
MEME - Motif discovery tool

MEME version 2.3.beta (Release date: 1998/11/09 23:48:58)

For further information on how to interpret these results or to get
a copy of the MEME software please access <http://www.sdsc.edu/MEME>.

This file may be used as input to the MAST algorithm for searching
sequence databases for matches to groups of motifs. MAST is available
for interactive use and downloading at <http://www.sdsc.edu/MEME>.

REFERENCE

If you use this program in your research, please cite:

Timothy L. Bailey and Charles Elkan,
"Fitting a mixture model by expectation maximization to discover
motifs in biopolymers", Proceedings of the Second International
Conference on Intelligent Systems for Molecular Biology, pp. 28-36,
AAAI Press, Menlo Park, California, 1994.

TRAINING SET

DATAFILE= apg_prosyn.fasta (deleted by web version of MEME)

ALPHABET= ACGT

| Sequence name | Weight | Length | Sequence name | Weight | Length |
|---------------|--------|--------|---------------|--------|--------|
| YLR397C | 1.0000 | 800 | YKR092C | 1.0000 | 800 |
| YJR071W | 1.0000 | 800 | YNL075W | 1.0000 | 800 |
| YNL114C | 1.0000 | 800 | YNL113W | 1.0000 | 800 |
| YNL022C | 1.0000 | 800 | YLR186W | 1.0000 | 800 |
| YDR184C | 1.0000 | 800 | YPL211W | 1.0000 | 800 |
| YFL002C | 1.0000 | 800 | YPR144C | 1.0000 | 800 |
| YHR196W | 1.0000 | 800 | YIR012W | 1.0000 | 800 |
| YLR401C | 1.0000 | 800 | YMR093W | 1.0000 | 800 |
| YDL167C | 1.0000 | 800 | YDR365C | 1.0000 | 800 |
| YCL054W | 1.0000 | 800 | YNL061W | 1.0000 | 800 |
| YOR294W | 1.0000 | 800 | YOR145C | 1.0000 | 800 |
| YHR169W | 1.0000 | 800 | YJL122W | 1.0000 | 800 |
| YNL141W | 1.0000 | 800 | YER110C | 1.0000 | 800 |
| YJR041C | 1.0000 | 800 | YDR341C | 1.0000 | 800 |
| YOR168W | 1.0000 | 800 | YMR308C | 1.0000 | 800 |
| YDR385W | 1.0000 | 800 | YGR264C | 1.0000 | 800 |
| YPL226W | 1.0000 | 800 | YDR091C | 1.0000 | 800 |
| YLR249W | 1.0000 | 800 | YGL120C | 1.0000 | 800 |
| YMR217W | 1.0000 | 800 | YPL183C | 1.0000 | 800 |
| YNL313C | 1.0000 | 800 | YJL109C | 1.0000 | 800 |
| YCL037C | 1.0000 | 800 | YMR229C | 1.0000 | 800 |
| YBR084W | 1.0000 | 800 | YHR020W | 1.0000 | 800 |
| YMR049C | 1.0000 | 800 | YDR412W | 1.0000 | 800 |
| YDR312W | 1.0000 | 800 | YKL078W | 1.0000 | 800 |
| YOR243C | 1.0000 | 800 | YDR465C | 1.0000 | 800 |
| YFR001W | 1.0000 | 800 | YDR361C | 1.0000 | 800 |
| YKL099C | 1.0000 | 800 | YBL028C | 1.0000 | 800 |
| YIL127C | 1.0000 | 800 | YHR066W | 1.0000 | 800 |

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|---------|--------|-----|---------|--------|-----|
| YHR197W | 1.0000 | 800 | YOR272W | 1.0000 | 800 |
| YJR070C | 1.0000 | 800 | YLR222C | 1.0000 | 800 |
| YGR123C | 1.0000 | 800 | YKL181W | 1.0000 | 800 |
| YCL059C | 1.0000 | 800 | YKR081C | 1.0000 | 800 |
| YKL021C | 1.0000 | 800 | YNL110C | 1.0000 | 800 |
| YLR221C | 1.0000 | 800 | YDR413C | 1.0000 | 800 |
| YJL148W | 1.0000 | 800 | YCR016W | 1.0000 | 800 |
| YLR003C | 1.0000 | 800 | YHR052W | 1.0000 | 800 |
| YKL009W | 1.0000 | 800 | YNL002C | 1.0000 | 800 |
| YDR101C | 1.0000 | 800 | YDR324C | 1.0000 | 800 |
| YDR083W | 1.0000 | 800 | YGL099W | 1.0000 | 800 |
| YGL111W | 1.0000 | 800 | YDL051W | 1.0000 | 800 |
| YMR131C | 1.0000 | 800 | YPR110C | 1.0000 | 800 |
| YMR290C | 1.0000 | 800 | YBL039C | 1.0000 | 800 |
| YML093W | 1.0000 | 800 | YGL078C | 1.0000 | 800 |
| YLL008W | 1.0000 | 800 | YER006W | 1.0000 | 800 |
| YDR496C | 1.0000 | 800 | YGR145W | 1.0000 | 800 |
| YGR245C | 1.0000 | 800 | YNL175C | 1.0000 | 800 |
| YNL174W | 1.0000 | 800 | YLR196W | 1.0000 | 800 |
| YOR206W | 1.0000 | 800 | YGR103W | 1.0000 | 800 |
| YLR276C | 1.0000 | 800 | YGR160W | 1.0000 | 800 |
| YNL182C | 1.0000 | 800 | YLR409C | 1.0000 | 800 |
| YLR129W | 1.0000 | 800 | YLR002C | 1.0000 | 800 |
| YNL132W | 1.0000 | 800 | YNL248C | 1.0000 | 800 |
| YGR128C | 1.0000 | 800 | YLR009W | 1.0000 | 800 |
| YNL062C | 1.0000 | 800 | YGL171W | 1.0000 | 800 |
| YKR056W | 1.0000 | 800 | YBR247C | 1.0000 | 800 |
| YJR002W | 1.0000 | 800 | YLR198C | 1.0000 | 800 |
| YOR309C | 1.0000 | 800 | YLR197W | 1.0000 | 800 |
| YLR175W | 1.0000 | 800 | YOR310C | 1.0000 | 800 |
| YLR449W | 1.0000 | 800 | YHR170W | 1.0000 | 800 |
| YBL024W | 1.0000 | 800 | YBR143C | 1.0000 | 800 |
| YDR165W | 1.0000 | 800 | YDR398W | 1.0000 | 800 |
| YPR190C | 1.0000 | 800 | YCR072C | 1.0000 | 800 |
| YJL069C | 1.0000 | 800 | YDL201W | 1.0000 | 800 |
| YHR065C | 1.0000 | 800 | YLL011W | 1.0000 | 800 |
| YER126C | 1.0000 | 800 | YDR087C | 1.0000 | 800 |
| YDL153C | 1.0000 | 800 | YPR142C | 1.0000 | 800 |
| YPR143W | 1.0000 | 800 | YPL146C | 1.0000 | 800 |
| YKL172W | 1.0000 | 800 | YNL308C | 1.0000 | 800 |
| YKL082C | 1.0000 | 800 | YGR272C | 1.0000 | 800 |
| YGL029W | 1.0000 | 800 | YPL266W | 1.0000 | 800 |
| YOL077C | 1.0000 | 800 | YBR142W | 1.0000 | 800 |
| YBR034C | 1.0000 | 800 | YLR435W | 1.0000 | 800 |
| YGR187C | 1.0000 | 800 | YHR089C | 1.0000 | 800 |
| YCR057C | 1.0000 | 800 | YBL068W | 1.0000 | 800 |

EXPLANATION OF RESULTS

For each motif that it discovers in the training set, MEME prints the following information:

Summary Line

This line gives the width ('width') and expected number of occurrences in the training set ('sites') of the motif. MEME numbers the motifs consecutively from one as it finds them. MEME usually finds the most statistically significant motifs first. Each motif describes a pattern of a fixed width--no gaps are allowed in MEME motifs. MEME estimates the number of places the motif occurs in the training set. This need not be an integer value.

Simplified Motif Letter-probability Matrix

MEME motifs are represented by letter-probability matrices that

specify the probability of each possible letter appearing at each possible position in an occurrence of the motif. In order to make it easier to see which letters are most likely in each of the columns of the motif, the simplified motif shows the letter probabilities multiplied by 10 rounded to the nearest integer. Zeros are replaced by ":" (the colon) for readability.

Information Content Diagram

The information content diagram provides an idea of which positions in the motif are most highly conserved. Each column (position) in a motif can be characterized by the amount of information it contains (measured in bits). Highly conserved positions in the motif have high information; positions where all letters are equally likely have low information. The diagram is printed so that each column lines up with the same column in the simplified motif letter-probability matrix above it. Summing the information content for each position in the motif gives the total information content of the motif (shown in parentheses to the left of the diagram). This gives a measure of the usefulness of the motif for database searches. For a motif to be useful for database searches, it must as a rule contain at least $\log_2(N)$ bits of information where N is the number of sequences in the database being searched. For example, to effectively search a database containing 100,000 sequences for occurrences of a single motif, the motif should have an IC of at least 16.6 bits. Motifs with lower information content are still useful when a family of sequences shares more than one motif since they can be combined in multiple motif searches (using MAST).

Multilevel Consensus Sequence

The multilevel consensus sequence corresponding to the motif is an aid in remembering and understanding the motif. It is calculated from the motif letter-probability matrix as follows. Separately for each column of the motif, the letters in the alphabet are sorted in decreasing order by the probability with which they are expected to occur in that position of motif occurrences. The sorted letters are then printed vertically with the most probable letter on top. Only letters with probabilities of 0.2 or higher at that position in the motif are printed. As an example, the multilevel consensus sequence of motif 2 in the sample output is:

```
Multilevel      LITGAASGIG
consensus      V  GS
sequence       G
```

This multilevel consensus sequence says several things about the motif. First, the most likely form of the motif can be read from the top line as LITGAASGIG. Second, that only letter L has probability more than 0.2 in position 1 of the motif, both I and V have probability greater than 0.2 in position 2, etc. Third, a rough approximation of the motif can be made by converting the multilevel consensus sequence into the Prosite signature L-[IV]-T-G-[AG]-[ASG]-S-G-I-G. The multilevel consensus sequence is printed so that each column lines up with the same column in the simplified motif and information content diagrams above it.

Motif in BLOCKS or FASTA format

For use with the BLOCKS (<http://www.blocks.fhcrc.org/blocks>) tools, MEME prints the sites in the sequences which were used to construct the motif in BLOCKS format.

The sites reported are, for the different model types:

```
OOPS          position with highest z_i in each sequence,
ZOOPS         position with highest z_i > 0.5 in each sequence,
TCM           all positions with z_i > 0.5,
```

where z_i is the probability that an occurrence of the motif starts at position i in the sequence given the sequence and the motif model. If you include the `-print_fasta` switch on the command line, MEME prints the motif sites in FASTA format instead of BLOCKS format.

Possible Examples of the Motif

As a further aid in understanding the motif, MEME displays a list of possible occurrences of the motif in the training set. This list is made by converting the motif letter-probability matrix into a position-dependent scoring matrix (log-odds matrix) and using that to compute a match score between each position in the training set and the motif. All positions which score above a threshold score are listed. (The threshold score is chosen by MEME such that the expected number of non-motif positions listed in error will equal the number of actual motif positions not listed.) The format of the list is sequence name, starting position of the (putative) occurrence, match score of the position, and the actual sequence including the ten positions before and after the motif occurrence ('site').

Position-dependent Scoring Matrix

The position-dependent scoring matrix corresponding to the motif is printed for use by database search programs such as MAST. This matrix is a log-odds matrix calculated by taking the log (base 2) of the ratio p/f at each position in the motif where p is the probability of a particular letter at that position in the motif, and f is the average frequency of that letter in the non-redundant database as of 9/22/96. The scoring matrix is printed "sideways"--columns correspond to the letters in the alphabet (in the same order as shown in the simplified motif) and rows corresponding to the positions of the motif, position one first. The scoring matrix is preceded by a line starting with "log-odds matrix:" and containing the length of the alphabet, width of the motif, number of characters in the training set and the scoring threshold used in the list of possible motif examples.

Motif Letter-probability Matrix

The motif itself is a position-dependent letter-probability matrix giving, for each position in the pattern, the probabilities of each possible letter occurring there. The letter-probability matrix is printed "sideways"--columns correspond to the letters in the alphabet (in the same order as shown in the simplified motif) and rows corresponding to the positions of the motif, position one first. The motif is preceded by a line starting with "letter-probability matrix:" and containing the length of the alphabet, width of the motif and number of characters in the training set.

MOTIF 1 width = 11 sites = 148.0

Palindrome

Simplified A 38aa95:::1
motif letter- C 1:::15
probability G 51:::1
matrix T 1:::59aa83

bits 2.2
2.0
1.7
1.5 ** **
Information 1.3 *** **
content 1.1 *** **
(12.9 bits) 0.9 **** **
0.7 *****
0.4 *****
0.2 *****
0.0 -----

Multilevel GAAAAATTTTC
consensus A T T
sequence

Motif 1 in BLOCKS format

BL MOTIF 1 width=11 seqs=148
YLR397C (698) GAAAAATTTTAT 0.514769
YKR092C (791) ATACATAGCAA 0.263286
YJR071W (496) GCAAGTTTTCC 0.85588
YNL075W (652) AAAAAATTTTA 0.872788
YNL114C (353) GAAAAATTTTC 0.957966
YNL113W (689) AAAAAATTTTC 0.657796
YNL022C (255) GAAAATCTTTG 0.829732
YLR186W (660) GAAAAATTATT 0.51783
YDR184C (643) GAAAAATTTCC 0.821609
YPL211W (661) GAAAAATTTTG 0.80729
YFL002C (697) AAAAATTTTTC 0.852861
YPR144C (791) GTCAAAGAATA 0.330543
YHR196W (634) GAAAATTTTTT 0.663371
YIR012W (699) GCAAAATTTTC 0.805513
YLR401C (674) GAAAAGTTTCA 0.774231
YMR093W (791) TAGAAATAAAA 0.473028
YDL167C (791) TACAGAAATTA 0.498885
YDR365C (791) AAAATTGAAGA 0.456017
YCL054W (666) GAAAAATTTTT 0.625545
YNL061W (657) AAAAAATTTTC 0.886363
YOR294W (664) AAAAATTTTTC 0.872625
YOR145C (665) AAAAATTTTTC 0.695382
YHR169W (651) AAAAATTTTTT 0.593752
YJL122W (683) CAAAATTTTTT 0.53313
YNL141W (791) AAAAAAATAA 0.407182
YER110C (791) AAGTAGTATAA 0.260958
YJR041C (644) GAAAAATTTCA 0.929189
YDR341C (674) AAAAAATTTTT 0.692634
YOR168W (687) GAAAAATTTGA 0.528453
YMR308C (791) AGCCATCGCTA 0.499165
YDR385W (791) TAATTGCAAGA 0.444338
YGR264C (791) TACAACAAGCA 0.446329
YPL226W (651) AAAAAATTTTC 0.950765
YDR091C (614) AAAAAATTTTC 0.886372

