTGGAGGAACA---GTACCTTGGCTTGG	957
s22	CCCGCCAGCCCTCTCGCTGTTCCTTTTTGCATTTAAGGATAA---ACATATTGGCTTTT	993
s23	CATGCCAGCCCTACAGAAGTGCCTTTTACGTATTGGAGCAACA---GCGTGTTGGCTTGG	1034
s24	TAGGCCAGCCCTACAGCAGTGTCTTTACTCATTGGAGGAACA---GTACCTTGGCTTGG	945
s25	CATGCCAGCCCTACAGAAGTGCCTTTTATGTATTGGAGCAACA---GCATGTTGGCTTGG	1008
s26	CATGCCAGCCCTACAGAAGTGCCTTTTATGTATTGGAGCAACA---GCATGTTGGCTTGG	1008
s27	TAGGCCAGCCCTACAGAAGTGTCTTTACTCATTGGAGGAACA---GTACCTTGGCTTGG	944
s28	CCTGCCAGCCCTACAGAAGTTCCTTTTATGCATTGGAGGAAAA---ACATGTTGGCTTTT	1014
s29	CATGCCAGCCCTACAGAAGTGCCTTTTACGTATTGGAGCAACA---GCGTGTTGGCTTGG	1030
s30	TAGGCCAGCCCTACAGCAGTGTCTTTACTCATTGGAGGAACA---GTACCTTGGCTTGG	945
s31	CCCCCTAGCCAGTCCCTTTTCTGCTTTGGCTTAGAAACATAA---AGGTATTGCTTTT	985
s32	CATGCCAGCCCTACAGAAGTGCCTTTTATGTATTGGAGCAACA---GCGTGTTGGCTTGG	1014
s33	TAGGCCAGCCCTACAGCAGTGTCTTTACTCATTGGAGGAACA---GTACCTTGGCTTGG	953
s34	CCTGCCAGACGTATGGAAGTTCATTTATGCATTGAAAGAAAT---GCATGTTTGTTTT	999
s35	CATGCCAGCCCTACAGAAGTGCCATTTACATATTGGAGCAACA---GTGTGTTGGCTTGG	1039
s1	GAGGTGACCTAGCCTGTCAGAGATTTTCGGGTAAAGTGGGAATACCTCACCCCGAATACC	1047
s2	CTCTTGACGTGGAGGTGAGTACCTTTCTATGAAGGTGATAAGGATCCACTGAGTCTTCC	1059
s3	GTGTTAACATGTAGGGTGAGTACCTTTCAATGAAGGTGAGAAGATCCACTGAGTGTAT	1074
s4	CTCTTGACGTGGACAGTGAGTACCTTTACTGTGAAGGTGATAAGCCTCCACTGGTCTTCC	1005
s5	CTCTTGACGTGGAGGTGAGTACCTTTCTATGAAGGTGATAAGGATCCACTGAGTCTTCC	1055
s6	ATGTTGACATGGATGGTGAGTACCTGTCTATGAAGGTGATAAGGATCCGCTTAGTCTTCT	1074
s7	CTCTTGACGTGGACAGTGAGTACCTTTACTATGAAGGTGATAAGCCTCCACTGGCTTCC	1004
s8	CTCAAGACGGGGAGGAGAACAATTTTATAAGGAGGTAAAGAACCAACAAGAATCATAT	1079
s9	CTGCAGACTTGGAACTAAATACAAAACCTGATAAGGTACTAAGGAGCCAAACAAGTCCCA	1079
s10	ATGTTGAATTCAAATCTATGAACCTATCTAGGAACGACTGAATCATC-----	979
s11	GTCTTACCGTGAAAATTAGTAACTTAATAAAGGTTGTAACCTTCAACTGGCCCTCC	1004
s12	CTCTTGACGTGGAGGTGAGTACCTTTCTATGAAGGTGATAAGGATCCACTGAGTCTTCC	1079
s13	CTGTTGACATGGATGGTGAGTACCTTTCTATGAAGGTGATAAGGATCCACTGAGTCTTCT	1076
s14	CAACTCACACAGATGGTCAGGAACCTGACTAACAAAAGGCAAAAACCAAAAAGAGCCTTCT	953
s15	CGAACAAACCCGACACTGAGCACCTGACGAGGAAAGTGAGAACCCTACACCCCGCCCTCC	971
s16	CTCTTGACGTGGAGGTGAGTACCTTTCTATGAAGGTGATAAGGATCCACTGAGTCTTCC	1049
s17	CAGGTGACATACATGGACAGTAAACAAGCCACCAACGGGAGAACCAGACACGAAGCATACT	1076
s18	CTCTTGACGTGGACAGTGAGTACCTTTACTGTGAAGGTGATAAGCCTCCACTGGTCTTCC	1017
s19	TTCTTGACGTGGAGGTGAGTACCTTTCTATGAAGGTGATAAGGATCCACTGAGTCTTCC	1067
s20	CTGTTGACATGGATGGTGAGTACCTTTCTATGAAGGTGATAAGGATCCACTGAGTCTTCT	1094
s21	CTCTTGACGTGGACAGTGAGTACCTTTACTGTGAAGGTGATAACCCTCCACTGGTCTTCC	1017
s22	TTCTTTTTTGTGGAGGGGGGTATCTGTCTATGAATGTGATAAGGAGACACTGAGACATAC	1053

s23 CTGTTGACATGGATGGTGAGTACCTTTCTATGAAGGTGATAAAGGATCCACTGAGTCTTCT 1094
s24 CTCTTGACGTGGACAGTGAGTACCTTACTGTGAAGGTGATAAAGCCTCCACCTGGTCTTCC 1005
s25 CTGTTGACATGGATGGTGAGTACCTTTCTATGAAGGTGATAAAGGATCCACTGAGTCTTCT 1068
s26 CTGTTGACATGGATGGTGAGTACCTTTCTATGAAGGTGATAAAGGATCCACTGAGTCTTCT 1068
s27 CTCTTGACGTGGACAGTGAGTACCTTACTATGAAGGTGATAAAGCCTCCACCTGGCCTTCC 1004
s28 CTCTTGACGTGGAGGTGAGTACGTTTCTATGAAGGTGATAAAGGATCCACTGAGTCTTCC 1074
s29 CTGTTGACATGGATGGTGAGTACCTTTCTATGAAGGTGATAAAGGATCCACTGAGTCTTCT 1090
s30 CTCTTGACGTGGACAGTGAGTACCTTACTATGAAGGTGATAAAGCCTCCACCTGGTCTTCC 1005
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s32 CTGTTGACATGGATGGTGAGTACCTTTCTATGAAGGTGATAAAGGATCCACTGAGTCTTCT 1074
s33 CTCTTGACGTGGACAGTGAGTACCTTACTATGAAGGTGATAAAGCCTCCACCTGGTCTTCC 1013
s34 CTCTGGGGGAGGTGAGTAACTATCTATGTATGAAGAGATAAAGCATCCACTGACTCATAAC 1059
s35 CTATTGACATGGAGGGTGAGTACCTTTCTATGAAGGTGATAAAGGATCCACTGAGTCTTCT 1099