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|---------|--------|---------------|----------|
| YLR249W | (611) | GAAAAATTTTTT | 0.907132 |
| YGL120C | (662) | GAAAAATTTTC | 0.988956 |
| YMR217W | (576) | GAAAAATTTTTT | 0.899532 |
| YPL183C | (202) | AGAAATTTTTC | 0.866371 |
| YNL313C | (791) | TTGCAAAATTA | 0.256457 |
| YJL109C | (683) | AAAAAATTTTC | 0.886539 |
| YCL037C | (716) | GAAAAATTTTTT | 0.605026 |
| YMR229C | (623) | GAAAAATTTTGT | 0.52899 |
| YBR084W | (619) | GAAATTTTTTTT | 0.64112 |
| YHR020W | (539) | GAAAAATTTTTC | 0.931196 |
| YMR049C | (682) | GAAAAATTTTTT | 0.86313 |
| YDR412W | (662) | TGAAATTTTTTC | 0.92563 |
| YDR312W | (791) | TTTGGAACTAA | 0.457858 |
| YKL078W | (791) | AGACATTATCA | 0.356741 |
| YOR243C | (791) | GTTGCATGCCA | 0.498852 |
| YDR465C | (679) | TAAAAATTTTTTC | 0.957145 |
| YFR001W | (589) | GCAAATTTTTA | 0.603365 |
| YDR361C | (791) | ACTCACAAATA | 0.300089 |
| YKL099C | (648) | GAAATTTTTTTT | 0.62689 |
| YBL028C | (693) | GAAAAATTTTTC | 0.972982 |
| YIL127C | (676) | GAAAAATTTTGT | 0.80687 |
| YHR066W | (651) | TGAAATTTTTTC | 0.786067 |
| YHR197W | (688) | GAAAAATTTTTC | 0.967044 |
| YOR272W | (631) | AAAAATTTTTTC | 0.571358 |
| YJR070C | (646) | GAAAAATTTTTC | 0.745777 |
| YLR222C | (686) | GAAAAATTTTCT | 0.712813 |
| YGR123C | (791) | TATCTCGAATA | 0.400361 |
| YKL181W | (526) | AAAAAATTTTTTC | 0.881012 |
| YCL059C | (662) | GAAAAATTTTTT | 0.84024 |
| YKR081C | (660) | GAAAAATTTTTTC | 0.989948 |
| YKL021C | (16) | GAAAAATATTTA | 0.544487 |
| YNL110C | (647) | GAAAAATTTTTC | 0.932814 |
| YLR221C | (683) | TAAAAATTTTGC | 0.793811 |
| YDR413C | (791) | CCCGACGATAA | 0.211375 |
| YJL148W | (578) | AAAAAATTTTTC | 0.661656 |
| YCR016W | (791) | TTACAATTAAA | 0.493019 |
| YLR003C | (704) | GAAAAATTTTTG | 0.849796 |
| YHR052W | (659) | AAAAATTTTTTC | 0.697892 |
| YKL009W | (791) | TAGTTGAATCA | 0.424036 |
| YNL002C | (661) | GAAAAATTTTTT | 0.90889 |
| YDR101C | (791) | TAAAACTATCA | 0.421418 |
| YDR324C | (766) | GAAAAATTTTTTC | 0.985663 |
| YDR083W | (759) | GAAAAATTTTTG | 0.787542 |
| YGL099W | (665) | GGAAATTTTTTC | 0.894945 |
| YGL111W | (702) | GAAAAATTTTTG | 0.916035 |
| YDL051W | (610) | AAAAAATTTTTTC | 0.921265 |
| YMR131C | (641) | GAAAAATTTTTT | 0.955475 |
| YPR110C | (791) | GAAAGAAGATA | 0.487802 |
| YMR290C | (634) | GAAAAATTTTTT | 0.967736 |
| YBL039C | (630) | CAAATTTTTTC | 0.840552 |
| YML093W | (684) | GAAAAATTTTTTC | 0.988233 |
| YGL078C | (791) | GGGGATTAAAA | 0.479487 |
| YLL008W | (662) | AAAAAATTTTTTC | 0.941825 |
| YER006W | (791) | ATATCATAAAA | 0.354878 |
| YDR496C | (684) | GAAAAATTTTTT | 0.95414 |
| YGR145W | (695) | GAAAAATTTTGA | 0.65909 |
| YGR245C | (639) | GAAAAATTTTAA | 0.508676 |
| YNL175C | (671) | TGAAATTTTTTC | 0.776306 |
| YNL174W | (678) | GAATAATTTTTTC | 0.804531 |
| YLR196W | (654) | GAAAAATTTGT | 0.635285 |
| YOR206W | (649) | GAAAAATTTTTTC | 0.971913 |
| YGR103W | (659) | GAAAAATTTTTT | 0.643969 |
| YLR276C | (601) | AAAAATTTTTTT | 0.67697 |
| YGR160W | (58) | CCAAATTTTTTC | 0.817628 |
| YNL182C | (791) | GGACGATAAAA | 0.331264 |
| YLR409C | (666) | GAAAAATTTTTG | 0.787508 |
| YLR129W | (685) | GAAAAATTTTTTC | 0.928704 |
| YLR002C | (673) | GAAAAATTTTAT | 0.636409 |
| YNL132W | (444) | GAAAAATTTTTT | 0.543294 |
| YNL248C | (655) | GAAAAATTTTTT | 0.86844 |
| YGR128C | (791) | AAGATTCAAAA | 0.458489 |

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|---------|--------|--------------|----------|
| YLR009W | (552) | GAAAAATTTTC | 0.987284 |
| YNL062C | (607) | GAAAAATTTTTC | 0.88459 |
| YGL171W | (682) | GAAAAATTTTTC | 0.707488 |
| YKR056W | (791) | CAAAGTCATTA | 0.328562 |
| YBR247C | (664) | GAAAAATTTTTC | 0.925809 |
| YJR002W | (707) | AGAAAAATTTTC | 0.723032 |
| YLR198C | (54) | GAAAACCTTCC | 0.636794 |
| YOR309C | (136) | GAGAATTATTC | 0.793211 |
| YLR197W | (689) | GAAAAATTTTTC | 0.526471 |
| YLR175W | (791) | GATATACACAA | 0.487371 |
| YOR310C | (665) | GAAAAATTTTTC | 0.876655 |
| YLR449W | (716) | GAAAAATTTTAC | 0.707885 |
| YHR170W | (641) | GAAAAATTTTTC | 0.816193 |
| YBL024W | (676) | GAAAAATTTTAG | 0.889199 |
| YBR143C | (631) | GAAAAATTTTTC | 0.700742 |
| YDR165W | (791) | GTGTTTTACAA | 0.461752 |
| YDR398W | (614) | AAAAAATTTTTC | 0.795659 |
| YPR190C | (774) | GAAAAATTTTTC | 0.726685 |
| YCR072C | (673) | GAAAAATTTTTC | 0.97779 |
| YJL069C | (713) | AAAAAAATTTTC | 0.653787 |
| YDL201W | (663) | GAAAAATTTTTC | 0.801568 |
| YHR065C | (259) | AAAAAATTTTTC | 0.583689 |
| YLL011W | (693) | GAAAAATTTTGA | 0.725291 |
| YER126C | (651) | GAAAAATTTTTC | 0.885861 |
| YDR087C | (692) | AAAAAATTGTC | 0.680704 |
| YDL153C | (660) | GAAAAATTTTTC | 0.984717 |
| YPR142C | (459) | AAAAAATTTTTC | 0.844435 |
| YPR143W | (680) | GGAAAAATTTTC | 0.640533 |
| YPL146C | (652) | AAAAAATTTTTC | 0.831773 |
| YKL172W | (688) | GAAAAATTTTTC | 0.96287 |
| YNL308C | (791) | CCTAAATTCAA | 0.322124 |
| YKL082C | (791) | GGAGACTGAGA | 0.411096 |
| YGR272C | (697) | AAAAAATTTTTC | 0.949842 |
| YGL029W | (676) | ATAAAATTTTTC | 0.738402 |
| YPL266W | (640) | GAAAAATTTTTC | 0.836018 |
| YOL077C | (640) | GAAAAATTTTTC | 0.976791 |
| YBR142W | (667) | AAAAACTTTTTC | 0.580082 |
| YBR034C | (679) | GAAAAATTTTTC | 0.802354 |
| YLR435W | (622) | AAAAACTTTTTC | 0.800128 |
| YGR187C | (638) | TCAAATTTTTC | 0.531908 |
| YHR089C | (791) | AAAGAAAATAA | 0.49582 |
| YCR057C | (646) | GAAAAATTTTTC | 0.726831 |
| YBL068W | (780) | GAAAAATTTTTC | 0.599679 |

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Possible examples of motif 1 in the training set

| Sequence name | strand | Start | Score | Site |
|---------------|--------|-------|-------|-------------------------------------|
| YLR397C | w53 | 697 | 10.81 | GACTATTGTA AGAAAAATTTTTC TATTGCCTCA |
| YLR397C | c53 | 697 | 11.00 | TGAGGCAATA TAAAATTTTCT TACAATAGTC |
| YLR397C | w53 | 698 | 11.11 | ACTATTGTAA GAAAAATTTTAT ATTGCCTCAT |
| YLR397C | c53 | 698 | 11.16 | ATGAGGCAAT ATAAAATTTTTC TTACAATAGT |
| YNL075W | w53 | 652 | 13.66 | TGAAAAATAT AAAAAATTTTTC TCCCGGAAAT |
| YNL075W | c53 | 652 | 13.88 | ATTTCCGGGA TAAAATTTTTC ATATTTTTC |
| YNL075W | w53 | 653 | 10.15 | GAAAAATATA AAAAAATTTTAT CCCGGAAATG |
| YNL075W | c53 | 653 | 10.23 | CATTTCCGGG ATAAAATTTTTC TATATTTTTC |
| YNL114C | w53 | 353 | 17.09 | TAAACTGAAG GAAAAATTTTTC TGCGATGAGC |
| YNL114C | c53 | 353 | 17.16 | GCTCATCGCA GAAAAATTTTTC CTTCAGTTTA |
| YNL114C | w53 | 354 | 12.40 | AAACTGAAGG AAAAAATTTTCT GCGATGAGCA |
| YNL114C | c53 | 354 | 12.35 | TGCTCATCGC AGAAAAATTTTTC CCTTCAGTTT |
| YNL114C | w53 | 423 | 11.23 | AAAAAAAGAA ATAAAATTTTTC AATCATTC |
| YNL114C | c53 | 423 | 11.04 | TTGAATGATT GAAAAATTTTAT TTCTTTTTC |
| YNL113W | w53 | 689 | 11.81 | GCTGGAAAAA AAAAAATTTTTC AAAAGAAAC |
| YNL113W | c53 | 689 | 12.07 | GTTTTCTTTT GAAATTTTTC TTTTCCAGC |
| YNL113W | w53 | 690 | 10.78 | CTGGAAAAA AAAAAATTTTTC AAAGAAAC |
| YNL113W | c53 | 690 | 11.04 | GGTTTTCTTT TGAAATTTTTC TTTTCCAG |
| YDR184C | w53 | 567 | 10.32 | TGATATAAAT CAAATATTTTTC TGTCATTTT |
| YDR184C | c53 | 567 | 10.16 | AAAAATGACA GAAAAATTTTTC ATTTATATCA |
| YDR184C | w53 | 643 | 14.21 | GCGATGAGAT GAAAAATTTTTC AAAAAACATG |

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|---------|-----|-----|-------|-------------|--------------|-------------|
| YDR184C | c53 | 643 | 14.31 | CATGTTTTTT | GGAAATTTTTC | ATCTCATCGC |
| YDR184C | w53 | 682 | 11.73 | TATTTTCAAT | GAAAAATTTCA | GAGGGCTAGT |
| YDR184C | c53 | 682 | 11.96 | ACTAGCCCTC | TGAAATTTTTT | ATTGAAAAATA |
| YPL211W | w53 | 564 | 11.73 | GAATAAAAGT | GAAAAATTTCA | AAGCCAAAAG |
| YPL211W | c53 | 564 | 11.96 | CTTTTGCTT | TGAAATTTTTT | ACTTTTAGTC |
| YPL211W | w53 | 660 | 10.96 | TGTACGGTAA | TGAAATTTTTT | GAAATATGCG |
| YPL211W | c53 | 660 | 10.85 | CGCATATTC | AAAAATTTTCA | TTACCGTACA |
| YPL211W | w53 | 661 | 14.47 | GTACGGTAAT | GAAAAATTTTTG | AAATATGCGA |
| YPL211W | c53 | 661 | 14.48 | TCGCATATTT | CAAAAATTTTC | ATTACCGTAC |
| YFL002C | w53 | 696 | 13.55 | TTTTTCGCTT | CAAAAATTTTTT | CACTGAAAAA |
| YFL002C | c53 | 696 | 13.51 | TTTTTCAGTG | AAAAATTTTTT | AAAGCGAAAA |
| YFL002C | w53 | 697 | 16.20 | TTTTTCGTTT | AAAAATTTTTT | ACTGAAAAAC |
| YFL002C | c53 | 697 | 16.16 | GTTTTTCAGT | GAAAAATTTTTT | GAAAGCGAAA |
| YPR144C | w53 | 607 | 10.56 | AAGAAAAAGA | AAAAAGTTTTT | CAGCACTTCT |
| YPR144C | c53 | 607 | 10.61 | AGAAGTGCTG | AAAAACTTTTT | TCTTTTCTT |
| YPR144C | w53 | 608 | 10.68 | AGAAAAAGAA | AAAAAGTTTTT | AGCACTTCTC |
| YPR144C | c53 | 608 | 10.61 | GAGAAGTGCT | GAAAAACTTTT | TTCTTTTCT |
| YPR144C | w53 | 668 | 11.96 | GGGCTATTCT | TGAAATTTTTT | ACTAAAAAT |
| YPR144C | c53 | 668 | 11.73 | AAATTTTAGT | GAAAAATTTCA | AGAATAGCCC |
| YPR144C | w53 | 681 | 11.93 | AATTTTTCAC | TAAAAATTTCC | AACTGAAAAA |
| YPR144C | c53 | 681 | 11.77 | TTTCTCAGTT | GGAAAAATTTA | GTGAAAAATT |
| YHR196W | w53 | 633 | 10.71 | CAACGAGGTG | CGAAAAATTTTT | TTCTTCTAAA |
| YHR196W | c53 | 633 | 10.63 | TTTAGAAGAA | AAAAATTTTCG | CACCTCGTTG |
| YHR196W | w53 | 634 | 16.23 | AACGAGGTGC | GAAAAATTTTTT | TCTTCTAAG |
| YHR196W | c53 | 634 | 16.13 | CTTTAGAAGA | AAAAATTTTTT | GCACCTCGTT |
| YHR196W | w53 | 635 | 11.11 | ACGAGGTGCG | AAAAATTTTTT | CTTCTAAGG |
| YHR196W | c53 | 635 | 10.89 | CCTTTAGAAG | AAAAAAATTTT | CGCACCTCGT |
| YHR196W | w53 | 670 | 14.39 | AAGAAAAACAT | GAAAAATTTTTG | AAAAATTTAA |
| YHR196W | c53 | 670 | 14.56 | TTAAATTTTT | CAAAAATTTTC | ATGTTTTCTT |
| YHR196W | w53 | 671 | 9.80 | AGAAAAACATG | AAAAATTTTGA | AAAAATTTAAC |
| YHR196W | c53 | 671 | 10.00 | GTAAATTTTT | TCAAAAATTTTT | CATGTTTTCT |
| YHR196W | c53 | 680 | 9.84 | CATCTCATCG | TTAAATTTTTT | AAAAATTTTC |
| YIR012W | w53 | 9 | 10.47 | TGATGCGT | GCAAATTTTCC | AAACGTGGTG |
| YIR012W | c53 | 9 | 10.31 | CACCACGTTT | GGAAAAATTTG | ACGCATCA |
| YIR012W | w53 | 699 | 13.27 | TCTTTTTCTG | GCAAAAATTTT | ACTATGAATA |
| YIR012W | c53 | 699 | 13.23 | TATTCATAGT | GAAAAATTTTC | CAGAAAAAGA |
| YMR093W | w53 | 666 | 10.96 | AATTATCTTT | TGAAAAATTTTT | GGAATAACTG |
| YMR093W | c53 | 666 | 10.85 | CAGTTATTTCC | AAAAATTTTCA | AAAGATAATT |
| YMR093W | w53 | 667 | 14.47 | ATTATCTTTT | GAAAAATTTTTG | GAATAACTGA |
| YMR093W | c53 | 667 | 14.48 | TCAGTTATTC | CAAAAATTTTC | AAAAATTTAA |
| YMR093W | w53 | 686 | 14.39 | TGGAATAACT | GAAAAATTTTTG | AAAACTTTCG |
| YMR093W | c53 | 686 | 14.56 | CGAAAGTTTT | CAAAAATTTTC | AGTTATTTCCA |
| YMR093W | w53 | 687 | 9.80 | GGAATAACTG | AAAAATTTTGA | AAACTTTTCGA |
| YMR093W | c53 | 687 | 10.00 | TCGAAAGTTT | TCAAAAATTTTT | CAGTTATTTCC |
| YDL167C | w53 | 686 | 16.16 | AGTTTAAAGT | GAAAAATTTTTT | CAACACATAC |
| YDL167C | c53 | 686 | 16.20 | GTATGTGTTG | AAAAATTTTTT | ACTTTAAACT |
| YDL167C | w53 | 687 | 16.20 | GTTTAAAGTG | AAAAATTTTTT | AACACATACA |
| YDL167C | c53 | 687 | 16.16 | TGTATGTGTT | GAAAAATTTTTT | CACHTTTAAC |
| YDR365C | w53 | 646 | 11.71 | ATTGACGTTT | CGAAATTTTTT | AGTTACAGAA |
| YDR365C | c53 | 646 | 11.51 | TTCTGTAAC | GAAAAATTTTCG | GAACGTCAAT |
| YDR365C | w53 | 664 | 12.77 | TTCAAGTTACA | GAAAAAATTTT | ATCTCATCTC |
| YDR365C | c53 | 664 | 13.00 | GAGATGAGAT | GAAATTTTTT | TGTAACGTAA |
| YDR365C | w53 | 665 | 10.78 | TCAGTTACAG | AAAAAATTTCA | TCTCATCTCA |
| YDR365C | c53 | 665 | 11.04 | TGAGATGAGA | TGAAATTTTTT | CTGTAACGTG |
| YDR365C | w53 | 746 | 11.42 | TGTGGGTCCG | GAATATTTTTT | AAGACATTTT |
| YDR365C | c53 | 746 | 11.19 | GAAATGTCTT | GAAAAATATT | CGGACCCACA |
| YCL054W | w53 | 357 | 13.28 | AAAGGGTATT | GAAAAATTTTCT | AGAACCAGAA |
| YCL054W | c53 | 357 | 13.35 | TTCTGGTTCT | AGAAATTTTTT | AATACCCTTT |
| YCL054W | w53 | 666 | 16.16 | CTTTTTGTCT | GAAAAATTTTTT | TGCGATGCCC |
| YCL054W | c53 | 666 | 16.20 | GGGCATCGCA | AAAAATTTTTT | AGACAAAAAG |
| YCL054W | w53 | 667 | 15.27 | TTTTTGTCTG | AAAAATTTTTT | GCGATGCCCA |
| YCL054W | c53 | 667 | 15.20 | TGGGCATCGC | AAAAATTTTTT | CAGACAAAAA |
| YNL061W | w53 | 607 | 11.96 | TTTTTTTTTGA | TGAAATTTTTT | AGATTTTACA |
| YNL061W | c53 | 607 | 11.73 | TGTAATACT | GAAAAATTTTCA | TCAAAAAAAA |
| YNL061W | w53 | 656 | 10.89 | ACGTTTTCTG | AAAAAATTTT | CATCTCATCG |
| YNL061W | c53 | 656 | 11.11 | CGATGAGATG | AAAAATTTTTT | CAGAAAACGT |
| YNL061W | w53 | 657 | 16.13 | CGTTTTCTGA | AAAAAATTTT | ATCTCATCGC |
| YNL061W | c53 | 657 | 16.23 | GCGATGAGAT | GAAAAATTTTTT | TCAGAAAACG |
| YNL061W | w53 | 658 | 10.85 | GTTTTCTGAA | AAAAAATTTTCA | TCTCATCGCA |
| YNL061W | c53 | 658 | 10.96 | TGCGATGAGA | TGAAATTTTTT | TTCAGAAAAC |
| YOR294W | w53 | 663 | 13.81 | ACCCTACGCA | TAAAAATTTTTT | CCAAGTGATG |

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| YOR294W | c53 | 663 | 13.73 | CATCACTTGG | AAAAATTTTAA | TGCGTAGGGT |
| YOR294W | w53 | 664 | 16.20 | CCCTACGCAT | AAAAATTTTTC | CAAGTGATGA |
| YOR294W | c53 | 664 | 16.16 | TCATCACTTG | GAAAAATTTT | ATGCGTAGGG |
| YOR145C | w53 | 663 | 11.85 | GTGCGAGCGG | GAAAAATTTT | TCTTCTTCC |
| YOR145C | c53 | 663 | 12.04 | GGAAAGAAGA | AAAAATTTTTC | CCGCTCGCAC |
| YOR145C | w53 | 664 | 15.20 | TGCGAGCGGG | AAAAATTTT | CTTCTTCTC |
| YOR145C | c53 | 664 | 15.27 | AGGAAAGAAG | AAAAATTTT | CCCGCTCGCA |
| YOR145C | w53 | 665 | 16.20 | GCGAGCGGGA | AAAAATTTTTC | TTCTTCTCT |
| YOR145C | c53 | 665 | 16.16 | AAGGAAAGAA | GAAAAATTTT | TCCCGCTCGC |
| YHR169W | w53 | 432 | 10.85 | CCTACAGGTT | GAGAAATTTTC | CAAAAGTCAG |
| YHR169W | c53 | 432 | 10.89 | CTGACTTTTG | GAAAAATTTTC | AACCTGTAGG |
| YHR169W | w53 | 433 | 10.48 | CTACAGGTTG | AGAAATTTTCC | AAAAGTCAGG |
| YHR169W | c53 | 433 | 10.43 | CCTGACTTTT | GGAAATTTCT | CAACCTGTAG |
| YHR169W | w53 | 650 | 10.89 | AGAAGAGGAA | AAAAAAATTTT | TACCTCATCG |
| YHR169W | c53 | 650 | 11.11 | CGATGAGGTA | AAAAATTTT | TTCTCTTCT |
| YHR169W | w53 | 651 | 15.20 | GAAGAGGAAA | AAAAAAATTTT | ACCTCATCGC |
| YHR169W | c53 | 651 | 15.27 | GCGATGAGGT | AAAAATTTT | TTTCTCTTC |
| YHR169W | w53 | 652 | 13.73 | AAGAGGAAAA | AAAAATTTTAA | CCTCATCGCG |
| YHR169W | c53 | 652 | 13.81 | CGCGATGAGG | TAAAAATTTT | TTTTCTCTT |
| YJL122W | w53 | 682 | 12.35 | TGATCTCATC | GCAAAATTTT | TTTCGCTAAA |
| YJL122W | c53 | 682 | 12.27 | TTTAGCGAAA | AAAAATTTTGC | GATGAGATCA |
| YJL122W | w53 | 683 | 13.63 | GATCTCATCG | CAAAATTTT | TTTCGCTAAA |
| YJL122W | c53 | 683 | 13.43 | TTTTAGCGAA | AAAAATTTTGC | CGATGAGATC |
| YJL122W | w53 | 684 | 11.11 | ATCTCATCGC | AAAAATTTT | TCGCTAAAAT |
| YJL122W | c53 | 684 | 10.89 | ATTTTAGCGA | AAAAAAATTTT | GCGATGAGAT |
| YNL141W | w53 | 373 | 9.89 | GCATGATAGC | AAGAAATTTTC | TTTAAGAAAG |
| YNL141W | c53 | 373 | 9.96 | CTTCTTAAA | GAAAAATTTCT | GCTATCATGC |
| YER110C | w53 | 359 | 9.72 | TCAGAGTTTT | TAAATTTT | TTTTTTT |
| YJR041C | w53 | 644 | 11.73 | TGCGCGATCT | GAAAAATTTCA | CTTAGCTCAT |
| YJR041C | c53 | 644 | 11.96 | ATGAGCTAAG | TGAAATTTTTC | AGATCGCGCA |
| YDR341C | w53 | 673 | 10.89 | ATGCGAAGCG | AAAAAAATTTT | TAGCTTCAAT |
| YDR341C | c53 | 673 | 11.11 | ATTGAAGCTA | AAAAATTTT | CGTTCGCAT |
| YDR341C | w53 | 674 | 15.20 | TGCGAAGCGA | AAAAAAATTTT | AGCTTCAATT |
| YDR341C | c53 | 674 | 15.27 | AATTGAAGCT | AAAAATTTT | TCGCTTCGCA |
| YDR341C | w53 | 675 | 13.73 | GCGAAGCGAA | AAAAATTTTAA | GCTTCAATT |
| YDR341C | c53 | 675 | 13.81 | AAATTGAAGC | TAAAAATTTT | TTTCGCTTCG |
| YOR168W | c53 | 631 | 9.72 | ACTTTTTTGA | TAAATTTT | TTTCTTGTC |
| YOR168W | w53 | 632 | 10.08 | ACCAAGAAAA | AAAAATTTTAT | CAAAAAAGTG |
| YOR168W | c53 | 632 | 10.30 | CACTTTTTTG | ATAAATTTT | TTTTCTGGT |
| YOR168W | w53 | 687 | 10.68 | CTGTACAAAT | GAAAAATTTGA | CATCGCAGGG |
| YOR168W | c53 | 687 | 11.00 | CCCTGCGATG | TCAAATTTTTC | ATTTGTACAG |
| YMR308C | w53 | 539 | 16.16 | TGCAGAAACT | GAAAAATTTT | CATTTTCTAC |
| YMR308C | c53 | 539 | 16.20 | GTAGAAAAATG | AAAAATTTTTC | AGTTTCTGCA |
| YMR308C | w53 | 540 | 16.20 | GCAGAAACTG | AAAAATTTTTC | ATTTTCTACC |
| YMR308C | c53 | 540 | 16.16 | GGTAGAAAAAT | GAAAAATTTT | CAGTTTCTGC |
| YDR385W | w53 | 628 | 10.89 | ACGAAGAGAG | AAAAAAATTTT | TTCTTAAAG |
| YDR385W | c53 | 628 | 11.11 | CTTTTAAAGAA | AAAAATTTT | CTCTTCTCGT |
| YDR385W | w53 | 629 | 15.20 | CGAAGAGAGA | AAAAAAATTTT | TCTTAAAGT |
| YDR385W | c53 | 629 | 15.27 | ACTTTTAAAGA | AAAAATTTT | TCTCTCTCG |
| YDR385W | w53 | 630 | 15.27 | GAAGAGAGAA | AAAAATTTT | CTTAAAGTT |
| YDR385W | c53 | 630 | 15.20 | AACTTTTAAAG | AAAAAAATTTT | TTCTCTCTTC |
| YDR385W | w53 | 631 | 12.04 | AAGAGAGAAA | AAAAATTTTTC | TTAAAAGTTT |
| YDR385W | c53 | 631 | 11.85 | AAACTTTTAA | GAAAAATTTT | TTTCTCTCTT |
| YDR385W | w53 | 644 | 9.75 | ATTTTCTT | AAAAGTTTTT | TTTCTCTCTT |
| YDR385W | c53 | 644 | 9.65 | ACAAAATGAA | AAAAAACTTTT | AAGAAAAAAT |
| YGR264C | w53 | 462 | 11.19 | ATTCAACTTT | GAAAAATATTC | TAGTCAAAGC |
| YGR264C | c53 | 462 | 11.42 | GCTTTGACTA | GAATATTTTTC | AAAAGTTGAAT |
| YGR264C | w53 | 640 | 12.77 | TTCCGAGGCA | GAAAAATTTTC | TGTACGCAAC |
| YGR264C | c53 | 640 | 13.00 | GTTGCGTACA | GAAATTTTTT | TGCCTCCGAA |
| YGR264C | w53 | 641 | 12.32 | TCGGAGGCAG | AAAAATTTTCT | GTACGCCAAT |
| YGR264C | c53 | 641 | 12.43 | AGTTGCGTAC | AGAAATTTT | CTGCCCTCGA |
| YGR264C | w53 | 698 | 10.69 | AAAAGACGAT | GACAAATTTTC | TTTCGATGCT |
| YGR264C | c53 | 698 | 10.64 | AGACATCGAA | GAAAAATTTGTC | ATCGTCTTTT |
| YPL226W | w53 | 650 | 10.89 | TCAAGGTGGA | AAAAAAATTTT | CAGCAGCATC |
| YPL226W | c53 | 650 | 11.11 | GATGCTGCTG | AAAAATTTT | TCCACCTTGA |
| YPL226W | w53 | 651 | 16.13 | CAAGGTGGAA | AAAAATTTTTC | AGCAGCATCG |
| YPL226W | c53 | 651 | 16.23 | CGATGCTGCT | GAAAAATTTT | TTCCACCTTG |
| YPL226W | w53 | 652 | 10.85 | AAGGTGGAAA | AAAAATTTTCA | GCAGCATCGC |
| YPL226W | c53 | 652 | 10.96 | GCGATGCTGC | TGAAAAATTTT | TTTCCACCTT |
| YDR091C | w53 | 613 | 11.85 | TTTTGCAACT | GAAAAATTTT | CTATTTTTTT |
| YDR091C | c53 | 613 | 12.04 | AAAAAAATAG | AAAAATTTTTC | AGTTGCAAAA |

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| YDR091C | w53 | 614 | 16.13 | TTTGCAACTG | AAAAAATTTTC | TATTTTTTTT |
| YDR091C | c53 | 614 | 16.23 | AAAAAAAATA | GAAAAATTTTT | CAGTTGCAAA |
| YDR091C | w53 | 615 | 12.40 | TTGCAACTGA | AAAAATTTTCT | ATTTTTTTTC |
| YDR091C | c53 | 615 | 12.35 | GAAAAAAAAT | AGAAAAATTTTT | TCAGTTGCAA |
| YLR249W | w53 | 610 | 10.96 | TTTGCGTTGG | TGAAAAATTTTT | TCGCTTCCTC |
| YLR249W | c53 | 610 | 10.85 | GAGGAAGCGA | AAAAATTTTCA | CCAACGCAAA |
| YLR249W | w53 | 611 | 16.23 | TTGCGTTGGT | GAAAAATTTTT | CGCTTCCTCG |
| YLR249W | c53 | 611 | 16.13 | CGAGGAAGCG | AAAAAATTTTC | ACCAACGCAA |
| YLR249W | w53 | 612 | 12.04 | TGCGTTGGTG | AAAAATTTTTC | GCTTCCTCGA |
| YLR249W | c53 | 612 | 11.85 | TCGAGGAAGC | GAAAAAATTTT | CACCAACGCA |
| YLR249W | w53 | 694 | 9.70 | CCTTTTGCAT | CAAAAATTTGT | AGAATATCTC |
| YGL120C | w53 | 662 | 17.09 | CGGTGCCTCT | GAAAAATTTTC | AAATGCGAGA |
| YGL120C | c53 | 662 | 17.16 | TCTCGCATT | GAAAAATTTTC | AGAGGCACCG |
| YGL120C | w53 | 663 | 10.85 | GGTGCCTCTG | AAAAATTTTCA | AATGCGAGAT |
| YGL120C | c53 | 663 | 10.96 | ATCTCGCATT | TGAAAAATTTTT | CAGAGCGACC |
| YMR217W | w53 | 575 | 10.96 | TTGCAGGAAA | TGAAAAATTTTT | TTTTTCTTTG |
| YMR217W | c53 | 575 | 10.85 | CAAAGAAAAA | AAAAATTTTCA | TTTCTGCAA |
| YMR217W | w53 | 576 | 16.23 | TGCAGGAAAT | GAAAAATTTTT | TTTTTCTTTG |
| YMR217W | c53 | 576 | 16.13 | CCAAAGAAAA | AAAAAATTTTC | ATTTCTGCA |
| YMR217W | w53 | 577 | 11.11 | GCAGGAAATG | AAAAATTTTTC | TTTTTCTTGC |
| YMR217W | c53 | 577 | 10.89 | GCCAAAGAAA | AAAAAATTTTC | CATTTCTTGC |
| YMR217W | w53 | 612 | 11.89 | AGCATCGAGA | AAAAATTTTTC | TTTTTTTTTAT |
| YMR217W | c53 | 612 | 12.00 | ATAAAAAAAA | GAAAATTTTTT | TCTCGATGCT |
| YPL183C | w53 | 201 | 9.92 | ACCCATAGCG | GAGAAAATTTTT | CAAAATTAAT |
| YPL183C | c53 | 201 | 9.93 | ATTAGTTTTG | AAAAATTTTCT | CGCTATGGGT |
| YPL183C | w53 | 202 | 13.35 | CCCATAGCGG | AGAAAATTTTC | AAAACATAAT |
| YPL183C | c53 | 202 | 13.28 | AATTAGTTTT | GAAAAATTTTC | CCGCTATGGG |
| YJL109C | w53 | 505 | 11.73 | GACCCACTAA | GAAAAATTTCA | AAAGTAAAT |
| YJL109C | c53 | 505 | 11.96 | AATTTACTTT | TGAAAATTTTC | TTAGTGGGTC |
| YJL109C | w53 | 682 | 10.89 | TTAAGCAAAG | AAAAAATTTTT | CAGTTAGCGA |
| YJL109C | c53 | 682 | 11.11 | TCGCTAACTG | AAAAATTTTTT | CTTTGCTTAA |
| YJL109C | w53 | 683 | 16.13 | TAAGCAAAGA | AAAAAATTTTC | AGTTAGCGAT |
| YJL109C | c53 | 683 | 16.23 | ATCGCTAACT | GAAAAATTTTT | TCTTTGCTTA |
| YJL109C | w53 | 684 | 10.85 | AAGCAAAGAA | AAAAATTTTCA | GTTAGCGATG |
| YJL109C | c53 | 684 | 10.96 | CATCGCTAAC | TGAAAATTTTT | TTCTTTGCTT |
| YCL037C | w53 | 675 | 13.35 | GATGCTCATC | GCAAATTTTTC | AGAAATGGTG |
| YCL037C | c53 | 675 | 13.15 | CACCATTTCT | GAAAAATTTGC | GATGAGCATC |
| YCL037C | w53 | 716 | 16.16 | CCCACGCAAT | GAAAAATTTTT | TTCACTTCTG |
| YCL037C | c53 | 716 | 16.20 | CAGAAGTGAA | AAAAAATTTTC | ATTGCGTGGG |
| YCL037C | w53 | 717 | 15.27 | CCACGCAATG | AAAAAATTTTT | TCACTTCTGG |
| YCL037C | c53 | 717 | 15.20 | CCAGAAGTGA | AAAAAATTTTT | CATTGCGTGG |
| YCL037C | w53 | 718 | 11.11 | CACGCAATGA | AAAAATTTTTT | CACTTCTGGT |
| YCL037C | c53 | 718 | 10.89 | ACCAGAAGTG | AAAAAATTTTT | TCATTGCGTG |
| YMR229C | w53 | 623 | 14.39 | TTCTGATTCC | GAAAAATTTTG | AGAAATGGAT |
| YMR229C | c53 | 623 | 14.56 | TAAAATTTTT | CAAAAATTTTC | GGAATCAGAA |
| YMR229C | w53 | 624 | 9.80 | TCTGATTCCG | AAAAATTTTGA | AAAATTTTAA |
| YMR229C | c53 | 624 | 10.00 | TAAAATTTTT | TCAAAATTTTT | CGGAATCAGA |
| YMR229C | w53 | 633 | 14.61 | GAAAAATTTT | GAAAAATTTTA | AGATGAGATG |
| YMR229C | c53 | 633 | 14.81 | CATCTCATCT | TAAAATTTTTC | AAAATTTTTC |
| YBR084W | w53 | 618 | 11.04 | AGCGCCATGC | TGAAAATTTTT | TCACTTCAAC |
| YBR084W | c53 | 618 | 10.78 | GTTGAAGTGA | AAAAAATTTCA | GCATGGCGCT |
| YBR084W | w53 | 619 | 12.07 | GCGCCATGCT | GAAATTTTTTT | CACTTCAACG |
| YBR084W | c53 | 619 | 11.81 | CGTTGAAGTG | AAAAAATTTTC | AGCATGGCGC |
| YHR020W | w53 | 538 | 13.31 | CATGCACGAT | GGAAAATTTTT | CACTTTTGGC |
| YHR020W | c53 | 538 | 13.32 | CGCAAAAGTG | AAAAAATTTTC | ATCGTGCATG |
| YHR020W | w53 | 539 | 17.16 | ATGCACGATG | GAAAAATTTTC | ACTTTTGGCT |
| YHR020W | c53 | 539 | 17.09 | ACGCAAAAGT | GAAAAATTTTC | CATCGTGCAT |
| YMR049C | w53 | 83 | 11.71 | TACTGCAGGG | CGAAAATTTTC | TCAAATTTGT |
| YMR049C | c53 | 83 | 11.51 | CACAAATTTGA | GAAAAATTTTC | CCCTGCAGTA |
| YMR049C | w53 | 681 | 10.96 | GAAAAATTAT | TGAAAATTTTT | TTTTTTTGG |
| YMR049C | c53 | 681 | 10.85 | CCAAAAAAA | AAAAATTTTCA | ATAATTTTTC |
| YMR049C | w53 | 682 | 16.23 | AAAAATTATT | GAAAAATTTTT | TTTTTTTGGT |
| YMR049C | c53 | 682 | 16.13 | ACCAAAAAAA | AAAAAATTTTC | AATAATTTTT |
| YMR049C | w53 | 683 | 11.11 | AAAATTATTG | AAAAATTTTTT | TTTTTTGGTT |
| YMR049C | c53 | 683 | 10.89 | AACCAAAAAA | AAAAAATTTTT | CAATAATTTT |
| YDR412W | w53 | 662 | 11.96 | TTTTCACATT | TGAAAATTTTC | AAATGTGATG |
| YDR412W | c53 | 662 | 11.73 | CATCACATTT | GAAAAATTTCA | AATGTGAAAA |
| YDR312W | w53 | 463 | 10.00 | GAAACAACG | GGAAAATTTTC | AGCATGTGAT |
| YDR312W | c53 | 463 | 10.04 | ATCACATGCT | GAAATATTTTC | CGTTTGTTC |
| YDR312W | w53 | 574 | 11.79 | GTAATATTTT | CAAAAATTTTG | CCAAACAGAC |
| YDR312W | c53 | 574 | 11.86 | GTCTGTTTGG | CAAAAATTTTG | AAAATATTAC |