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s1 CGATAGAGATGAGATTCTGTTCCAAGTGGCCCTTACTGACCGAGAGAGGTGTCAATGACG 1107
s2 ATATAAAGATCATATTCTGCTCCAAGTGGCCATTACTGAGCTGAGAGATGTCATTGCCA 1119
s3 GGGTAG-AGTCACATTCTTACGGCAAGAGGCCCTACTGAGAGCAGAGATGTCATTGCCA 1133
s4 AGATAGGGGTGATATTCTGTTCCAAGTGGCCCTTACTGACCCGAGAGACGTCATTGCCG 1065
s5 ATATAAAGATCATATTCTGCTCCAAGTGGCCATTACTGAGCTGAGAGATGTCATTGCCA 1115
s6 GGTAT-GGTCATATTCTACTGCCAGTGGCCCTTACTGAGCTGAGAGATGTCATTGACA 1133
s7 AGATAGGGGTGATATTCTGTTCCAAGTGGCCCTTACTGACCCGAGAGACGTCATTGCCA 1064
s8 ATATAAACAAATACCCATTCCAAAAGTGAATAATACAGATGAGAGAGATAACACCCACA 1139
s9 CCTTAT-CCTCAAAATAGAGTCCAATTTCCACATAAAGAACC-----CCATAATAA 1130
s10 CAATCAGTATAATAGTCCCACCTCAAATTTCCCACTGAATGAGACCAAAAATGTGATGCCA 1039
s11 AGATAGGGGTCTACTAGTGGTCCGTGCTGCCCTGACCGACGTGAGAGCCGTGAGGAGCA 1064
s12 ATATAAAGATCATATTCTGCTCCAAGTGGCCATTACTGAGCTGAGAGATGTCATTGCCG 1139
s13 GGTAG-GGTCATATTCTACTGCAAGTGGCCCTTACTGAGCTGAGAGATGTCATTGCCA 1135
s14 ACGTAG-GGGAACAACACCACGGCAACTGGCCGTAAAACAGCGAAGGGAAAGTAACTGCCA 1012
s15 AGATAGGGGTGATATTCTGTTCCAAGTGGCCCTTACTGACCCGAGAGATGTCATTGCCG 1031
s16 ATATAAAGATCATATTCTGCTCCAAGTGGCCCTTACTGAGCTGAGAGATGTCATTGCCA 1109
s17 CCCAAA-AGAAACAGCCCTAACGAAAACCGACCGTACCAAGCCGACAGACAGCACCCGACA 1135
s18 AGATAGGGGTGATATTCTCTCCAAGTGGCCCTTACTGACCCGAGAGATGTCATTGCCG 1077
s19 ATATAAAGATCATATTCTGCTCCAAGTGGCCATTACTGAGCTGAGAGATGTCATTGCCA 1127
s20 GGTAG-GGTCATATTCTACTGCAAGTGGCCCTTACTGAGCTGAGAGATGTCATTGCCA 1153
s21 AGATAGGGGTGATATTCTGTTCCAAGTGGCCCTTACTGACCCGAGAGATGTCATTGCCG 1077
s22 ATATAAAGATAATATTCTTACTCCCACCTGTCATTCTAAGTGGGGAGATGTCAGTGCCA 1113
s23 GGTAG-GGTCATATTCTACTGCAAGTGGCCCTTACTGAGCTGAGAGATGTCATTGCCA 1153
s24 AGATAGGGGTGATATTCTGTTCCAAGTGGCCCTTACTGACCCGAGAGACGTCATTGCCG 1065
s25 GGTAG-GGTCATATTCTACTGCAAGTGGCCCTTACTGAGCTGAGAGATGTCATTGCCA 1127
s26 GGTAG-GGTCATATTCTACTGCAAGTGGCCCTTACTGAGCTGAGAGATGTCATTGCCA 1127
s27 AGATAGGGGTGACATTCTGTTCCAAGTGGCCCTTACTGACCCGAGAGACGTCATTGCCA 1064
s28 ATATAAAGATCATATTCTGCTCCAAGTGGCCATTACTGAGCTGAGAGATGTCATTGCCG 1134
s29 GGTAG-GGTCATATTCTACTGCAAGTGGCCCTTACTGAGCTGAGAGATGTCATTGCCA 1149
s30 AGATAGGGGTGATATTCTATTCCAAGTGGCCCTTACTCACCCGAGAGATGTCATTGCCG 1065
s31 ATATAA-----TGATCATGCTCCAAGTCCAAATCACTGATGCGAGAGATAGAAGTGACA 1099
s32 GGTAG-GGTCATATTCTACTGCAAGTGGCCCTTACTGAGCTGAGAGATGTCATTGCCA 1133
s33 AGATAGGGGTGATATTCTGTTCCAAGTGGCCCTTACTGACCCGAGAGATGTCATTGCCG 1073
s34 ATATAAAATCATATTCTGATCCAAGTGGCCATTACTGAGCAGAGAGATGTCGCTGCGG 1119
s35 GGTAG-GGTCATATTCTACTGCAAGTGGCCCTTACTGAGCAGAGAGATGTCACAGCCA 1158