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| YDR312W | w53 | 575 | 12.27 | TAATATTTTC | AAAAATTTTGC | CAAACAGACC |
| YDR312W | c53 | 575 | 12.35 | GGTCTGTTTG | GCAAAATTTTT | GAAAATATTA |
| YOR243C | w53 | 688 | 14.24 | GTAGTAATTT | GGAAAATTTTT | CATCATTATA |
| YOR243C | c53 | 688 | 14.28 | TATAATGATG | GAAAATTTTCC | AAATTACTAC |
| YOR243C | w53 | 689 | 14.28 | TAGTAATTTG | GAAAATTTTCC | ATCATTATAA |
| YOR243C | c53 | 689 | 14.24 | TTATAATGAT | GGAAAATTTTT | CAAATTTACTA |
| YDR465C | w53 | 679 | 14.81 | TTTCTTTTTC | TAAAATTTTTT | AAAGCTCATC |
| YDR465C | c53 | 679 | 14.61 | GATGAGCTTT | GAAAAATTTTTA | GAAAAAGAAA |
| YFR001W | c53 | 355 | 9.72 | TTTCTAACTT | TAAATTTTTTTT | TGCTATTATA |
| YFR001W | w53 | 589 | 10.80 | TTATCAAGAA | GCAAAATTTTTA | ACTATGTATT |
| YFR001W | c53 | 589 | 10.88 | AATACATAGT | TAAAATTTTGC | TTCTTGATAA |
| YKL099C | w53 | 647 | 11.04 | ACGTAAAAGA | TGAAAATTTTTT | TATGGCTAGA |
| YKL099C | c53 | 647 | 10.78 | TCTAGCCATA | AAAAAATTTCA | TCTTTTACGT |
| YKL099C | w53 | 648 | 12.07 | CGTAAAAGAT | GAAATTTTTTTT | ATGGCTAGAT |
| YKL099C | c53 | 648 | 11.81 | ATCTAGCCAT | AAAAAATTTTT | ATCTTTTACG |
| YBL028C | w53 | 552 | 9.65 | AGTATTCGCA | AAAAAACTTTT | TCCGTTTTCC |
| YBL028C | c53 | 552 | 9.75 | GGAAAACGGA | AAAAGTTTTTT | TGCGAATACT |
| YBL028C | w53 | 553 | 10.61 | GTATTCGCAA | AAAAACTTTTT | CCGTTTTCCA |
| YBL028C | c53 | 553 | 10.56 | TGGAAAACGG | AAAAAGTTTTT | TTGCGAATAC |
| YBL028C | w53 | 693 | 17.09 | GAGGCTCTAC | GAAAAATTTTT | GTACGGCTGA |
| YBL028C | c53 | 693 | 17.16 | TACCTAGTAC | GAAAATTTTTT | GTAGAGCCTC |
| YBL028C | w53 | 694 | 10.63 | AGGCTCTACG | AAAAATTTTCCG | TACTAGGTAT |
| YBL028C | c53 | 694 | 10.71 | ATACCTAGTA | CGAAAATTTTT | CGTAGAGCCT |
| YIL127C | w53 | 676 | 14.39 | AATGCTCTTT | GAAAAATTTTTG | CGATGAGCTT |
| YIL127C | c53 | 676 | 14.56 | AAGCTCATCG | CAAAATTTTTT | AAAGAGCATT |
| YIL127C | w53 | 677 | 12.27 | ATGCTCTTTG | AAAAATTTTTGC | GATGAGCTTT |
| YIL127C | c53 | 677 | 12.35 | AAAGCTCATC | GCAAAATTTTT | CAAAGAGCAT |
| YHR066W | w53 | 617 | 9.84 | TTGATTAATT | TTAAATTTTTT | ATTTTATCG |
| YHR066W | w53 | 651 | 11.96 | TAGACGAAAT | TGAAAATTTTT | ACTGAAAAAA |
| YHR066W | c53 | 651 | 11.73 | TTTTTTCAGT | GAAAAATTTCA | ATTTTCGTCTA |
| YHR197W | w53 | 687 | 12.35 | GGTCATCGCA | AGAAAATTTTT | CAATATTAATA |
| YHR197W | c53 | 687 | 12.40 | TTTAATATTG | AAAAATTTTTT | TGCGATGACC |
| YHR197W | w53 | 688 | 17.16 | GTCATCGCAA | GAAAATTTTTT | AATATTAAC |
| YHR197W | c53 | 688 | 17.09 | GTTTAATATT | GAAAAATTTTT | TTGCGATGAC |
| YOR272W | w53 | 198 | 10.61 | CAGTACGAAA | GAAAAACTTTT | CGTTCGTCTC |
| YOR272W | c53 | 198 | 10.68 | GAGACGAACG | AAAAGTTTTT | TTTTCTCTG |
| YOR272W | w53 | 199 | 11.53 | AGTACGAAAG | AAAAACTTTT | GTTTCGTCTCG |
| YOR272W | c53 | 199 | 11.52 | CGAGACGAAC | GAAAAGTTTTT | CTTTCGTACT |
| YOR272W | w53 | 630 | 13.55 | GCCAGTACTT | CAAAAATTTTT | CAAAAATTTT |
| YOR272W | c53 | 630 | 13.51 | AAAATTTTTG | AAAAATTTTTT | AAGTACTGGC |
| YOR272W | w53 | 631 | 16.20 | CCAGTACTTC | AAAAATTTTTT | AAAAATTTTC |
| YOR272W | c53 | 631 | 16.16 | GAAAATTTTT | GAAAAATTTTT | GAAGTACTGG |
| YOR272W | w53 | 641 | 14.48 | AAAAATTTTT | CAAAAATTTTT | TGAAGTGCTC |
| YOR272W | c53 | 641 | 14.47 | GAGCACTTCA | GAAAATTTTTT | AAAAATTTT |
| YOR272W | w53 | 642 | 12.40 | AAAATTTTTT | AAAAATTTTTT | GAAGTGCTCA |
| YOR272W | c53 | 642 | 12.35 | TGAGCACTTC | AGAAAATTTTT | GAAAAATTTT |
| YJR070C | w53 | 605 | 10.89 | ACAAGAAAAA | AAAAAAATTTT | TTTTTTTTCT |
| YJR070C | c53 | 605 | 11.11 | AGAAAAAAA | AAAATTTTTT | TTTTTCTGT |
| YJR070C | w53 | 606 | 15.20 | CAAGAAAAA | AAAAAAATTTT | TTTTTTTTCTC |
| YJR070C | c53 | 606 | 15.27 | GAGAAAAAAA | AAAAATTTTTT | TTTTTTCTTG |
| YJR070C | w53 | 607 | 15.27 | AAGAAAAAAA | AAAAATTTTTT | TTTTTTCTCT |
| YJR070C | c53 | 607 | 15.20 | AGAGAAAAA | AAAAAAATTTT | TTTTTTCTTT |
| YJR070C | w53 | 608 | 11.11 | AGAAAAAAA | AAAATTTTTT | TTTTTCTCTA |
| YJR070C | c53 | 608 | 10.89 | TAGAGAAAAA | AAAAAAATTTT | TTTTTTTTCT |
| YJR070C | w53 | 645 | 12.35 | GTGGGAGGAA | AGAAAATTTTT | CTCGATGAGC |
| YJR070C | c53 | 645 | 12.40 | GTCATCGAG | AAAAATTTTTT | TTCTTCCCAC |
| YJR070C | w53 | 646 | 17.16 | TGGGAGGAAA | GAAAAATTTTT | TCGATGAGCT |
| YJR070C | c53 | 646 | 17.09 | AGCTCATCGA | GAAAAATTTT | TTCTTCCCA |
| YJR070C | w53 | 667 | 11.52 | TCGATGAGCT | GAAAAGTTTTT | ATCATATAAA |
| YJR070C | c53 | 667 | 11.53 | TTTATATGAT | AAAAACTTTT | AGCTCATCGA |
| YLR222C | w53 | 685 | 11.89 | GTAAGCGAC | TGAAAATTTTT | TGAAAAATTC |
| YLR222C | c53 | 685 | 11.81 | GAATTTTCA | GAAAATTTTCA | GTCGCTTAC |
| YLR222C | w53 | 686 | 13.35 | TAAAGCGACT | GAAAATTTTTT | GAAAAATTTCA |
| YLR222C | c53 | 686 | 13.28 | TGAATTTTTC | AGAAAATTTT | AGTCGTTTA |
| YGR123C | w53 | 349 | 9.69 | TTTTTTATCA | TAAAATTTTTT | ACCATGACAA |
| YGR123C | c53 | 349 | 9.64 | TTGTCATGGT | GTAAAATTTTA | TGATAAAAAA |
| YGR123C | w53 | 594 | 11.92 | TCTTCTTTAT | GAAAATTTTTT | TTCAATCATT |
| YGR123C | c53 | 594 | 11.96 | AATGATTGAA | AAAAATTTTTT | ATAAAGAAGA |
| YGR123C | w53 | 595 | 11.04 | CTTCTTTATG | AAAAATTTTTT | TCAATCATTG |
| YGR123C | c53 | 595 | 10.96 | CAATGATTGA | AAAAATTTTTT | CATAAAGAAG |
| YGR123C | w53 | 679 | 11.73 | GCGGAAACT | GAAAAATTTCA | CAGATGAGGT |

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| YGR123C | c53 | 679 | 11.96 | ACCTCATCTG | TGAAATTTTTTC | AGTTTCCC GC |
| YKL181W | w53 | 525 | 11.85 | AGATGCTGAA | GAAAAAATTTT | CTGTTCCATT |
| YKL181W | c53 | 525 | 12.04 | AATGGAACAG | AAAAATTTTTT | TTCAGCATCT |
| YKL181W | w53 | 526 | 16.13 | GATGCTGAAG | AAAAAATTTTC | TGTTCCATTG |
| YKL181W | c53 | 526 | 16.23 | CAATGGAACA | GAAAAATTTTT | CTTCAGCATC |
| YKL181W | w53 | 527 | 12.40 | ATGCTGAAGA | AAAAATTTTTCT | GTTCCATTGG |
| YKL181W | c53 | 527 | 12.35 | CCAATGGAAC | AGAAAAATTTT | TCTTCAGCAT |
| YCL059C | w53 | 661 | 10.71 | CATCTGAAAA | CGAAAAATTTTT | TTTTTCCTAT |
| YCL059C | c53 | 661 | 10.63 | ATAAGGAAAA | AAAAATTTTCG | TTTTTCAGATG |
| YCL059C | w53 | 662 | 16.23 | ATCTGAAAAAC | GAAAAATTTTTT | TTTTCTTATA |
| YCL059C | c53 | 662 | 16.13 | TATAAGGAAA | AAAAAATTTT | GTTTTTCAGAT |
| YCL059C | w53 | 663 | 11.11 | TCTGAAAAACG | AAAAATTTTTT | TTCCTTATAT |
| YCL059C | c53 | 663 | 10.89 | ATATAAGGAA | AAAAAATTTT | CGTTTTTCAGA |
| YCL059C | w53 | 709 | 11.89 | CGATGAGATA | TGAAAAATTTT | AAAAAAAAGA |
| YCL059C | c53 | 709 | 11.81 | TCTTTTTTTT | GAAAAATTTTCA | TATCTCATCG |
| YCL059C | w53 | 710 | 11.81 | GATGAGATAT | GAAAAATTTTCA | AAAAAACAGAG |
| YCL059C | c53 | 710 | 11.89 | CTCTTTTTTT | TGAAAAATTTT | ATATCTCATC |
| YKR081C | w53 | 659 | 10.96 | TTATACGATT | TGAAAAATTTTT | CATTTTTTTG |
| YKR081C | c53 | 659 | 10.85 | CAAAAAAATG | AAAAATTTTCA | AATCGTATAA |
| YKR081C | w53 | 660 | 17.16 | TATACGATTT | GAAAAATTTTT | ATTTTTTGC |
| YKR081C | c53 | 660 | 17.09 | GCAAAAAAAT | GAAAAATTTT | AAATCGTATA |
| YKL021C | w53 | 16 | 10.38 | GTCCAAGAAA | GAAAAATTTTA | TTGGCGGATT |
| YKL021C | c53 | 16 | 10.57 | AATCCGCCAA | TAAATTTTTT | TTTCTTGAC |
| YNL110C | w53 | 647 | 17.09 | TTTTCACTAT | GAAAAATTTT | CGCCATAAGA |
| YNL110C | c53 | 647 | 17.16 | TCTTATGGCG | GAAAAATTTT | ATAGTGAAAA |
| YNL110C | w53 | 648 | 13.32 | TTTTCACTATG | AAAAATTTTCC | GCCATAAGAA |
| YNL110C | c53 | 648 | 13.31 | TTCTTATGGC | GGAAAAATTTT | CATAGTGAAA |
| YLR221C | w53 | 683 | 10.80 | AGCTCATCAC | TAAAAATTTGC | AAAAAACGAA |
| YLR221C | c53 | 683 | 10.88 | TTCGTTTTTT | GCAAAATTTTA | GTGATGAGCT |
| YJL148W | w53 | 577 | 10.89 | TAGAAAATGA | AAAAAATTTTT | CTTTTTAGCC |
| YJL148W | c53 | 577 | 11.11 | GGCTGAAAAG | AAAAATTTTTT | TCATTTTCTA |
| YJL148W | w53 | 578 | 16.13 | AGAAAATGAA | AAAAAATTTT | TTTTTCAGCCT |
| YJL148W | c53 | 578 | 16.23 | AGGCTGAAAA | GAAAAATTTTT | TTCATTTTCT |
| YJL148W | w53 | 579 | 12.40 | GAAAATGAAA | AAAAATTTTCT | TTTTTCAGCCTG |
| YJL148W | c53 | 579 | 12.35 | CAGGCTGAAA | AGAAAAATTTT | TTTCATTTT |
| YJL148W | w53 | 601 | 10.71 | TTCAGCCTGA | GAAAGTTTTT | CTTAGGCAG |
| YJL148W | c53 | 601 | 10.57 | CTGCCCTAAG | AAAAAATTTT | TCAGGCTGAA |
| YJL148W | w53 | 678 | 14.61 | TTAAAGAAAT | GAAAAATTTTA | TCGATGAGCA |
| YJL148W | c53 | 678 | 14.81 | TGCTCATCGA | TAAAAATTTT | ATTTCTTTAA |
| YJL148W | w53 | 679 | 10.15 | TAAAGAAATG | AAAAAATTTT | CGATGAGCAT |
| YJL148W | c53 | 679 | 10.23 | ATGCTCATCG | ATAAAAATTTT | CATTTCTTTA |
| YCR016W | w53 | 676 | 11.89 | TGCAAATTAT | TGAAAAATTTT | GAGCGAGAAA |
| YCR016W | c53 | 676 | 11.81 | TTTCTCGCTC | GAAAAATTTTCA | ATAATTTGCA |
| YCR016W | w53 | 677 | 11.59 | GCAAATTATT | GAAAAATTTTCG | AGCGAGAAA |
| YCR016W | c53 | 677 | 11.63 | TTTTCTCGCT | CGAAAAATTTT | AATAATTTGC |
| YLR003C | w53 | 703 | 12.35 | AAAATTGAAG | AGAAAAATTTT | GAGATGACCA |
| YLR003C | c53 | 703 | 12.40 | TGGTCATCTC | AAAAATTTTCT | CTTCAATTT |
| YLR003C | w53 | 704 | 14.47 | AAATTGAAGA | GAAAAATTTT | AGATGAGCAT |
| YLR003C | c53 | 704 | 14.48 | ATGGTCATCT | CAAAAAATTTT | TCTTCAATTT |
| YHR052W | w53 | 347 | 10.27 | AAAAGTAAAA | GAAAAATATTT | AAATTTAACC |
| YHR052W | c53 | 347 | 10.46 | GGTTAAATTT | AAATATTTTCT | TTTTACTTTT |
| YHR052W | c53 | 348 | 9.65 | TGGTTAAATT | TAAATATTTT | CTTTTACTTT |
| YHR052W | w53 | 657 | 10.89 | CAATTTCTCG | AAAAAATTTT | TCCACTGGAG |
| YHR052W | c53 | 657 | 11.11 | CTCCAGTGGA | AAAAATTTTTT | CAGGAAATTG |
| YHR052W | w53 | 658 | 15.20 | AATTTCTGGA | AAAAAATTTTT | CCACTGGAGC |
| YHR052W | c53 | 658 | 15.27 | GCTCCAGTGG | AAAAATTTTT | TCAGGAAAT |
| YHR052W | w53 | 659 | 16.20 | ATTTCTGAA | AAAAATTTTTT | CACTGGAGCT |
| YHR052W | c53 | 659 | 16.16 | AGCTCCAGTG | GAAAAATTTTT | TTCAGGAAAT |
| YKL009W | w53 | 466 | 10.67 | AAATGTTTAT | CCAAAAATTTT | ACACCTGAGA |
| YKL009W | c53 | 466 | 10.54 | TCTCAGGTGT | GAAAAATTTGG | ATAAACATTT |
| YKL009W | w53 | 659 | 11.85 | GAAGGTGAAA | GAAAAAATTTT | TTTTCCAGAAA |
| YKL009W | c53 | 659 | 12.04 | TTTCTGAAA | AAAAATTTTTT | TTTCACCTTC |
| YKL009W | w53 | 660 | 15.20 | AAGGTGAAA | AAAAAATTTTT | TTCCAGAAAA |
| YKL009W | c53 | 660 | 15.27 | TTTTCTGGAA | AAAAATTTTTT | CTTTCACCTT |
| YKL009W | w53 | 661 | 15.27 | AGGTGAAAGA | AAAAAATTTTT | TCCAGAAAAA |
| YKL009W | c53 | 661 | 15.20 | TTTTTCTGGA | AAAAAATTTTT | TCTTTCACCT |
| YKL009W | w53 | 662 | 11.11 | GGTGAAAGAA | AAAAATTTTTT | CCAGAAAAAT |
| YKL009W | c53 | 662 | 10.89 | ATTTTCTGG | AAAAAATTTTT | TTCTTTACC |
| YNL002C | w53 | 660 | 12.35 | TTTGGTAAAA | AGAAAAATTTTT | TTCAGTCTCG |
| YNL002C | c53 | 660 | 12.40 | CAGAGCTGAA | AAAAATTTTCT | TTTTACCAA |
| YNL002C | w53 | 661 | 16.23 | TTGGTAAAAA | GAAAAATTTTT | TCAGCTCTGC |

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| YNL002C | c53 | 661 | 16.13 | GCAGAGCTGA | AAAAAATTTTC | TTTTTACCAA |
| YNL002C | w53 | 662 | 11.11 | TGGTAAAAAG | AAAAATTTTTT | CAGCTCTGCT |
| YNL002C | c53 | 662 | 10.89 | AGCAGAGCTG | AAAAAATTTTT | CTTTTTACCA |
| YDR101C | w53 | 680 | 11.85 | TTTGCTTTCT | GAAAAAATTTT | ACCGAAGTAA |
| YDR101C | c53 | 680 | 12.04 | TTACTTCGGT | AAAAATTTTTT | AGAAAGCAAA |
| YDR101C | w53 | 681 | 13.66 | TTGCTTTCTG | AAAAAATTTTA | CCGAAGTAAA |
| YDR101C | c53 | 681 | 13.88 | TTTACTTCGG | TAAAAATTTTT | CAGAAAGCAA |
| YDR101C | w53 | 682 | 11.08 | TGCTTTCTGA | AAAAATTTTAC | CGAAGTAAAG |
| YDR101C | c53 | 682 | 11.19 | CTTTACTTCG | GTAAAAATTTT | TCAGAAAGCA |
| YDR101C | w53 | 702 | 11.73 | CCGAAGTAAA | GAAAAATTTCA | GCAGAAGAGA |
| YDR101C | c53 | 702 | 11.96 | TCTCTTCTGC | TGAAAAATTTT | TTTACTTCGG |
| YDR324C | w53 | 766 | 17.09 | AAAACCAAAT | GAAAAATTTTT | AGACTGACAA |
| YDR324C | c53 | 766 | 17.16 | TTGTCAGTCT | GAAAAATTTTT | ATTTGGTTTT |
| YDR324C | w53 | 767 | 10.85 | AAACCAAATG | AAAAATTTTCA | GACTGACAAG |
| YDR324C | c53 | 767 | 10.96 | CTTGTCAGTC | TGAAAAATTTT | CATTTGGTTT |
| YDR083W | w53 | 429 | 9.72 | GCTTCCTCTA | AAAAATCTTTT | TGAATATGCT |
| YDR083W | c53 | 429 | 9.68 | AGCATATTC | AAAAATTTTTT | TAGAGGAAGC |
| YDR083W | w53 | 759 | 14.39 | CTCTAGGCCT | GAAAAATTTTT | CGATGAGCTC |
| YDR083W | c53 | 759 | 14.56 | GAGCTCATCG | CAAAAATTTTT | AGGCCTAGAG |
| YDR083W | w53 | 760 | 12.27 | TCTAGGCCTG | AAAAATTTTGC | GATGAGTCA |
| YDR083W | c53 | 760 | 12.35 | TGAGCTCATC | GCAAAAATTTT | CAGGCCTAGA |
| YGL099W | w53 | 665 | 14.31 | CTTTTCGCCT | GGAAAAATTTT | AATGCCGAGA |
| YGL099W | c53 | 665 | 14.21 | TCTCGGCATT | GAAAAATTTCC | AGGCGAAAAG |
| YGL099W | w53 | 688 | 11.27 | TGCCGAGATT | AAAAAATTTGT | CAATGAAAA |
| YGL099W | c53 | 688 | 11.46 | ATTTTCATTG | ACAAAATTTTT | AATCTCGGCA |
| YGL099W | w53 | 689 | 9.68 | GCCGAGATTA | AAAAATTTGTC | AATGAAAAATG |
| YGL099W | c53 | 689 | 9.76 | CATTTTCATT | GACAAAATTTTT | TAATCTCGGC |
| YGL111W | w53 | 702 | 14.39 | AAATAAAGCT | GAAAAATTTTT | TAAAGCGATG |
| YGL111W | c53 | 702 | 14.56 | CATCGCTTTA | CAAAAATTTTC | AGCTTTATTT |
| YGL111W | w53 | 703 | 11.34 | AATAAAGCTG | AAAAATTTTGT | AAAGCGATGC |
| YGL111W | c53 | 703 | 11.39 | GCATCGCTTT | ACAAAATTTTT | CAGCTTTATT |
| YDL051W | w53 | 609 | 11.85 | TCGTGACCGT | GAAAAAATTTTT | CGTCTTCGTC |
| YDL051W | c53 | 609 | 12.04 | GACGAAGACG | AAAAATTTTTT | ACGGTCACGA |
| YDL051W | w53 | 610 | 16.13 | CGTGACCGTG | AAAAAATTTTT | GTCTTCGTCT |
| YDL051W | c53 | 610 | 16.23 | AGACGAAGAC | GAAAAATTTTT | CACGGTCACG |
| YDL051W | w53 | 611 | 10.63 | GTGACCGTGA | AAAAAATTTTC | TCTTCGTCTT |
| YDL051W | c53 | 611 | 10.71 | AAGACGAAGA | CGAAAAATTTTT | TCACGGTCAC |
| YMR131C | w53 | 640 | 10.96 | GTTTCGAGCCG | TGAAAAATTTTT | TTCTTTTCAG |
| YMR131C | c53 | 640 | 10.85 | CTGAAAGGAA | AAAAATTTTCA | CGGCTCGAAC |
| YMR131C | w53 | 641 | 16.23 | TTCGAGCCGT | GAAAAATTTTT | TCCTTTTCAG |
| YMR131C | c53 | 641 | 16.13 | GCTGAAAGGA | AAAAAATTTTC | ACGGCTCGAA |
| YMR131C | w53 | 642 | 11.11 | TCGAGCCGTG | AAAAATTTTTT | CCTTTTCAGC |
| YMR131C | c53 | 642 | 10.89 | CGTGAAAGG | AAAAAATTTTT | CACGGCTCGA |
| YPR110C | w53 | 692 | 11.79 | CTTGGATTCA | CAAAAATTTTG | TGAAAAAAT |
| YPR110C | c53 | 692 | 11.86 | AATTTTTC | CAAAAATTTTG | TGAATCCAAG |
| YPR110C | w53 | 693 | 11.34 | TTGGATTTC | AAAAATTTTGT | GAAAAAATTA |
| YPR110C | c53 | 693 | 11.39 | TAATTTTTC | ACAAAATTTTT | GTGAATCCAA |
| YPR110C | w53 | 730 | 12.77 | TGAGTTGAAA | GAAAAAATTTT | ACTCATATTA |
| YPR110C | c53 | 730 | 13.00 | TAATATGAGT | GAAAATTTTTT | TTTCAACTCA |
| YPR110C | w53 | 731 | 10.78 | GAGTTGAAAG | AAAAAATTTCA | CTCATATTAT |
| YPR110C | c53 | 731 | 11.04 | ATAATATGAG | TGAAAATTTTT | CTTTCAACTC |
| YMR290C | w53 | 633 | 10.96 | TTACCCGAAT | TGAAAAATTTTT | TATTTGCCTT |
| YMR290C | c53 | 633 | 10.85 | AAGGCAAATA | AAAAAATTTCA | ATTCGGGTAA |
| YMR290C | w53 | 634 | 16.23 | TACCCGAAT | GAAAAATTTTT | ATTTGCCTTT |
| YMR290C | c53 | 634 | 16.13 | AAAGGCAAAT | AAAAAATTTTC | AATTCGGGTA |
| YBL039C | w53 | 594 | 11.46 | ATTGGTGATA | ACAAAATTTTT | TTTTTTTTTT |
| YBL039C | c53 | 594 | 11.27 | AAAAAAAAAA | AAAAAATTTGT | TATCCCAAT |
| YBL039C | w53 | 629 | 10.00 | TTTTTTTTTT | TCAAAAATTTTT | CACAGCTCAT |
| YBL039C | c53 | 629 | 9.80 | ATGAGCTGTG | AAAAATTTTGA | AAAAAAAAAA |
| YBL039C | w53 | 630 | 14.56 | TTTTTTTTTT | CAAAAATTTTT | ACAGCTCATC |
| YBL039C | c53 | 630 | 14.39 | GATGAGCTGT | GAAAAAATTTG | AAAAAAAAAA |
| YML093W | w53 | 683 | 10.96 | AAAAGGCCAT | TGAAAATTTTT | CAAATTCCTA |
| YML093W | c53 | 683 | 10.85 | TAGGAATTTG | AAAAATTTTCA | ATGGCCTTTT |
| YML093W | w53 | 684 | 17.16 | AAAGGCCATT | GAAAAATTTTT | AAATTCCTAT |
| YML093W | c53 | 684 | 17.09 | ATAGGAATTT | GAAAAAATTTT | AATGGCCTTT |
| YGL078C | w53 | 620 | 12.00 | CAAATTTCTT | GAAATATTTTT | GCGGGAAAA |
| YGL078C | c53 | 620 | 11.89 | TTTTTCCC | AAAAATATTTT | AAGAAATTTG |
| YGL078C | w53 | 644 | 16.16 | GGAAAAAGAT | GAAAAAATTTTT | CACCTCATCG |
| YGL078C | c53 | 644 | 16.20 | CGATGAGGTG | AAAAAATTTTC | ATCTTTTCC |
| YGL078C | w53 | 645 | 16.20 | GAAAAAGATG | AAAAAATTTTC | ACCTCATCGC |
| YGL078C | c53 | 645 | 16.16 | GCGATGAGGT | GAAAAAATTTTT | CATCTTTTTC |

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| YLL008W | w53 | 526 | 9.95 | TTGTGTACAC | TAAAATTTTGT | TTAGTTGTAC |
| YLL008W | c53 | 526 | 9.84 | GTACAACATA | ACAAAATTTTA | GTGTACACAA |
| YLL008W | w53 | 661 | 10.89 | AATGATTGA | AAAAAATTTT | CAAAAAATGC |
| YLL008W | c53 | 661 | 11.11 | GCATTTTGT | AAAAATTTT | TCAAATCATT |
| YLL008W | w53 | 662 | 16.13 | ATGATTGAA | AAAAAATTTT | AAAAAATGCG |
| YLL008W | c53 | 662 | 16.23 | CGCATTTT | GAAAAATTTT | TTCAAATCAT |
| YLL008W | w53 | 663 | 10.85 | TGATTTGAA | AAAAATTTT | AAAAAATGCG |
| YLL008W | c53 | 663 | 10.96 | TCGCATTTT | TGAAAAATTT | TTTCAAATCA |
| YER006W | w53 | 655 | 11.04 | GTTTTTTTT | TGAAATTTT | TCTCACAGCT |
| YER006W | c53 | 655 | 10.78 | AGCTGTGAG | AAAAAATTT | AAAAAATAAC |
| YER006W | w53 | 656 | 12.07 | TTTTTTTTT | GAAATTTT | CTCACAGCTG |
| YER006W | c53 | 656 | 11.81 | CAGCTGTG | AAAAAATTT | AAAAAATAAC |
| YER006W | w53 | 678 | 11.89 | TCACAGCTG | TGAAATTTT | GAGCGAGGCG |
| YER006W | c53 | 678 | 11.81 | CGCCTCGCT | GAAAAATTT | CGAGCTGTGA |
| YER006W | w53 | 679 | 11.59 | CACAGCTG | GAAAAATTT | AGCGAGGCGA |
| YER006W | c53 | 679 | 11.63 | TCGCCTCG | CGAAAAATTT | AGCAGCTGTG |
| YDR496C | w53 | 683 | 10.96 | AGAGAAAT | TGAAATTTT | TTTGCTGGGA |
| YDR496C | c53 | 683 | 10.85 | TCCCAGCAA | AAAAAATTT | GTATTTCTCT |
| YDR496C | w53 | 684 | 16.23 | GAGAAACT | GAAAAATTT | TTGCTGGGAT |
| YDR496C | c53 | 684 | 16.13 | ATCCCAGCA | AAAAAATTT | AGTATTTCTC |
| YDR496C | w53 | 685 | 11.11 | AGAAACTG | AAAAATTTT | TGCTGGGATG |
| YDR496C | c53 | 685 | 10.89 | CATCCCAG | AAAAAATTT | CAGTATTTCT |
| YGR145W | w53 | 695 | 10.76 | AAAAAAAT | GAAAAATTT | GCTAAGCTCA |
| YGR145W | c53 | 695 | 10.92 | TGAGCTTAG | TCAAAAATTT | AATTTTTTTT |
| YGR245C | c53 | 639 | 9.76 | TGAGATGAG | TTAAAAATTT | ATTTTTTAGC |
| YNL175C | w53 | 671 | 11.96 | TCCAAAAAC | TGAAATTTT | AGTCTGAAAG |
| YNL175C | c53 | 671 | 11.73 | CTTTCAGAC | GAAAAATTT | GGTTTTTGGA |
| YNL174W | w53 | 678 | 11.34 | TGGCCTACC | GAATAATTT | GGAGTCTTTG |
| YNL174W | c53 | 678 | 11.27 | CAAGGACT | GAAAAATTT | AGGTAGGCCA |
| YLR196W | w53 | 550 | 10.14 | TTGTCCGTT | TAAAATTTT | CATAGGCCCT |
| YLR196W | c53 | 550 | 9.98 | AGGGCCTAT | GAAAAATTT | CAACGGACAA |
| YLR196W | w53 | 654 | 12.23 | AAAAAGAAG | GAAAAATTT | CTCGATGAGC |
| YLR196W | c53 | 654 | 12.39 | GCTCATCG | ACAAAATTT | ACTTCTTTTT |
| YLR196W | w53 | 655 | 9.68 | AAAAGAAG | AAAAATTTT | TCGATGAGCT |
| YLR196W | c53 | 655 | 9.76 | AGCTCATCG | GACAAAATTT | CACTTCTTTT |
| YOR206W | w53 | 649 | 17.09 | GACGAGTTT | GAAAAATTT | TGAATTTTTT |
| YOR206W | c53 | 649 | 17.16 | AAAAAATTC | GAAAAATTT | AAAACCTGTC |
| YOR206W | w53 | 650 | 12.40 | ACGAGTTT | AAAAATTTT | GAATTTTTTC |
| YOR206W | c53 | 650 | 12.35 | GAAAAAATC | AGAAAAATTT | CAAACTCGT |
| YGR103W | w53 | 410 | 10.07 | ATTCATATT | TCAAATTTT | ACCAATCTTT |
| YGR103W | c53 | 410 | 9.72 | AAAGATTGG | AAAAAATTT | AAATATGAAT |
| YGR103W | w53 | 658 | 12.35 | AAAAAATTA | AGAAAAATTT | TGCGATGAGA |
| YGR103W | c53 | 658 | 12.40 | TCTCATCG | AAAAATTTT | TTAATTTTTT |
| YGR103W | w53 | 659 | 16.23 | AAAAATTA | GAAAAATTT | GCGATGAGAT |
| YGR103W | c53 | 659 | 16.13 | ATCTCATCG | AAAAAATTT | TTTAATTTTT |
| YGR103W | w53 | 695 | 14.39 | GAGAAAAAT | GAAAAATTT | GAAGGTTAAT |
| YGR103W | c53 | 695 | 14.56 | ATTAACCTT | CAAAAATTT | ATTTTTTCTC |
| YGR103W | c53 | 696 | 9.74 | AATTAACCT | CCAAAATTT | CATTTTTTCT |
| YLR276C | w53 | 600 | 13.81 | GATGAAAT | TAAAAATTT | TTTACGGAAC |
| YLR276C | c53 | 600 | 13.73 | GTTCGTGAA | AAAAATTTT | AAATTTTCAT |
| YLR276C | w53 | 601 | 15.27 | ATGAAATTT | AAAAATTTT | TTTACGGAAC |
| YLR276C | c53 | 601 | 15.20 | TGTTTCGTG | AAAAAATTT | AAAATTTTCAT |
| YLR276C | w53 | 602 | 11.11 | TGAAATTT | AAAAATTTT | TCACGGAACAT |
| YLR276C | c53 | 602 | 10.89 | ATGTTTCGT | AAAAAATTT | TAAAATTTCA |
| YGR160W | w53 | 58 | 10.75 | ATATTATAG | CCAAAATTT | CTCAAAAATG |
| YGR160W | c53 | 58 | 10.46 | CATTTTGG | GAAAAATTT | TCTATAATAT |
| YNL182C | w53 | 107 | 13.81 | TTTTTTTTT | TAAAAATTT | GTTCTTTGTT |
| YNL182C | c53 | 107 | 13.73 | AACAAAGAA | AAAAATTTT | GAAAAAATAA |
| YNL182C | w53 | 108 | 13.51 | TTTTTTTTT | AAAAATTTT | TTCTTTGTTT |
| YNL182C | c53 | 108 | 13.55 | AAACAAGAA | CAAAAATTT | AGAAAAAATA |
| YNL182C | w53 | 651 | 13.88 | ACGCGGAAC | TAAAATTTT | TTTACATCCC |
| YNL182C | c53 | 651 | 13.66 | GGGATGTA | AAAAATTTT | GTTTCGCGCT |
| YNL182C | w53 | 652 | 11.11 | CGCGGAAC | AAAAATTTT | TTTACATCCC |
| YNL182C | c53 | 652 | 10.89 | TGGGATGTA | AAAAAATTT | AGTTTCGCGG |
| YNL182C | c53 | 679 | 9.76 | GGGCATCG | TTAAAATTT | ATTTAGTGGG |
| YLR409C | w53 | 666 | 14.39 | TTTTTTAAT | GAAAAATTT | AGAAAAATTT |
| YLR409C | c53 | 666 | 14.56 | AAATTTTCT | CAAAAATTT | AGTTAAAAAA |
| YLR409C | w53 | 667 | 9.80 | TTTTTAACT | AAAAAATTT | GAAAAATTTT |
| YLR409C | c53 | 667 | 10.00 | GAAATTTT | TCAAATTTT | CAGTTAAAAA |
| YLR409C | w53 | 678 | 11.51 | AAAATTTT | GAAAAATTT | CGATGAGATT |
| YLR409C | c53 | 678 | 11.71 | AATCTCAT | CGAAAATTT | TCAAATTTT |