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s1 C-----AGGCAGGACCTATGGGCGCATA-----TAGGTTGTAATGAAAATGTA 1150
s2 C-----AGGGAGGACCTATAGGCACATGTAGGTTGAATGAAACTCTA----GTTCTACC 1169
s3 C-----AGGGAGGACCTCTAAGCACATGTGGGTTGAATGAAACTCTA----GTTCCACT 1183
s4 C-----AGGCAGGACCTATGGGCGCATA-----TAGGTTGTAATGAAAATGTA 1108
s5 C-----AGGGAGGACCTATAGGCACATGTAGGTTGAATGAAACTCTA----GTTCTACC 1165
s6 C-----AAGGAAGACCTATATAGCACATGTAGGTTGAATGAAACTCTA----AGTCCACT 1183
s7 C-----AGGCAGGACCTATGGGTCATA-----TAGGTTGTAATGAAAATGTA 1107
s8 G-----AGAGAAAGAAATAT--GAACAAATATATAGTAAAAAAACTA----GACCTAAC 1187
s9 C-----ACGGAAGAAATAGACACATGGAAGCACATAGAAACTCTA----GAAACAATT 1180
s10 A-----AGTGTGACCTAAAGGAAGACCTACATTCAAATGAAAGTCTAAATGAACCTCTA 1093
s11 C-----AGGCAGGATCATTGAGGTCTA-----TAGAATGTAATGAAAATGTA 1107
s12 C-----AGTGAGGACCTATAGGCACATGTAGGTTGAATGAAACTCTA----GTTCTACC 1189
s13 C-----AGGGAGGACCTATAGGCACATGTAGGTTGAGTGAAACTCTA----GTTCCACT 1185
s14 A-----AGAAAGGAACAAGAAGCAAAATGAAGCTTCAAGGAAGCTCTA----GTCCAACT 1062
s15 C-----AGGCAGGACCTATGGGCGCATA-----TAGGTTGTAATGAAAATGTA 1074
s16 C-----AGGGAGGACCTATACGCACATGTAGGTTGAATGAAACTCTA----GTTCTACC 1159

s17 C-----ACACAGGAACAATAGAAACAAAGAACAGGAACAAAACGAAA----CC----- 1179
s18 C-----AGGCAGGACCTATGGACGTATA-----TATGTTGTAGTGAAACTGTA 1120
s19 C-----AGGGAGGACCTATAGGCACATGTAGGTTGAATGAAACTCTA----GTTCTACC 1177
s20 C-----AGGGAGGTCCTATAGGCACATGTAGGTTGAATGAAACTCTA----GTTCCACT 1203
s21 C-----AGGCAGGACCTATGGGCGCATA-----TAGGTTGTAATGAAACTGTA 1120
s22 C-----AGGGAGAAAGTATAGGCACATATACATAGAATGAAACTCTA----GTTCTATC 1163
s23 C-----AGGGAGGTCCTATAGGCACATGTAGGTTGAATGAAACTCTA----GTTCCACT 1203
s24 C-----AGGCAGGACCTATGGGCGCATA-----TAGGTTGTAATGAAACTGTA 1108
s25 C-----AGGGAGGAACTATAGGCACATGTAGGTTGAGTGAAACTCTA----GTTCCACT 1177
s26 C-----AGGGAGGAACTATAGGCACATGTAGGTTGAGTGAAACTCTA----GTTCCACT 1177
s27 C-----AGGCAGGACCTATGGGTGCATA-----TAGGTTGTAATGAAACTGTA 1107
s28 C-----AGTGAGGACCTATAGGCACATGTAGGTTGAATGAAACTCTA----GTTCTACC 1184
s29 C-----AGGGAGGACCTATAGGCACATGTAGGTTGAGTGAAACTCTA----GTTCCACT 1199
s30 C-----AGGCAGGACCTATGGGCGCATA-----TAGGTTGTAATGAAACTGTA 1108
s31 GAGCGAGGGGGAAGACGTACATGCATATGGAAAGAAACTCAAACTCTA----GCTCTATG 1155
s32 C-----AGGGAGGAACTATAGGCACATGTAGGTTGAGTGAAACTCTA----GTTCCACT 1183
s33 C-----AGGCAGGACCTGTGGGCGCATA-----TAGGTTGTAATGAAACTGTA 1116
s34 C-----AGTGAAAGACATACAGGCACATGTAGATTGAATCAAACTCTA----GTTCTACC 1169
s35 C-----AGGGAGGACCTATAGGCACATGTAGGTTGAATGAAACTCTA----GTTCCACT 1208

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s1 GTCTCAGTTGAAAGCCTAGACATGAAATGGGTGAGTGCGCAAGGGCCTATTCCTAGGCTC 1210
s2 TGG-----AAGCCCAGGCAAGGGATGGGTGAGTGAGCAAGACTCTCTTCCCTAGTCTC 1221
s3 TGT-----AAGACCAGAGAAGGGATGGGTAAACAGAGCAAGGTTCTCTTCCCTTCTC 1235
s4 GTCTCAGTTGGAAAGCCTAGACATGAAATGGGTGAGTGAGCAAGGCTCTATTCCTAGTCTC 1168
s5 TGG-----AAGCCCAGACAAGGGATGGGTGAGTGAGCAAGACTCTCTTCCCTAGTCTC 1217
s6 TAG-----AAGCCCAGACAAGGGATGGGTCTGTGAGCCTGGCCCTATTCCTAGTCTC 1235
s7 GTCTCAGCTGGAAAGCCTAGACATGAAATGGGTGAGTGAGCAAGGCTCTATTCCTAGTCTC 1167
s8 ACG-----GGAAGCACAAATGAGAAAGGCCACAGTGCAAGTCTCTCTCCATACACTC 1239
s9 GAAAAACACAGAAGACCAATCAGGAAGTGAGCAAGTAAGAAAGGGTAGTCTCCAAGCCTC 1240
s10 AGTCCACTCGAAAGACCAGTCAACGAAACAGGACACTGACCATAGTCACTGCCAAGTCTC 1153
s11 GTCGCAGAGGCAAGGCAAGACATGGAGTGGGTGAGTGACCTTCGATTCTCCATACCCCCACCC 1167
s12 TGG-----AAGCCCAGACATGGGATGGGTGAGTGAGCATGGCTCTCTTCCCTAGTCTC 1241
s13 TGG-----AAGCCCAGACAAGGGATGGGTGAGTGAGCAAGGCTCTCTTCCCTAGTCTC 1237
s14 GGGAAAGCCCA-----GACAA-----AGGAGGAGCAAGCAACAAACCCCTCCCATCTC 1110
s15 GTCTCAGTTGGAAAGCCTAGACATGAAATGGGTGAGTGAGCAAGGCTCCATTCCTAGTCTC 1134
s16 TGG-----AAGCCCAGACAAGGGATGGGTGAGTGAGCAAGACTCTCTTCCCTAGTCTC 1211
s17 --CACACATAGAAAGCCACACAAAGGCATGGGTCAATGACCAAGGCCAAACCAGCACTC 1237
s18 GTCTCACTTGGAAAGCCTAGATATGAAAGGAGTCAAGTGAGCAAGGCTCTATTCCTACTCTC 1180
s19 TGG-----AAGCCCAGGCAAGGGATGGGTGAGTGAGCAAGACTCTCTTCCCTAGTCTC 1229
s20 TGG-----AAGCCCAGACAAGGGATGGGTGAGTGAGCAAGGCTCTCTTCCCTAGTCTC 1255
s21 GTCTCAGTTGGAAAGCCTAGACATGAAATGGGTGAGTGAGCAAGGCTCTATTCCTAGTCTC 1180
s22 TCT-----ATGCCAGGCACGGGAGGGGTGAGTGAGTAAGACTCTCTTCCCTAGTCTC 1215
s23 TGG-----AAGCCCAGACAAGGGATGGGTGAGTGAGCAAGGCTCTCTTCCCTAGTCTC 1255
s24 GTCTCAGTTGGAAAGCCTAGACATGAAATGGGTGAGTGAGCAAGGCTCTATTCCTAGTCTC 1168
s25 TGG-----AAGCCCAGACAAGGGATGGGTGAGTGAGCAAGGCTCTCTTCCCTAGTCTC 1229
s26 TGG-----AAGCCCAGACAAGGGATGGGTGAGTGAGCAAGGCTCTCTTCCCTAGTCTC 1229
s27 GTCTCAGCTGGAAAGCCTAGACATGAAATGGGTGAGTGAGCAAGGCTCTATTCCTAGTCTC 1167
s28 TGG-----AAGCCCAGACATGGGATGGGTGAGTGAGCATGGCTCTCTTCCCTAGTCTC 1236
s29 TGG-----AAGCCCAGACAAGGGATGGGTGAGTGAGCAAGGCTCTCTTCCCTAGTCTC 1251
s30 GTCTCAGCTGGAAAGCCTAGACATGAAATGGGTGAGTGAGCAAGACTCTCTTCCCTAGTCTC 1168
s31 CAG-----AAACAGAGAAAGGGACAGGGAGAGAGACTCAGTCTCTAATCCTAGTCTA 1207
s32 TGG-----AAGCCCAGACAAGGGATGGGTGAGTGAGCAAGGCTCTCTTCCCTAGTCTC 1235
s33 GTCTCAGTTGGAAAGCCTAGACATGAAATGGGTGAGTGAGCAAGGCTCTATTCCTAGTCTC 1176
s34 CGG-----AAACCCAGACAAGGGATGGGTGAGTGAGCCACACTCTCTTCCCAGTCTC 1221
s35 TGC-----CAGCCCAGACAAGGGATGGGTGAGTGAGCAACGCTCTCTTCCCAGTCTC 1260