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| YLR129W | w53 | 684 | 13.31 | GATGAGCAGT | GGAAAATTTTT | CAGAAAATTTT |
| YLR129W | c53 | 684 | 13.32 | AAAATTTCTG | AAAAATTTTCC | ACTGCTCATC |
| YLR129W | w53 | 685 | 17.16 | ATGAGCAGTG | GAAAATTTTTT | AGAAAATTTT |
| YLR129W | c53 | 685 | 17.09 | GAAAATTTCT | GAAAATTTTTT | CACTGCTCAT |
| YLR002C | w53 | 673 | 11.11 | CCCGAAAAC | GAAAATTTTTT | CTCATCTCAT |
| YLR002C | c53 | 673 | 11.16 | ATGAGATGAG | ATAAAATTTTT | AGTTTTCGGG |
| YNL132W | w53 | 444 | 16.16 | TTCGCAATTT | GAAAATTTTTT | TTAATGATT |
| YNL132W | c53 | 444 | 16.20 | AATCATTA | AAAAATTTTTT | AAATTGCGAA |
| YNL132W | w53 | 445 | 15.27 | TCGCAATTTG | AAAAATTTTTT | TTAATGATTA |
| YNL132W | c53 | 445 | 15.20 | TAATCATTA | AAAAATTTTTT | CAAATTGCGA |
| YNL132W | w53 | 446 | 11.11 | CGCAATTTGA | AAAAATTTTTT | TAATGATTAC |
| YNL132W | c53 | 446 | 10.89 | GTAATCATTA | AAAAAAATTTTT | TCAAATGCGG |
| YNL132W | w53 | 612 | 14.39 | GGAATCGTGT | GAAAATTTTTG | AAAAA |
| YNL132W | c53 | 612 | 14.56 | TTTTTTTTTT | CAAAATTTTTT | ACACGATTCC |
| YNL132W | w53 | 613 | 9.80 | GAATCGTGTG | AAAAATTTTTG | AAAAA |
| YNL132W | c53 | 613 | 10.00 | TTTTTTTTTT | TCAAATTTTTT | CACACGATT |
| YNL248C | w53 | 80 | 11.19 | GCCTTGAATA | GTAAAATTTTT | GTTGATATAT |
| YNL248C | c53 | 80 | 11.08 | ATATATCAAC | AAAAATTTTTT | TATTCAAGGC |
| YNL248C | w53 | 81 | 12.12 | CCTTGAATAG | TAAAATTTTTT | TTGATATATT |
| YNL248C | c53 | 81 | 12.01 | AATATATCAA | CAAAAATTTTT | CTATTCAAGG |
| YNL248C | w53 | 654 | 10.96 | TCACCCGCGC | TGAAAATTTTT | TATTGCGATG |
| YNL248C | c53 | 654 | 10.85 | CATCGCAATA | AAAAATTTTTT | GCGCGGGTGA |
| YNL248C | w53 | 655 | 16.23 | CACCCGCGCT | GAAAATTTTTT | ATTGCGATGA |
| YNL248C | c53 | 655 | 16.13 | TCATCGCAAT | AAAAATTTTTT | AGCGCGGGTG |
| YGR128C | w53 | 655 | 10.07 | TCTGTATTTT | TCAAATTTTTT | CATTATGCTG |
| YGR128C | c53 | 655 | 9.72 | CAGCATAATG | AAAAATTTTGA | AAAATACAGA |
| YGR128C | w53 | 656 | 10.40 | CTGTATTTT | CAAAATTTTTT | ATTATGCTGT |
| YGR128C | c53 | 656 | 10.08 | ACAGCATAAT | GAAAAAATTTT | AAAAATACAG |
| YGR128C | w53 | 688 | 10.68 | GCAGATGCCT | GAAAAATTTGA | AAACTTTGAT |
| YGR128C | c53 | 688 | 11.00 | ATCAAAGTTT | TCAAATTTTTT | AGGCATCTGC |
| YLR009W | w53 | 552 | 17.09 | TCAGCGGAGT | GAAAATTTTTT | ACTCGTCTTT |
| YLR009W | c53 | 552 | 17.16 | AAAGACGAGT | GAAAATTTTTT | ACTCCGCTGA |
| YLR009W | w53 | 553 | 10.85 | CAGCGGAGTG | AAAAATTTTTT | CTCGTCTTTT |
| YLR009W | c53 | 553 | 10.96 | AAAAGACGAG | TGAAAATTTTT | CACTCCGCTG |
| YNL062C | w53 | 606 | 10.96 | TGCGATGAGA | TGAAAATTTTT | TTCAGAAAAC |
| YNL062C | c53 | 606 | 10.85 | GTTTTCTGAA | AAAAATTTTTT | TCTCATCGCA |
| YNL062C | w53 | 607 | 16.23 | GCGATGAGAT | GAAAATTTTTT | TCAGAAAACG |
| YNL062C | c53 | 607 | 16.13 | CGTTTTCTGA | AAAAATTTTTT | ATCTCATCGC |
| YNL062C | w53 | 608 | 11.11 | CGATGAGATG | AAAAATTTTTT | CAGAAAACGT |
| YNL062C | c53 | 608 | 10.89 | ACGTTTTCTG | AAAAAATTTTT | CATCTCATCG |
| YNL062C | w53 | 657 | 11.73 | TGTAATAATCT | GAAAAATTTCA | TCAAAAAAAA |
| YNL062C | c53 | 657 | 11.96 | TTTTTTTTTT | TGAAAATTTTT | AGATTTTACA |
| YGL171W | w53 | 682 | 16.16 | TTTTCTTCGT | GAAAATTTTTT | TGCGATGAGA |
| YGL171W | c53 | 682 | 16.20 | TCTCATCGCA | AAAAATTTTTT | ACGAAGAAA |
| YGL171W | w53 | 683 | 15.27 | TTTCTTCGTG | AAAAATTTTTT | GCGATGAGAT |
| YGL171W | c53 | 683 | 15.20 | ATCTCATCGC | AAAAATTTTTT | CACGAAGAAA |
| YBR247C | w53 | 663 | 10.96 | GCATCGGAAA | TGAAAATTTTT | AAAAATCGAT |
| YBR247C | c53 | 663 | 10.85 | ATCGATTTTT | AAAAATTTTTT | TTTCCGATGC |
| YBR247C | w53 | 664 | 14.69 | CATCGGAAAT | GAAAATTTTTT | AAAAATCGATG |
| YBR247C | c53 | 664 | 14.73 | CATCGATTTT | TAAAATTTTTT | ATTTCCGATG |
| YJR002W | w53 | 707 | 13.28 | CGAGGGAAGC | AGAAAATTTTT | AATTTTGCGA |
| YJR002W | c53 | 707 | 13.35 | TCGCAAAAT | GAAAATTTTTT | GCTTCCCTCG |
| YJR002W | w53 | 708 | 11.81 | GAGGGAAGCA | GAAAATTTTTT | ATTTTGCATG |
| YJR002W | c53 | 708 | 11.89 | ATCGCAAAAT | TGAAAATTTTT | TGCTTCCCTC |
| YLR197W | w53 | 627 | 11.89 | GAATGCGATG | TGAAAATTTTT | TTTTTTTTTT |
| YLR197W | c53 | 627 | 11.81 | AAAAA | GAAAATTTTTT | CATCGCATTC |
| YLR197W | w53 | 628 | 13.35 | AATGCGATGT | GAAAATTTTTT | TTTTTTTTTT |
| YLR197W | c53 | 628 | 13.28 | AAAAA | AGAAAATTTTT | ACATCGCATT |
| YLR197W | w53 | 658 | 11.04 | TTTTTCAAAG | TGAAAATTTTT | TGAGTGATGA |
| YLR197W | c53 | 658 | 10.78 | TCATCACTCA | AAAAAATTTCA | CTTTGAAAA |
| YLR197W | w53 | 659 | 12.07 | TTTTCAAAGT | GAAATTTTTTT | GAGTGATGAG |
| YLR197W | c53 | 659 | 11.81 | CTCATCACTC | AAAAAATTTT | ACTTTGAAAA |
| YLR197W | w53 | 689 | 14.39 | GATGGGAAAT | GAAAATTTTTT | TGCAATTTGCG |
| YLR197W | c53 | 689 | 14.56 | CGCAATTGCA | CAAAAATTTT | ATTTCCCATC |
| YLR197W | w53 | 690 | 11.34 | ATGGGAAATG | AAAAATTTTTT | GCAATTTGCGT |
| YLR197W | c53 | 690 | 11.39 | ACGCAATTGC | ACAAAATTTTT | CATTTCCCAT |
| YLR175W | w53 | 548 | 10.61 | CCTTTTTATC | GAAAACTTTT | AGTATTTTCT |
| YLR175W | c53 | 548 | 10.68 | AGAAAATACT | AAAAGTTTTT | GATAAAAAAG |
| YLR175W | w53 | 598 | 10.96 | CTGTTCTCAC | TGAAAATTTTT | CTTTCTCTT |
| YLR175W | c53 | 598 | 10.85 | AAGAAGAAAG | AAAAATTTTTT | GTGAGAACAG |
| YLR175W | w53 | 599 | 17.16 | TGTTCTCACT | GAAAATTTTTT | TTTCTCTTT |