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s1 CAGCCATGCCTGTGGCAAGCTGAGCCCGCTCTAAGCACATTGGACCCAGGCAGATGTAAA 1270
s2 AGGCCATACCTGTGGCGCCCTGATCCTATCCTCATGACATTGGACCTGGGCAGATGTGAC 1281
s3 AGGCCACGCTTGTGCCGCCCTAATCCTCCTCTCATGACGTTGGACCTGGGCTGATGTGAC 1295
s4 CAGCCATGCCTGTGGCAACCTGAGCCCGCTCTCAGCACATTGGACCCAGGCAGATGTAAA 1228
s5 AGGCCATACCTGTGGCGCCCTGATCCTATTCTCATGACATTGGACCTGGGCAGATGTGAC 1277
s6 AGGCCATGCCAGTGGCGCCCTAATCCTACTCTCATGACATTGGACCTGGGCAGATGTCAA 1295
s7 CAGCCATGCCTGTGGCAACCTGAGCCCACTCTCAGCACATTGGACCCAGGCAGATGTAAA 1227
s8 AGAACACACATCTGACACTCTCAAAATACACTCTCGACACATGAGACAAGCACAGATGAC 1299
s9 AATCCATAACCTTAGAACAACTCAAGCTATCAGAATCCGCATATGGGCAAAAGTCAC 1300
s10 AGGCCACAAAGAGGACCCATAAGCACATGCACATGGAATGAAATCACAGATCCACTCAA 1213

s11 CAGCCACCCCTGAGCCAACCCGACCCAACTCACAGCAGAACCGACCCAAAAAATGAAAA 1227
s12 AGGCCATGCCTGTGGCACTCTGATTTCTACTCTCATGACATTGGACCTGGGCAGATGTGAC 1301
s13 AGGCCCTGCCTGTGGCACTCTAAATCCTACTCTCAAGATGTTGGATCTGGGCAGATGTGAC 1297
s14 AGGCCATGCCTGTGGCACTCTAAATCCTACTCTCATGACATTGGACCTGGGCAGATGTGAC 1170
s15 CAGCCATGCCTGTGGCAACCTGAGCCCGCTCTCAGCACATTGGACCCAGGCAGATGTAAA 1194
s16 AGGCCATACCTGTGGCGCCCTGATCCTATTCTCATGACATTGGACCTGGGCAGATGTGAC 1271
s17 ACAACATGCCCGCAGCACCAAACAATACACCCACGACAGGGGACACACGCACACATAAC 1297
s18 GAGCCAGCCCTGGGCCAAGCTGAGCCCGCTCTCAGCACATTGAAACCAAGCCAGATGTAAA 1240
s19 AGGCCATACCTGTGGCGCCCTGATCCTATCCTCATGACATTGGACCTGGGCAGATGTGAC 1289
s20 AGGCCATGCCTGTGGCGCCCTAAATCCTACTCTCATGACGTTGGACCTGGGCAGATGTGAC 1315
s21 CAGCCATGCCTGTGGCAAGCTGAGCCCGCTCTCAGCACATTGGACCCAGGCAGATGTAAA 1240
s22 AGCCTCTACCTGTGCGCCCTGACCCATATCCCTCATGACATTGTACCTGTGCAGATGTGAC 1275
s23 AGGCCATGCCTGTGGCGCCCTAAATCCTACTCTCATGACGTTGGACCTGGGCAGATGTGAC 1315
s24 CAGCCATGCCTGTGGCAACCTGAGCCCGCTCTCAGCACATTGGACCCAGGCAGATGTAAA 1228
s25 AGGCCATGCCCGTGGCGCCCTAAATCCTACTCTCAAGATGTTGGATCTGGGCAGATGTGAC 1289
s26 AGGCCATGCCCGTGGCGCCCTAAATCCTACTCTCAAGATGTTGGATCTGGGCAGATGTGAC 1289
s27 CAGCCATGCCTGTGGCAACCTGAGCCCGCTCTCAGCACATTGGACCCAGGCAGATGTAAA 1227
s28 AGGCCATGCCTGTGGCACTCTGATTTCTACTCTCATGACATTGGACCTGGGCAGATGTGAC 1296
s29 AGGCCCTGCCTGTGGCAACCTAAATCCTACTCTCAAGATGTTGGATCTGGGCAGATGTGAC 1311
s30 AGGCCATACCTGTGGCGCCCTGATCCTATTCTCATGACATTGGACCTGGGCAGATGTGAC 1228
s31 AACCTGTCCCTCTCTCACTCTGGTCCTATGACTATGACCTTGGACCTGTGCAAATGAGAA 1267
s32 AGGCCATGCCTGTGGCGCCCTAAATCCTACTCTCAAGATGTTGGATCTGGGCAGATGTGAC 1295
s33 CAGCCATGCCTGTGGCAACCTGAGCCCGCTCTCAGCACATTGGACCCAGGCAGATGTAAA 1236
s34 AAGCCATACCTGTGCGCCCTGATCCTATTCTCATGACATTGGCCCTGGGCAGAAATGAC 1281
s35 AGGCCATGCCCGTGGCGCCCTAAATCCCACTCTCATGACAAATGGACCTAGGCAGATGTGAC 1320