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| YLR175W | c53 | 599 | 17.09 | AAAGAAGAAA | GAAAAATTTTC | AGTGAGAACA |
| YLR175W | w53 | 645 | 10.08 | AGAAAAATGCT | GAAAAAATTTG | AAAAATTTTC |
| YLR175W | c53 | 645 | 10.40 | GAAAAATTTT | CAAATTTTTTC | AGCATTTTCT |
| YLR175W | w53 | 646 | 9.72 | GAAAAATGCTG | AAAAAATTTGA | AAAATTTTCA |
| YLR175W | c53 | 646 | 10.07 | TGAAAAATTTT | TCAAATTTTTT | CAGCATTTTC |
| YLR175W | w53 | 655 | 17.09 | GAAAAAATTT | GAAAAATTTTC | AAATGATGAG |
| YLR175W | c53 | 655 | 17.16 | CTCATCATTT | GAAAAATTTTC | AAATTTTTTC |
| YLR175W | w53 | 656 | 10.85 | AAAAAATTTG | AAAAAATTTTC | AATGATGAGA |
| YLR175W | c53 | 656 | 10.96 | TCTCATCATT | TGAAAAATTTT | CAAATTTTTT |
| YOR310C | w53 | 664 | 13.31 | AAAGAAATTT | GGAAAAATTTT | CAACCTCATC |
| YOR310C | c53 | 664 | 13.32 | GATGAGGTTG | AAAAATTTTCC | AAATTTCTTT |
| YOR310C | w53 | 665 | 17.16 | AAGAAATTTG | GAAAAATTTTC | AACCTCATCG |
| YOR310C | c53 | 665 | 17.09 | CGATGAGGTT | GAAAAATTTTC | CAAATTTCTT |
| YOR310C | w53 | 684 | 11.63 | TCAACCTCAT | CGAAAAATTTT | AGAAAAGCAA |
| YOR310C | c53 | 684 | 11.59 | TTGCTTTTCT | GAAAAATTTTC | ATGAGGTTGA |
| YOR310C | w53 | 685 | 11.81 | CAACCTCATC | GAAAAATTTTC | GAAAATGCAAG |
| YOR310C | c53 | 685 | 11.89 | CTTGCTTTTC | TGAAAAATTTT | GATGAGGTTG |
| YLR449W | w53 | 716 | 12.04 | GAAGGGCATT | GAAAAATTTTAC | AGTGTTAAAA |
| YLR449W | c53 | 716 | 12.11 | TTTTAACACT | GTAAAAATTTT | AATGCCCTTC |
| YHR170W | w53 | 640 | 13.31 | TCTTGTAGTT | GGAAAAATTTT | TGAAGCTCAT |
| YHR170W | c53 | 640 | 13.32 | ATGAGCTTCA | AAAAATTTTCC | AACTACAAGA |
| YHR170W | w53 | 641 | 16.23 | CTTGTAGTTG | GAAAAATTTTTT | GAAGCTCATC |
| YHR170W | c53 | 641 | 16.13 | GATGAGCTTC | AAAAAATTTTC | CAACTACAAG |
| YBR143C | w53 | 631 | 16.16 | GACCCTGAAT | GAAAAATTTTTT | TCAGAAATCC |
| YBR143C | c53 | 631 | 16.20 | GGATTTCTGA | AAAAAATTTTC | ATTCCAGGGTC |
| YBR143C | w53 | 632 | 15.27 | ACCCTGAATG | AAAAAATTTTTT | CAGAAATCCA |
| YBR143C | c53 | 632 | 15.20 | TGGATTTCTG | AAAAAATTTTTT | CATTCCAGGGT |
| YBR143C | w53 | 633 | 12.04 | CCCTGAATGA | AAAAATTTTTTC | AGAAATCCAG |
| YBR143C | c53 | 633 | 11.85 | CTGGATTTCT | GAAAAAATTTTT | TCATTCCAGGG |
| YDR165W | w53 | 706 | 11.85 | TCGATGAGAT | GAAAAAATTTTT | TTACTAGTAA |
| YDR165W | c53 | 706 | 12.04 | TTACTAGTAA | AAAAATTTTTTC | ATCTCATCGA |
| YDR165W | w53 | 707 | 15.20 | CGATGAGATG | AAAAAATTTTTT | TACTAGTAAA |
| YDR165W | c53 | 707 | 15.27 | TTTACTAGTA | AAAAAATTTTTT | CATCTCATCG |
| YDR165W | w53 | 708 | 15.27 | GATGAGATGA | AAAAAATTTTTT | ACTAGTAAAG |
| YDR165W | c53 | 708 | 15.20 | CTTTACTAGT | AAAAAATTTTTT | TCATCTCATC |
| YDR398W | w53 | 613 | 10.89 | GCTTCTTGAC | AAAAAATTTTTT | ATCCAATTTT |
| YDR398W | c53 | 613 | 11.11 | AAAATTGGAT | AAAAATTTTTTT | GTCAAGAAGC |
| YDR398W | w53 | 614 | 13.66 | CTTCTTGACA | AAAAAATTTTTA | TCCAATTTTT |
| YDR398W | c53 | 614 | 13.88 | AAAAATTGGA | TAAAAATTTTTT | TGTCAAGAAG |
| YDR398W | w53 | 615 | 10.15 | TTCTTGACAA | AAAAAATTTTAT | CCAATTTTTT |
| YDR398W | c53 | 615 | 10.23 | AAAAAATTGG | ATAAAAATTTTT | TTGTCAAGAA |
| YPR190C | w53 | 663 | 13.35 | GGGAATGATC | AGAAATTTTTTC | AAAAGCTCAT |
| YPR190C | c53 | 663 | 13.28 | ATGAGCTTTT | GAAAAATTTCT | GATCATTTCC |
| YPR190C | w53 | 774 | 16.16 | CAGGAATAGG | GAAAAAATTTTT | GTTGAGCAAG |
| YPR190C | c53 | 774 | 16.20 | CTTGCTCAAC | AAAAAATTTTTC | CCTATTCTCG |
| YPR190C | w53 | 775 | 13.51 | AGGAATAGGG | AAAAAATTTTTG | TTGAGCAAGA |
| YPR190C | c53 | 775 | 13.55 | TCTTGCTCAA | CAAAAAATTTTT | CCCTATTCTC |
| YCR072C | w53 | 673 | 14.61 | AGAAACCGGT | GAAAAAATTTTA | AAATGAAAAA |
| YCR072C | c53 | 673 | 14.81 | TTTTTCATTT | TAAAAATTTTTT | ACCGGTTTCT |
| YJL069C | w53 | 713 | 11.81 | AACGAAAAAT | AAAAAATTTTC | ACCTCATCTC |
| YJL069C | c53 | 713 | 12.07 | GAGATGAGGT | GAAATTTTTTTT | ATTTTTCGTT |
| YJL069C | w53 | 714 | 10.78 | ACGAAAAATA | AAAAAATTTTCA | CCTCATCTCA |
| YJL069C | c53 | 714 | 11.04 | TGAGATGAGG | TGAAATTTTTT | TATTTTTCGT |
| YDL201W | w53 | 663 | 14.39 | AAAAAAAAT | GAAAAATTTTTG | GTGATGACTT |
| YDL201W | c53 | 663 | 14.56 | AAGTCATCAC | CAAAATTTTTT | ATTTTTTTTT |
| YDL201W | c53 | 664 | 9.74 | GAAGTCATCA | CAAAAATTTTTT | CATTTTTTTTT |
| YDL201W | w53 | 687 | 10.17 | ATGACTTCAG | CAAAAAATTTT | AGGATATTTT |
| YDL201W | c53 | 687 | 10.31 | GAAATATCCT | GAAATTTTTTG | CTGAAGTCAT |
| YDL201W | w53 | 688 | 10.78 | TGACTTCAGC | AAAAAATTTTCA | GGATATTTCT |
| YDL201W | c53 | 688 | 11.04 | AGAAATATCC | TGAAATTTTTT | GCTGAAGTCA |
| YDL201W | w53 | 773 | 11.16 | TTCCCATAGG | ATAAAAATTTTT | AAGCGTTTAT |
| YDL201W | c53 | 773 | 11.11 | ATAAACGCTT | GAAAAATTTTAT | CCTATGGGAA |
| YHR065C | w53 | 258 | 13.55 | TAGGTCTCTT | CAAAAAATTTTT | TGATATCTCT |
| YHR065C | c53 | 258 | 13.51 | AGAGATATCA | AAAAAATTTTTG | AAGAGACCTA |
| YHR065C | w53 | 259 | 15.27 | AGGTCTCTTC | AAAAAATTTTTT | GATATCTCTA |
| YHR065C | c53 | 259 | 15.20 | TAGAGATATC | AAAAAATTTTTT | GAAGAGACCT |
| YHR065C | w53 | 769 | 11.73 | TTTTTTCAGT | GAAAAATTTTCA | ATTTTCGTCTA |
| YHR065C | c53 | 769 | 11.96 | TAGACGAAAT | TGAAATTTTTT | ACTGAAAAAA |
| YLL011W | w53 | 596 | 9.72 | TAGAGGGCTA | GTAAAAATTTTA | GTTTTTAAAT |
| YLL011W | w53 | 693 | 10.68 | ACATTTTTTTT | GAAAAATTTTGA | TATTGAAAAA |
| YLL011W | c53 | 693 | 11.00 | TTTTTCAATA | TCAAATTTTTTC | AAAAAATGT |

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| YER126C | w53 | 607 | 13.66 | GGAAAGCGT | AAAAATTTTA | TGTCGTCGGC |
| YER126C | c53 | 607 | 13.88 | GCCGACGACA | TAAAAATTTTT | ACGCCTTTC |
| YER126C | w53 | 608 | 10.15 | GAAAGCGTA | AAAAATTTTAT | GTCGTCGGCA |
| YER126C | c53 | 608 | 10.23 | TGCCGACGAC | ATAAAAATTTTT | TACGCCTTTC |
| YER126C | w53 | 651 | 17.09 | ACAATCCGAT | GAAAAATTTTC | CGGACAGCGA |
| YER126C | c53 | 651 | 17.16 | TCGCTGTCCG | GAAAAATTTTC | ATCGGATTGT |
| YER126C | w53 | 652 | 13.32 | CAATCCGATG | AAAAATTTTCC | GGACAGCGAT |
| YER126C | c53 | 652 | 13.31 | ATCGCTGTCC | GGAAAAATTTTT | CATCGGATTG |
| YDR087C | c53 | 692 | 9.83 | GTTTATATTT | GACAATTTTTT | TCAGCTCATC |
| YDL153C | w53 | 660 | 17.09 | CAGGGCGGAT | GAAAAATTTTC | AAACTGCGCT |
| YDL153C | c53 | 660 | 17.16 | AGCGCAGTTT | GAAAAATTTTC | ATCCGCCCTG |
| YDL153C | w53 | 661 | 10.85 | AGGGCGGATG | AAAAATTTTCA | AACTGCGCTT |
| YDL153C | c53 | 661 | 10.96 | AAGCGCAGTT | TGAAAAATTTTT | CATCCGCCCT |
| YPR142C | w53 | 458 | 13.55 | TAACTAAATC | CAAAAAATTTTT | CTTTGGAAAC |
| YPR142C | c53 | 458 | 13.51 | GTTTCCAAAG | AAAAATTTTTG | GATTTAGTTA |
| YPR142C | w53 | 459 | 16.20 | AACTAAATCC | AAAAATTTTTC | TTTGGAAACT |
| YPR142C | c53 | 459 | 16.16 | AGTTTCCAAA | GAAAAATTTTT | GGATTTAGTT |
| YPR143W | w53 | 680 | 11.55 | CCCTCTTATT | GGAAAAATTTTG | AAAGAAAAAA |
| YPR143W | c53 | 680 | 11.68 | TTTTTTCTTT | CAAAAATTTTC | AATAAGAGGG |
| YPR143W | w53 | 681 | 10.76 | CCTCTTATTG | GAAAAATTTGA | AAGAAAAAAA |
| YPR143W | c53 | 681 | 10.92 | TTTTTTCTTT | TCAAAAATTTTC | CAATAAGAGG |
| YPL146C | w53 | 652 | 16.13 | TAATTCATC | AAAAATTTTTC | CGTGCCCGAG |
| YPL146C | c53 | 652 | 16.23 | CTCGGGCACG | GAAAAATTTTT | GATGGAAATTA |
| YPL146C | w53 | 653 | 13.32 | AATTCATCA | AAAAATTTTCC | GTGCCCGAGC |
| YPL146C | c53 | 653 | 13.31 | GCTCGGGCAC | GGAAAAATTTTT | TGATGGAAAT |
| YKL172W | w53 | 687 | 10.96 | TCATCGGGAC | TGAAAAATTTTT | TATTTCTGCC |
| YKL172W | c53 | 687 | 10.85 | GGCAGAAATA | AAAAATTTTCA | GTCCCGATGA |
| YKL172W | w53 | 688 | 16.23 | CATCGGGACT | GAAAAATTTTT | ATTTCTGCCT |
| YKL172W | c53 | 688 | 16.13 | AGGCAGAAAT | AAAAATTTTTC | AGTCCCGATG |
| YNL308C | w53 | 357 | 10.89 | TTGGAAAAGA | AAAAAAATTTTT | TTGGAATAAA |
| YNL308C | c53 | 357 | 11.11 | TTTATTCCAA | AAAAATTTTTT | TCTTTTCCAA |
| YNL308C | w53 | 358 | 15.20 | TGGAAAAGAA | AAAAAAATTTTT | TGGAATAAAA |
| YNL308C | c53 | 358 | 15.27 | TTTTATTCCA | AAAAATTTTTT | TTCTTTTCCA |
| YNL308C | w53 | 359 | 15.27 | GGAAAAGAAA | AAAAATTTTTT | GGAATAAAAT |
| YNL308C | c53 | 359 | 15.20 | ATTTTATTCC | AAAAAAATTTTT | TTTCTTTTCC |
| YNL308C | w53 | 692 | 14.81 | GGTCATCGGT | TAAAAATTTTC | AAATCAATCA |
| YNL308C | c53 | 692 | 14.61 | TGATATATTT | GAAAAATTTTA | ACCGATGACC |
| YKL082C | w53 | 368 | 10.89 | ACTGTTGATG | AAAAAAATTTTT | TCTTTCAATT |
| YKL082C | c53 | 368 | 11.11 | AATTGAAAAG | AAAAATTTTTT | CATCAACAGT |
| YKL082C | w53 | 369 | 15.20 | CTGTTGATGA | AAAAAAATTTTT | CTTTCAATTT |
| YKL082C | c53 | 369 | 15.27 | AAATGAAAAG | AAAAATTTTTT | TCATCAACAG |
| YKL082C | w53 | 370 | 16.20 | TGTTGATGAA | AAAAATTTTTC | TTTCAATTTT |
| YKL082C | c53 | 370 | 16.16 | AAAATTGAAA | GAAAAATTTTT | TTCATCAACA |
| YKL082C | w53 | 635 | 10.96 | GACACCAAAT | TGAAAAATTTTT | TAAATGAAT |
| YKL082C | c53 | 635 | 10.85 | ATTCATTTTA | AAAAATTTTCA | ATTTGGTGTC |
| YKL082C | w53 | 636 | 16.23 | ACACCAAATT | GAAAAATTTTT | AAAATGAATT |
| YKL082C | c53 | 636 | 16.13 | AATTCATTTT | AAAAAAATTTTT | AATTTGGTGT |
| YGR272C | w53 | 696 | 10.89 | AAACACATTC | AAAAAAATTTTT | CATACTATCT |
| YGR272C | c53 | 696 | 11.11 | GATGAGTATG | AAAAATTTTTT | GAATGTGTTT |
| YGR272C | w53 | 697 | 16.13 | AACACATTCA | AAAAATTTTTC | ATACTCATCT |
| YGR272C | c53 | 697 | 16.23 | AGATGAGTAT | GAAAAATTTTT | TGAATGTGTT |
| YGR272C | w53 | 698 | 10.85 | ACACATTCOA | AAAAATTTTCA | TACTCATCTC |
| YGR272C | c53 | 698 | 10.96 | GAGATGAGTA | TGAAAAATTTTT | TTGAATGTGT |
| YGL029W | w53 | 676 | 11.16 | AAGCGATGAG | ATAAAATTTTC | AGGAATCCAT |
| YGL029W | c53 | 676 | 11.11 | ATGGATTCTT | GAAAAATTTTAT | CTCATCGCTT |
| YPL266W | w53 | 640 | 16.16 | TTAGAGGGTA | GAAAAATTTTT | GAAAAATCGG |
| YPL266W | c53 | 640 | 16.20 | CGCGATTTTC | AAAAATTTTTC | TACCCTTAA |
| YPL266W | w53 | 641 | 13.51 | TAGAGGGTAG | AAAAATTTTTG | AAAATCGCGA |
| YPL266W | c53 | 641 | 13.55 | TCGCGATTTT | CAAAAAATTTTT | CTACCCTCTA |
| YPL266W | w53 | 675 | 10.16 | GCTGAAAATT | GAAAAATTTTG | GTTATAACAT |
| YPL266W | c53 | 675 | 10.32 | ATGTTATAAC | CAAAATTTTTT | AATTTTTCAGC |
| YOL077C | w53 | 640 | 14.61 | AAAGGTGACT | GAAAAATTTTA | GATGCTCATC |
| YOL077C | c53 | 640 | 14.81 | GATGAGCATC | TAAAAATTTTT | AGTCACCTTT |
| YBR142W | w53 | 666 | 10.61 | CTTTTCTCT | GAAAAACTTTT | CCAGCGATGA |
| YBR142W | c53 | 666 | 10.68 | TCATCGCTGG | AAAAAGTTTTT | AGAGAAAAAG |
| YBR142W | w53 | 667 | 11.53 | TTTTTCTCTG | AAAAACTTTTC | CAGCGATGAG |
| YBR142W | c53 | 667 | 11.52 | CTCATCGCTG | GAAAAAGTTTT | CAGAGAAAAA |
| YBR034C | w53 | 678 | 13.31 | GGAAATGGCG | GGAAAAATTTTT | TCACAAGGG |
| YBR034C | c53 | 678 | 13.32 | CCCTTTGTGA | AAAAATTTTCC | CGCCATTTCC |
| YBR034C | w53 | 679 | 16.23 | GAAATGGCGG | GAAAAATTTTT | CACAAAGGGA |
| YBR034C | c53 | 679 | 16.13 | TCCCTTTGTG | AAAAAAATTTTC | CCGCCATTTT |

| | | | | | | |
|---------|-----|-----|-------|------------|-------------|------------|
| YBR034C | w53 | 680 | 12.04 | AAATGGCGGG | AAAAATTTTTC | ACAAAGGGAA |
| YBR034C | c53 | 680 | 11.85 | TTCCCTTGT | GAAAAAATTTT | CCCGCCATTT |
| YLR435W | w53 | 621 | 9.65 | AAAGAATCTA | AAAAAACTTTT | CTTTGAATAA |
| YLR435W | c53 | 621 | 9.75 | TTATTCAAAG | AAAAGTTTTTT | TAGATTCTTT |
| YLR435W | w53 | 622 | 11.53 | AAGAATCTAA | AAAAACTTTTC | TTTGAATAAT |
| YLR435W | c53 | 622 | 11.52 | ATTATTCAAA | GAAAAGTTTTT | TTAGATTCTT |
| YGR187C | w53 | 638 | 10.07 | AAGGGCTTTT | TCAAATTTTTT | TTTTTTTCAT |
| YGR187C | c53 | 638 | 9.72 | ATGAAAAAAA | AAAAAATTTGA | AAAAGCCCTT |
| YHR089C | w53 | 662 | 16.16 | TTTTGTAGT | GAAAAATTTTT | CGAGATGAGG |
| YHR089C | c53 | 662 | 16.20 | CCTCATCTCG | AAAAATTTTTT | ACTACAAAAA |
| YHR089C | w53 | 663 | 16.20 | TTTTGTAGTG | AAAAATTTTTT | GAGATGAGGA |
| YHR089C | c53 | 663 | 16.16 | TCCTCATCTC | GAAAAATTTTT | CACTACAAAA |
| YCR057C | w53 | 634 | 11.04 | GAGTTCCTTT | TGAAATTTTTT | GGAAAAATTT |
| YCR057C | c53 | 634 | 10.78 | AAATTTTTC | AAAAAATTTCA | AAAAGAATTC |
| YCR057C | w53 | 635 | 10.31 | AGTTCCTTTT | GAAATTTTTTG | GAAAAATTTT |
| YCR057C | c53 | 635 | 10.17 | AAAATTTTTC | CAAAAAATTTT | AAAAAGAATC |
| YCR057C | w53 | 646 | 14.39 | AAATTTTGTG | GAAAAATTTTG | CGATGAGCTG |
| YCR057C | c53 | 646 | 14.56 | CAGCTCATCG | CAAAATTTTTT | CAAAAAATTT |
| YCR057C | w53 | 647 | 12.27 | AATTTTTTGG | AAAAATTTTGC | GATGAGCTGA |
| YCR057C | c53 | 647 | 12.35 | TCAGCTCATC | GCAAAATTTTT | CCAAAAAATT |
| YBL068W | w53 | 35 | 10.89 | TCGAAGAAAA | GAAAATTTCTC | AGTATGATCC |
| YBL068W | c53 | 35 | 10.85 | GGATCATACT | GAGAAATTTTC | TTTTCTTCGA |
| YBL068W | c53 | 260 | 9.63 | TAATAGACCC | GAACATTTTTT | TTGCATTGGC |
| YBL068W | w53 | 780 | 12.85 | AAATCCTGAC | GAAAAATTTTC | AAGGTCCTAT |
| YBL068W | c53 | 780 | 12.92 | ATAGGACCTT | GAAATATTTTC | GTCAGGATTT |

log-odds matrix: alength= 4 w= 11 n= 116920 bayes= 9.62388

| | | | |
|--------|--------|--------|--------|
| 0.153 | -1.493 | 1.112 | -1.239 |
| 1.565 | -2.245 | -1.282 | -3.405 |
| 1.786 | -4.613 | -4.453 | -4.980 |
| 1.790 | -5.742 | -5.793 | -3.951 |
| 1.725 | -6.336 | -3.796 | -2.436 |
| 0.781 | -3.810 | -3.854 | 0.857 |
| -2.512 | -3.752 | -6.380 | 1.801 |
| -4.027 | -5.749 | -5.786 | 1.866 |
| -5.056 | -4.409 | -4.657 | 1.862 |
| -3.481 | -1.238 | -2.289 | 1.641 |
| -1.315 | 1.156 | -1.537 | 0.229 |

letter-probability matrix: alength= 4 w= 11 n= 116920

| | | | |
|----------|----------|----------|----------|
| 0.313234 | 0.078892 | 0.494635 | 0.113239 |
| 0.833834 | 0.046820 | 0.094109 | 0.025237 |
| 0.972004 | 0.009073 | 0.010453 | 0.008470 |
| 0.974441 | 0.004147 | 0.004128 | 0.017283 |
| 0.931385 | 0.002749 | 0.016476 | 0.049391 |
| 0.484176 | 0.015824 | 0.015824 | 0.484176 |
| 0.049391 | 0.016476 | 0.002749 | 0.931385 |
| 0.017283 | 0.004128 | 0.004147 | 0.974441 |
| 0.008470 | 0.010453 | 0.009073 | 0.972004 |
| 0.025237 | 0.094109 | 0.046820 | 0.833834 |
| 0.113239 | 0.494635 | 0.078892 | 0.313234 |

Time 5008.31 secs.