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s1 AAATTCACAGAACTATCATTGTACTGAAGGGTTTGTAGA-----TTTCCTCCTTCAT 1323
s2 AAATTCAGAGAACTATGATTTTGACTCAAGGGTTTGTAGA-----TTTCCTTTTTCAC 1334
s3 AAATCCACAACTCTTTTTTTTTTCAATTTTGTAGATCTTGTAA-ATTCATCCTTCAC 1354
s4 AAATTCACAGAACTATGATTTGGACTGAAGGGTTTGTAGA-----TTTCCTCCTTCAT 1281
s5 AAATTCAGAGAACTATGATTTTGACTCAAGGGTTTGTAGA-----TTTCCTTTTTCAC 1330
s6 ATATTCACACAACTCTGATTTTGTCTTATTTTGTAGATCTTGTAGATTTTCATCCTTCAC 1355
s7 AAATTCACAGAACTATGATTTGGACTCAAGGGTTTGTAGA-----TTTCCTCCTTCAT 1280
s8 AAAAAATTCAGAAAAATGAGTTTGTAACTAGAGTTTTTAAA-----TATAATTTTCTC 1352
s9 ACATTAACAATAATATGTTAATAAACAGTTCTGCAAACTTTGAAAAATAACTCCAACAC 1360
s10 AAATCCACAACTCAAATCTCAACAAATACA-----GT-----ATATATCCTACAT 1261
s11 AAATTCAAAAGTTCTATGAATTCATAGATTGTTTTGTTA-----TTTCCTCCTTCAT 1280
s12 AAATTCAGAGAACTATGATTTTGACTCAAGGGTTTGTAGA-----TTTCCTTTTTCAC 1354
s13 AAATTCACACAACTCTGATTTTGTCTTAAATCTGTAGATCTTGTAGATTTTCATCCTTCAC 1357
s14 AAATTCACACAACTCTGATTTTGTCTCAATTTTGTAGATCTTGTAGATTTTCATCCTTCAC 1230
s15 AAATTCACAGAACTATGATTTGGACTCAAGGGTTTGTAGA-----TTTCCTCCTTCAT 1247
s16 AAATTCAGAGAACTATGATTTTGACTCAAGGGTTTGTAGA-----TTTCCTTTTTCAC 1324
s17 AAAGCACACAAACCCGGAAGTGATCACAAGACATAGAAATTTGGAAACACCAACCTCCAC 1357
s18 AAAATCACAAGGTAACAGTGGGATTGAAGGATTTCTTTA-----TTTCCTTCTTCAT 1293
s19 AAATTCAGAGAACTATGATTTTGACTCAAGGGTTTGTATA-----TTTCCTTTTTCAC 1342
s20 AAATTCACACAACTCTGATTTTGTCTCAATTTTGTAGATCTTGTAGATTTTCATCCTTCAC 1375
s21 AAATTCACAGAACTATGATTTGGACTGAAGGGTTTGTAGA-----TTTCCTCCTTCAT 1293
s22 AAAGTCAAAGAAATATAATTTTAAAGTCTATGATTTGTAGA-----TTTACTTTTTTAC 1328
s23 AAATTCACACAACTCTGATTTTGTCTCAATTTTGTAGATCTTGTAGATTTTCATCCTTCAC 1375
s24 AAATTCACAGAACTATGATTTGGACTCAAGGGTTTGTAGA-----TTTCCTCCTTCAT 1281
s25 AAATTCACACAACTCTGATTTTGTCTCAATTTTGTAGATCTTGTAGATTTTCATCCTTCAC 1349
s26 AAATTCACACAACTCTGATTTTGTCTCAATTTTGTAGATCTTGTAGATTTTCATCCTTCAC 1349
s27 AAATTCACAGAACTATGATTTGGACTCAAGGGTTTGTAGA-----TTTCCTCCTTCAT 1280
s28 AAATTCAGAGAACTATGATTTTGACTCGAGGGTTTGTAGA-----TTTCCTTTTTCAC 1349
s29 AAATTCACACAACTCTGATTTTGTCTGAATTCGTAGATCTTGTAGATTTTCATCCTTCAC 1371
s30 AAATTCAGAGAACTGTGATTTTGTCTCAAGGGTTTGTAGA-----TTTCCTTTTTCAC 1281
s31 AGAGACAGAAAAATGACTATAGCTTTTGGATTTTAGT-----TTTACTTTTAT 1320
s32 AAATTCACACAACTCTGATTTTGTCTCAATTTTGTAGATCTTGTAGATTTTCATCCTTCAC 1355
s33 AAATTCACAGAACTATGATTTGGACTCAAGGGTTTGTAGA-----TTTCCTCCTTCAT 1289
s34 AAAGACAGATAAATTTGATTCTGACTCATGGGTATGTAGA-----TTTCCTCCTTCAC 1334
s35 AAATTCACCAACTCTGATTTGTCTCAATTAATGTAGATCATGTAGATTTTCATCCTTCAC 1380

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s1 TCTAATTTCA--GTGTCTAAAAATCTTGCATCCATGAACGATCTGGGCATTTGATGAGAC 1381
s2 TCTAATTTCA--GTGTCTAAAGTCTCACAACCATGAACAATCTGAGTATTTGATGAGAC 1392
s3 TCTAATTTCA--GCGTCTAAAAATCCTCGCTACCGTGAACAATCTGAGTATTTGATGAGAC 1412
s4 TCTAATTTCA--GTGTCTAAAAATCTTGCATCCATGAACGAGCTGGGCATTTGATGAGAC 1339

s5 TCTAATTTCA--GTGTCTAAAGTCTCACAACCATGAACAATCTGAGTATTTGATGAGAC 1388
s6 TCCAATTTCA--GCGTCTGAAATCATCGATACCATGATCAATCTGAGTATTTGATGAGAC 1413
s7 TCTAATTTCA--GTGTCTAAAATTTCTTGCATCCGTGAACGAGCTGGGCATTTGATGAGAC 1338
s8 TCTAAAATCACAGTATCCGAAACACAAAAATATAAAAATATGAGAGTATTTAAATGACAC 1412
s9 AATAATATAA--GAACCTAGAATCCATGAAAAAATAAAAAATTTGACAAGAAAAATGATAA 1418
s10 TACAACCTCC--ACGTCAAAAACAAAACCTAACATAAAACAATACGATCAACAAAACAAGAC 1319
s11 TCTTACTTTCA--GTGACTAAACTTGTACATGGCAGAACGAGAGAGTCAATTTGAGAAGAC 1338
s12 TCTAATTTCA--GTGTCTGGAGTCTCACAACCATGAACAATCTGAGTATTTGATGAGAC 1412
s13 TCTAATTTCA--GCGTCTAAAATCTCGCTACCATGAACAATCTGAGTATTTGATGAGAC 1415
s14 TCTAATTTCA--GCGTCTAAAATCTCACTACCATGAACAATCTGAGTATTTGATGAGAC 1288
s15 TCTAATTTCA--GTGTCTAAAATTTCTTGCATCCATGAACGAGCTGGGCATTTGATGAGAC 1305
s16 TCTAATTTCA--GTGTCTAAAGTCTCACAACCATGAACAATCTGAGTATTTGATGAGAC 1382
s17 GCAAAATACAA--AAGTCCAAAAGCATCGCAACCGAACCAATCTCACTAAGCGACGAGAC 1415
s18 TCTTATTTTAA--TTGTCTAACTTTTATGCATCCATGAATGAGCTGGGCATTTGATGAGAC 1351
s19 TCTAATTTCA--GTGTCTAAAGTCTCACAACCATGAACAATCTGAGTATTTGATGAGAC 1400
s20 TCTAATTTCA--GCGTCTAAAATCTCGCTACCGTGAACAATCTGAGTATTTGATGAGAC 1433
s21 TCTAATTTCA--GTGTCTAAAATTTCTTGCATCCATGAACGAGCTGGGCATTTAAATGAGAC 1351
s22 TCTAATTTTT--TTGTCTCAATTTCTCACACCCAAAAACAATCTAAGTATTTGATGAGAT 1386
s23 TCTAATTTCA--GCGTCTAAAATCTCGCTACCGTGAACAATCTGAGTATTTGATGAGAC 1433
s24 TCTAATTTCA--GTGTCTAAAATTTCTTGCATCCATGAACAAGCTGGGCATTTGATGAGAC 1339
s25 TCTAATTTCA--GCGTCTCAAAATCTCACTACCATGAACAATCTGAGTATTTGATGAGAC 1407
s26 TCTAATTTCA--GCGTCTCAAAATCTCACTACCATGAACAATCTGAGTATTTGATGAGAC 1407
s27 TCTAATTTCA--GTGTCTAAAATTTCTTGCATCCGTGAACGAGCTGGGCATTTGATGAGAC 1338
s28 TCTAATTTCA--GTGTCTGGAGTCTCACAACCATGAACAATCTGAGTATTTGATGAGAC 1407
s29 TCTAATTTCA--GCGTCTAAAATCTCGCTACCATGAACAATCTGAGTATTTGATGAGAC 1429
s30 TCTAATTTCA--GTGTCTGGAGTCTCACTACCATGAACAATCTGAGTATTTGATGAGAC 1339
s31 TTTAATCTCA--ATTTCTCACATCAACATA-----AACAAACAAAATATCAGAAGAGAA 1372
s32 TCTAATTTCA--GCGTGTAAAATCTCACTACCATGAACAATCTGAGTATTTGATGAGAC 1413
s33 TCTAATTTCA--GTGTCTAAAATTTCTTACATCCATGAACGAGCTGGGCATTTGATGAGAC 1347
s34 TTTAATTTCA--ATAACTCACACCTCACAACAAGAACAATCTGTGTATTTGGATGAGAC 1392
s35 TCTAATTTCA--GCGTCTAAAATCTCGCTACCATGAACAATCTGAGTATTTGATGAGAC 1438

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s1 AGGGCTGAATACTGCAATTTTCTCATAGAAATCATCTAAGGCATTTATTTGAACTG-A 1440
s2 AGGGCTAAATATTCAGTTTTTCTCCTAGAAATCATTTGAGGGTATTTGCTTTAAGTTGA 1452
s3 AGGGCTGAATAGTGCAGTTTTTCTCCTAGCAACCATTTGGGGCAATTTGCTTTAAATCGA 1472
s4 AGGGCTGAATACTTTAGTTTTCTCCTGGAAATCATCTGGGGCATTTTCTTTGAACTG-A 1398
s5 AGGGCTAAATATTCAGTTTTTCTCCTAGAAATCATTTGAGGGTATTTGCTTTAAGTTGA 1448
s6 AGGGCTGAATAGTGCAGTTTTTCTCCGAGCAACCATTTGGGGCAATTTCTATAAAATCGA 1473
s7 AGGGCCGAATACTGCAGTTTTTCTCCTAGAAATCTCTGGGGCATTTTCTTTGAACTG-A 1397
s8 AGCTATAAAATATAGAAATTTTTCCAGAAATATCATTTGAGTATATTCGATAAAATAAGA 1472
s9 AGAGCGCAATTTCTCCAATTTCAACCAATAAACCAACATCAGCGTAATATCTATAAAATAGA 1478
s10 ACAAATTAACACAGCACTGATTAFCAGAAATTCATTAGAGCAAAATATTTCAACATTA 1379
s11 AGGGCTAAATACTGTTTTTCTCCTATAAAATCGGAGGGGCATGCTAAAATGATG-A 1397
s12 AGGGCTAAATATTCAGTTTTTCTCCTAGAAATCATTTGAGGGTATTTGCTTTAAATTTGA 1472
s13 AGGGCTGAATAGTGCAGTTTTTCTCCTAGCAACCATTTGGGGCAATTTGCTTTAAATCGA 1475
s14 AGGGCTGAATAGTGCAGTTTTTCTCCTAGCAACCATTTGGGGCAATTTGCTTTAAATCGA 1348
s15 AGGGCTGAATACTGCAGTTTTTCTCCTAGAAATCATCTGGGGCATTTTCTTTGAACTG-A 1364
s16 AGGGCTAAATATTCAGTTTTTCTCCTAGAAATCATTTGAGGGTATTTGCTTTAAGTTGA 1442
s17 AGGCCAAAGACAGCAGCATCTCCGAGCAACCAATCCAAAGCAGTTACCCATAATCCA 1475
s18 AGGCCGAATACTCCTGTTTTTCTCCTGGAAGGCCTTTGTGGTATTTTTTTTGAACAA-A 1410
s19 AGGGCTAAATATTCAGTTTTTCTCCTAGAAATCATTTGAGGGTATTTGCTTTAAGTTGA 1460
s20 AGGGCTGAATAGTGCAGTTTTTCTCCTAGCAACCATTTGGGGCAATTTGCTTTAAATCGA 1493
s21 AGGGCTGAATACTGCAGTTTTTCTCCTAGAAATCATCTGGGGCATTTTCTTTGAACTG-A 1410
s22 AGAGATAAAATATATAAGTTTTTCTTTTTACATCTTTTAAAGCGTATTTGTTTTATGTTGA 1446
s23 AGGGCTGAATAGTGCAGTTTTTCTCCTAGCAACCATTTGGGGCAATTTGCTTTAAATCGA 1493
s24 AGGGCTGAATACTTTAGTTTTCTCCTGGAAATCATCTGGGGCATTTTCTTTGAACTG-A 1398
s25 AGGGCTGAATAGTGCAGTTTTTCTCCTAGCAGCCATTTGGGGCAATTTGCTTTAAATCGA 1467
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s27 AGGGCCGAATACTGCAGTTTTTCTCCTAGAAATCTCTGGGGCATTTTCTTTGAACTG-A 1397
s28 AGGGCTAAATATTCAGTTTTTCTCCTAGAAATCATTTGAGGGTATTTGCTTTAAATTTGA 1467
s29 AGGGCTGAATAGTGCAGTTTTTCTCCTAGCAACCATTTGGGGCACTTGCTTTAAATCGA 1489
s30 AGGGCTAAATATTCAGTTTTTCTCCTAGAAATCATTTGAGGGTATTTGCTTTACGTTG-A 1398
s31 TGAGATAAAATATAGATTTTTTAAATTTCTAGAATTTTCTGAGAGTATTTGTTTTAGCATTA 1432
s32 AGGGCTGAATAGTGCAGTTTTTCTCCTAGCAGCCATTTGGGGCAATTTGCTTTAAATCGA 1473
s33 AGGGCTGAATACTGCAGTTTTTCTCCTAGAAATCATCTGGGGCATTTTCTTTGAACTG-A 1406
s34 AGAAATAAAATATTTCTGTCTTTTCACTAGAAATCGTGTGAGTGTATTTGATTTAAATTTGA 1452
s35 AGGGATGAATAGTGCAGTTTTTCTCCTAGCAACCATTTGGGGTATTTGCTTTAAATCGA 1498

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s1 AGGAAACAATAAGGCATAACTGTTTGCACAAACTTGGGATAAATAATTTTGGGATAACGA 1500
s2 TTGGAAAAATATGGCATAAACCATTGTCACAAACTTGGGACAAATGATATTGGGATAACGA 1512
s3 TTGGAAAAATATGGCATAAACCATTGTCACAAACTTGGGACAAATGATATTGGGATAACGA 1532
s4 TGGGAACAATAAGGCATAACTGTTTGCACAAACTTGGGATAAATGATTTTGGGATAACGA 1458
s5 TTGGAAAAATATGGCGTAACGTTTGCACAAACTTGGGACAAATGATATTGGGATAACGA 1508
s6 TTGGAAAAATATAGCATAAACATTTGCACAAACTTGGGACAAATGATATTGGGATAACGA 1533
s7 TGGGAACAATAAGGCATAACTGTTTGCACAAACTTGGGATAAATGATTTTGGGATAACGA 1457
s8 AAAAAATATGAAAAACTCTGTACACAAAATATTGGGAAATAATAAATGGGAACAATA 1532
s9 TTATAAAAAATGATATACACATTTCAACGAACATAGAAAAATGATAATGACATAACAG 1538
s10 ACTCTAAATTAAGCGAAAAAATTCGCACAACCATGAGCAAAATGATAATAGGATAAAAA 1439
s11 AAAAAATAGAAATAATATATGTT---CAAAACTATAGAAATAAATAGTGTGAAAA 1453
s12 TTGGAAAAATAGGCATAACTGTTTGCACAAACTTGGGACAAATGATATTGGGATAACGA 1532
s13 TTGGAAAAATATGGCATAAACCATTGTCACAAACTTGGGAGAAATGATATTGGGATAACGA 1535
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s18 AGGAAACAAGGAATAAATAATTTGCATAAACCGAGGTATAAATGATTTGTTATAAAA 1470
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s22 TTGGATAAAAAATAAATTAATATATGCGCAAACTAGGAAAAATGAAATGGGATAAAGA 1506
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s28 TTGGAAAAATAGGCATAACTGTTTGCACAAACTTGGGACAAATGATATTGGGATAACGA 1527
s29 TTGGAAAAATATGGCATAAACCATTGTCACAAACTTGGGAGAAATGATATTGGGATAACGA 1549
s30 TTGGAAAAATATGGCGTAACGTTTGCAGAAACTTGGGACAAATGATATTGGGATAACGA 1458
s31 ATTTAAATATATTTGGAAAAATGTTGGCAAAAAATGAGAAAAAATAATTGAAATAAGA 1492
s32 TTGGAAAAATATGGCATAAACCATTGTCACAAACTTGGGACAAATGATATTGGGATAACGA 1533
s33 TGGGAACAATAAGGCATAACTGTTTGCACAAACTTGGGATAAGTATTTTGGGATAACGA 1466
s34 AAAAAAATATGGCATAACTGTATACACAAAATAAAAAAATGATATTGAGATATCGA 1512
s35 AAGAAAAATATGGCATAAACCATTGTCACAAACTTGGGACAAATGATATTGGGATAACGA 1558

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s1 TCTACCAGAATGGGATATTTTACCCCTTGGTTCTGAGATGCAAAACCAAGAATATCAT-- 1558
s2 TCTACTAGAATAGGGACATTTTACCCACAGTTTCTGGGAGAAAAACCGAGGAATTTCTAT 1572
s3 TCTACCAGAATAGGGAAATTTTACCCACAG-TTTCCTGGGACAAAAACCAAGGAATCTCTAT 1591
s4 TCTACCAGAATGGGATATTTTACCCCTTGGTTCTGAGATGCAAAACCAAGAAT-----AT 1513
s5 TCTACTAGAATAGGGACATTTTACCCACAGTTTCTGGGAGAAAAACCGAGGAATTTCTAT 1568
s6 TCTACCAGAAAAGGGAAATTTTACCCACAG-ATTCCTGGGACAAAAACCAAGGAATCTCTAT 1592
s7 TCTACCAGAATAGGGATATTTTACCCCTTGGTTCTGAGATGCAAAACCAAGAAT-----AT 1512
s8 TACACAAAAATAGAGACATTTAAACCCAGAGTATCTGAGAAAAACCAAGAAATATCT---- 1588
s9 TATACAAAAGTAAAGAAAAACCCCTGGG-ACAAAAAATAAAAA-CAACAAACATAAAC 1596
s10 TCGGCAAAAAATGCAACTTTACACAGAGCTTCA-ACCAGAGAAAACCAAGAAAACAAAA 1498
s11 ACTATCCGACAAGAGAAGTTTACCAAAACAT-TCTATGACAAAAACCAAGGAATCTCTAT 1512
s12 TCTACTAGAATAGGGACATTTTACCCACAGTTTCTGGGAGAAAAACCGAGGAATTTCTAT 1592
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s16 TCTACTAGAATAGGGACACTTTTACCCACAGTTTCTGGGAGAAAAAACAGCAAGACCCAT 1562
s17 AACACAAGAAGCAATGGCACACAAG-GTACTGCAAAAAAACCAAGGAACCTCAAA 1594
s18 AATACAAAAATGGGATGTTTCAACCATGATTCAAAAAAATAAAAAA----- 1521
s19 TCTACTAGAATAGGGACATTTTACCCACAGTTTCTGGGAGAAAAACCGAGGAATTTCTAT 1580
s20 TCTACCAGAATAGGGAAATTTTACCCACAG-TTTCCTGGGACAAAAACCAAGGAAT----- 1606
s21 TCTACCAGAATGGGATATTTTACCCCTTGGTTCTGAGATGCAAAACCAAGAAT-----AT 1525
s22 TATATTGGAATAGGGACATATTTAACCCTCAGACTCTGAGAGAGAGAGAGAAAGAGATAT 1566
s23 TCTACCAGAATAGGGAAATTTTACCCACAG-TTTCCTGGGACAAAAACCAAGGAATCTCTAT 1612
s24 TATACCAGAATGGGATATTTTACCCCTTGGTTCTGAGATGTAAACCAAGAAA-----AT 1513
s25 TCTACCAGAATAGGGAAATTTTACCCACAG-TTTCCTGGGACAAAAACCAAGGAATCTCTA- 1585
s26 TCTACCAGAATAGGGAAATTTTACCCACAG-TTTCCTGGGACAAAAACCAAGGAATCTCTAT 1586
s27 TCTACCAGAATAGGGATATTTTACCCCTTGGTTCTGAGATGCAAAACCAAGAAT-----AT 1512
s28 TCTACTAGAATAGGGACATTTTACCCACAGTTTCTGGGAGAAAAACCGAGGAATTTCTAT 1587
s29 TCTACCAGAATAGGGAAAGTTTACCCACAG-TTTCCTGGGACAAAAACCAAGGAATCTCTAT 1608

s30	TCTACTAGAATAGGGACATTTTACCCACAGTTTCTGGGAGAAAAACCGAGGAATTTCTAT	1518
s31	TAAAAAATAGAGGAATAGTAACTAACCAATTTAGACACAAAAACAGAGAAATAGAAAT	1552
s32	TCTACCAGAATAGGGAAATTTTACCCACAG-TTTCCTGGGACAAAAACCAAGGAATCTCTAT	1592
s33	TCTACCAGAATGGGGATATTTACCCCTTGGTTCTGAGATGCAAAACCAAGAAT-----AT	1521
s34	TCAAATAGGATAGGTTCAACACACCCCTCAGTGTGAGAAAGAAAAACCGATGTATTTCTAT	1572
s35	TCTACCAGAATAGGGAAATTTTACCCACAG-TTTCCTGGGACAAAAACCAAGCAATCTCTAT	1617

* *

s1	---GACCAGCTTTCAGG	1572
s2	CATGACCAGCCTTCAGG	1589
s3	GGTGATCAGCCTTCAGG	1608
s4	CATGACCAGCTTTCAGG	1530
s5	CATGACCAGCCTTCAGG	1585
s6	GGTGATCAGCCTTCATG	1609
s7	CATGACCAGCTTTC---	1527
s8	-----	1588
s9	CAAGATCAGC-----	1606
s10	AAAAATCAGCCTTAAGG	1515
s11	CATGACCAGCCTTCAGG	1529
s12	CACGACCAGCCTTCAGG	1609
s13	CATGATCAGCCTTCAGG	1611
s14	GGTGATCAGCCTTCAGG	1484
s15	---GACCAGCTTTCAGG	1496
s16	CACAACAGACGGAAGG	1579
s17	AGTGATAACCCGCCAGG	1611
s18	-----	1521
s19	CATGACCAGCCTTCAGG	1597
s20	-----	1606
s21	CATGACCAG-----	1534
s22	CTTGATAAG-----	1575
s23	GGTGATCAGCCTT----	1625
s24	AATAACAAGATTTTCAG-	1529
s25	-----	1585
s26	GGTGATCAGCCTTCAGG	1603
s27	CATGACCAGCTTTCAGG	1529
s28	CACGACCAGCCTTCAGG	1604
s29	CATGCTCAGCCTTCAGG	1625
s30	CATGACCAGCCTTCAGG	1535
s31	TGAGATCACTACCAA--	1567
s32	GGTGATCAGCCTTCAGG	1609
s33	CATGACCAGCTTTCAGG	1538
s34	CATGACCAGCCTTCAGG	1589
s35	GGTGATCAGCCTTCAGG	1634


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(
(
(
(
s2:0.00812,
s5:0.00702)
:0.00555,
s19:0.05480)
:0.00776,
s12:0.01723)
:0.01204,
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(
s8:0.16340,
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s22:0.07935,
s31:0.13029)
:0.02108)
:0.01048,
s34:0.08857)
:0.01136)
:0.01253,
(
s16:0.08567,
s28:0.09713)
:0.04395)
:0.04983)
:0.00978,
(
s14:0.18974,
s17:0.24698)
:0.04672)
:0.02024,
s9:0.18280)
:0.02026,
s3:0.09992)
:0.01695,
(
s13:0.08717,
s29:0.00272)
:0.01256)
:0.00337,
s6:0.04224)
:0.00267,
(
(
s25:0.00000,
s26:0.00059)
:0.00237,
s32:0.00077)
:0.00605)
:0.00205,
(
s20:0.00072,
s23:0.00000)
:0.00333,
s35:0.02019);
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