MOTIF 2 width = 11 sites = 137.8

Simplified A 13:9::9:421
motif letter- C 16:1:1::4:1
probability G 7:9::9:9115
matrix T 11::a::1:83

bits 2.2
2.0
1.7
1.5 * **
Information 1.3 * ****
content 1.1 * *****
(11.8 bits) 0.9 * ***** *
0.7 * ***** *
0.4 * *****
0.2 * *****
0.0 -----

Multilevel GCGATGAGCTG
consensus A A T
sequence

Motif 2 in BLOCKS format

BL MOTIF 2 width=11 seqs=148
YLR397C (472) AAGATGAGCAG 0.932261
YKR092C (733) GCGATGAGTTC 0.703067
YJR071W (114) TCGTTGAGGTA 0.593946
YNL075W (673) GCGATGAGATG 0.999088
YNL114C (365) GCGATGAGCAT 0.989649
YNL113W (672) GCGATGAGCTG 0.99902
YNL022C (733) TCGATGAGGTT 0.513686
YLR186W (791) ATCGTAGGTCA 0.337679
YDR184C (791) CGTGAAGATAA 0.178304
YPL211W (678) GCGATGAGCTT 0.99863
YFL002C (732) AAGATGAGCTG 0.902238
YPR144C (791) GTCAAAGAATA 0.465007
YHR196W (690) ACGATGAGATG 0.982668
YIR012W (735) TCGATGGGCTT 0.823744
YLR401C (728) GTGATGAGATG 0.505223
YMR093W (343) GTGCTGAGTTG 0.527184
YDL167C (791) TACAGAAATTA 0.472583
YDR365C (791) TCTTCAATTTT 0.497697
YCL054W (678) GCGATGCCCAT 0.589874
YNL061W (791) TTTCTATTAT 0.200414
YOR294W (678) GTGATGAGATG 0.980353
YOR145C (698) GTGATGAGCAT 0.852186
YHR169W (791) TCTTGAAAAGT 0.400925
YJL122W (758) TCGATGAGGTG 0.662309
YNL141W (638) GCGATGAGGTC 0.977223
YER110C (564) GCGATGAGATG 0.956871
YJR041C (657) GAGATGAGCTA 0.991749
YDR341C (619) GCGATGAGTAA 0.575801
YOR168W (311) ACGACGAGCTT 0.593427
YMR308C (179) AAGATGAGCAA 0.745466
YDR385W (62) GCGGTGAGATT 0.823114
YGR264C (502) GTGATGATAAT 0.659546
YPL226W (185) GCGTTGAGATT 0.883498
YDR091C (638) GCGATGCGATT 0.977335
YLR249W (640) GAGATGAGATA 0.703903
YGL120C (679) GAGATGAGGTG 0.995194
YMR217W (596) GCGATGAGCAT 0.984908

| | | | |
|---------|--------|-------------|----------|
| YPL183C | (730) | ACGATGAGGTC | 0.860161 |
| YNL313C | (724) | TCGATGAGCTT | 0.981613 |
| YJL109C | (699) | GCGATGAGCTA | 0.999204 |
| YCL037C | (666) | GCGATGAGCAT | 0.834415 |
| YMR229C | (648) | GAGATGAGCTA | 0.817123 |
| YBR084W | (791) | TTTCCTTTTAG | 0.45071 |
| YHR020W | (791) | AAATCAAATA | 0.337712 |
| YMR049C | (706) | GCGATGAGCTT | 0.999077 |
| YDR412W | (677) | GTGATGAGGAT | 0.657146 |
| YDR312W | (677) | TCGATGAGATG | 0.985956 |
| YKL078W | (728) | GAGATGAGATG | 0.656157 |
| YOR243C | (734) | TCGATGAGCTG | 0.980143 |
| YDR465C | (696) | GAGATGAGATG | 0.636603 |
| YFR001W | (680) | GCGATGAGGTG | 0.93961 |
| YDR361C | (668) | GCGATGAGATT | 0.986602 |
| YKL099C | (669) | GCGATGAGCTC | 0.918836 |
| YBL028C | (404) | GCGATGAGAAC | 0.968972 |
| YIL127C | (791) | CTAGGCCAAAA | 0.192602 |
| YHR066W | (701) | GCGATGAGATG | 0.848292 |
| YHR197W | (5) | GCGATGAGAGA | 0.907939 |
| YOR272W | (661) | GCGATGAGATG | 0.959638 |
| YJR070C | (657) | TCGATGAGCTG | 0.921691 |
| YLR222C | (705) | GCGATGAGCTG | 0.996545 |
| YGR123C | (690) | CAGATGAGGTA | 0.937548 |
| YKL181W | (582) | TCGATGACCTT | 0.768588 |
| YCL059C | (698) | GCGATGAGATA | 0.969178 |
| YKR081C | (679) | GCGATGAGCTA | 0.97006 |
| YKL021C | (139) | CAGATGAGATT | 0.93894 |
| YNL110C | (688) | GAGATGAGATG | 0.622607 |
| YLR221C | (672) | GTGATGAGCTC | 0.834558 |
| YDR413C | (438) | TTGCTGAGGTT | 0.822177 |
| YJL148W | (689) | TCGATGAGCAT | 0.958258 |
| YCR016W | (709) | GAGATGAGCTA | 0.992164 |
| YLR003C | (791) | TGAGCTGAAAA | 0.130556 |
| YHR052W | (675) | GCGATGAGCTC | 0.996615 |
| YKL009W | (683) | GCGATGAGCTT | 0.999318 |
| YNL002C | (699) | GCGATGAGATG | 0.990001 |
| YDR101C | (719) | GAGATGAGATG | 0.76976 |
| YDR324C | (791) | AAAGCTACGAA | 0.294863 |
| YDR083W | (791) | CTATAACTTTA | 0.212243 |
| YGL099W | (732) | GTGATGAGCTT | 0.964437 |
| YGL111W | (453) | ACGATGACGTG | 0.70906 |
| YDL051W | (710) | GCGATGAGATG | 0.863155 |
| YMR131C | (696) | GCGATGAGATG | 0.993469 |
| YPR110C | (716) | GCGATGAGTTG | 0.978518 |
| YMR290C | (693) | GCGATGAGATG | 0.912377 |
| YBL039C | (642) | GAGATGAGCTG | 0.841261 |
| YML093W | (706) | GCGATGAGCTG | 0.997047 |
| YGL078C | (655) | GCGATGAGGTG | 0.518831 |
| YLL008W | (680) | GCGATGAGATG | 0.944239 |
| YER006W | (696) | GCGATGAGATG | 0.908081 |
| YDR496C | (705) | GAGATGAGATG | 0.978831 |
| YGR145W | (714) | GAGATGAGATG | 0.504787 |
| YGR245C | (653) | GCGATGAGATG | 0.992309 |
| YNL175C | (700) | GCGATGAGCAT | 0.844313 |
| YNL174W | (578) | CAGATGATCTG | 0.695028 |
| YLR196W | (666) | TCGATGAGCTG | 0.765989 |
| YOR206W | (673) | CCGATGAGATG | 0.744532 |
| YGR103W | (670) | GCGATGAGATG | 0.750288 |
| YLR276C | (791) | TTTTTTTGATC | 0.249035 |
| YGR160W | (352) | GAGAAGAGAAG | 0.819238 |
| YNL182C | (383) | GTGCTGAGCTC | 0.846495 |
| YLR409C | (688) | GCGATGAGATT | 0.82873 |
| YLR129W | (672) | GCGATGAGCAG | 0.845543 |
| YLR002C | (791) | TTATFACTATG | 0.359005 |
| YNL132W | (653) | GAGATGAGATG | 0.655706 |
| YNL248C | (669) | GCGATGAGCTG | 0.987875 |
| YGR128C | (709) | GAGATGAGGTC | 0.652633 |
| YLR009W | (597) | GAGATGAGATG | 0.956635 |
| YNL062C | (791) | TTAGTGCACAA | 0.106704 |
| YGL171W | (694) | GCGATGAGATG | 0.987668 |

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|---------|--------|-------------|-----------|
| YKR056W | (791) | CAAAGTCATTA | 0.354077 |
| YBR247C | (679) | TCGATGAGCTC | 0.989144 |
| YJR002W | (724) | GCGATGAGCTC | 0.996809 |
| YLR198C | (791) | ACACAAAAAGA | 0.303522 |
| YOR309C | (59) | GCCATGAGATG | 0.987548 |
| YLR197W | (672) | GTGATGAGATG | 0.764909 |
| YLR175W | (668) | ATGATGAGATG | 0.850844 |
| YOR310C | (676) | TCGATGAGGTT | 0.846629 |
| YLR449W | (3) | GCGATGACCTG | 0.983887 |
| YHR170W | (653) | GCGATGAGCTT | 0.946945 |
| YBL024W | (791) | CACTATAAGGA | 0.0967023 |
| YBR143C | (288) | GATATGAGCAG | 0.887489 |
| YDR165W | (696) | TCGATGAGATG | 0.928766 |
| YDR398W | (668) | GCGATGAGGTG | 0.988762 |
| YPR190C | (676) | GCGATGAGCTT | 0.988785 |
| YCR072C | (707) | GCGATGAGCTT | 0.996224 |
| YJL069C | (791) | TTGTGCGACTA | 0.403053 |
| YDL201W | (631) | TCGCTGAGATA | 0.82982 |
| YHR065C | (719) | GCGATGAGATG | 0.84824 |
| YLL011W | (717) | TCGATGAGTTT | 0.725733 |
| YER126C | (668) | GCGATGAGATG | 0.979235 |
| YDR087C | (680) | GCGATGAGCTG | 0.982265 |
| YDL153C | (708) | GAGATGAGCTT | 0.632841 |
| YPR142C | (609) | GCGCTCAGAAA | 0.583736 |
| YPR143W | (189) | GCGATTAGGTG | 0.830993 |
| YPL146C | (710) | GCGATGGGGTC | 0.971185 |
| YKL172W | (719) | GAGATGAGCTT | 0.836818 |
| YNL308C | (712) | GAGATGAGATT | 0.713756 |
| YKL082C | (704) | GAGATGAGATG | 0.915763 |
| YGR272C | (713) | GAGATGAGATG | 0.993907 |
| YGL029W | (791) | ACCAGGAAATA | 0.259849 |
| YPL266W | (658) | GCGATGAGCTG | 0.998983 |
| YOL077C | (652) | GCGATGAGCAT | 0.901442 |
| YBR142W | (680) | GCGATGAGCTT | 0.990445 |
| YBR034C | (726) | GAGATGAGCTG | 0.997714 |
| YLR435W | (586) | CAGCTGAGCTA | 0.53631 |
| YGR187C | (674) | GAGATGAGAGA | 0.786725 |
| YHR089C | (612) | GTGATCAGATG | 0.636533 |
| YCR057C | (791) | CCGCATCCCAA | 0.268062 |
| YBL068W | (689) | CCGATGATATC | 0.911188 |

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Possible examples of motif 2 in the training set

| Sequence name | strand | Start | Score | Site |
|---------------|--------|-------|-------|------------------------------------|
| YLR397C | w53 | 472 | 10.65 | ATTACATATG AAGATGAGCAG GGCTCAAGAG |
| YKR092C | c53 | 661 | 9.82 | GTATGCTCGA GCGATGGGAAG GTTTTTTCTT |
| YKR092C | c53 | 733 | 11.88 | GTATAAAAGT GCGATGAGTTC AATCATCAAG |
| YNL075W | w53 | 673 | 17.26 | TCCCGGAAAT GCGATGAGATG AAAATGCATG |
| YNL114C | w53 | 365 | 14.16 | AAAATTTTCT GCGATGAGCAT CGGCGTAAAA |
| YNL113W | w53 | 672 | 17.73 | ATATTCACCT GCGATGAGCTG GAAAAAAAAA |
| YNL022C | w53 | 733 | 12.09 | CCTAAAATAT TCGATGAGGTT AAGAGAAGAG |
| YNL022C | w53 | 746 | 11.10 | ATGAGGTTAA GAGAAGAGCTG GTTCTTCACC |
| YDR184C | w53 | 633 | 17.26 | TTCCACTTTA GCGATGAGATG AAAAAATTTCC |
| YPL211W | w53 | 678 | 16.59 | TTTGAAATAT GCGATGAGCTT AGAACTAAAG |
| YFL002C | w53 | 732 | 13.08 | TGAGCTTTTC AAGATGAGCTG AGCCCATTGA |
| YPR144C | w53 | 271 | 12.84 | TACTTGTGTA CAGATGAGATG ACTACTCCCA |
| YPR144C | w53 | 722 | 12.13 | TATTACGGTT TTGATGAGATG AGATGAGATG |
| YPR144C | w53 | 727 | 16.04 | CGGTTTTGAT GAGATGAGATG AGATGTAATT |
| YPR144C | w53 | 732 | 16.04 | TTGATGAGAT GAGATGAGATG TAATTATCAT |
| YHR196W | w53 | 690 | 13.84 | GAAAAATTTA ACGATGAGATG GAGTTTTCAA |
| YLR401C | w53 | 728 | 14.71 | CGAATGTGTA GTGATGAGATG AGCAGTAAATG |
| YLR401C | w53 | 733 | 14.07 | GTGTAGTGAT GAGATGAGCAG TAATGAAACA |
| YDR365C | c53 | 674 | 16.04 | AATTTGAGAT GAGATGAGATG AAATTTTTTTC |
| YDR365C | c53 | 679 | 16.04 | TGATGAATTT GAGATGAGATG AGATGAAATT |
| YNL061W | c53 | 578 | 13.22 | AAAAAAAAAAG TCGATGAGGTG TATAATAACA |
| YNL061W | c53 | 667 | 17.26 | AACTTATTCT GCGATGAGATG AAAATTTTTTT |
| YNL061W | w53 | 689 | 13.08 | GAATAAGTTT AAGATGAGCTG AGCTGCAAAAT |
| YNL061W | w53 | 694 | 13.55 | AGTTTAAGAT GAGCTGAGCTG CAAATACAGT |

| | | | | | | |
|---------|-----|-----|-------|------------|-------------|-------------|
| YOR294W | w53 | 678 | 14.71 | ATTTTTCCAA | GTGATGAGATG | AGCCTTTAAC |
| YOR145C | c53 | 698 | 11.61 | ATCTTTCATT | GTGATGAGCAT | CGGTATGATA |
| YHR169W | c53 | 661 | 13.64 | TTTACAATCC | GCGATGAGGTA | AAAATTTTTT |
| YJL122W | c53 | 673 | 15.47 | AAAAAATTTT | GCGATGAGATC | ATTCCAAACG |
| YJL122W | w53 | 758 | 13.22 | GCGGCATTAG | TCGATGAGGTG | CTTGCCGAAG |
| YNL141W | c53 | 638 | 14.01 | TCGTTGGCAT | GCGATGAGGTC | AGTTTCCTGC |
| YER110C | w53 | 564 | 17.26 | AATGAAAGC | GCGATGAGAT | AGGTCGAAAA |
| YER110C | w53 | 569 | 12.79 | AAAGCGCGAT | GAGATGAGGTC | GAAAAAATAA |
| YJR041C | c53 | 657 | 14.34 | CGATCATTTT | GAGATGAGCTA | AGTGAAATTT |
| YDR385W | w53 | 62 | 11.13 | TATGCCAGCT | GCGGTGAGATT | ATGGTTGGAG |
| YPL226W | c53 | 185 | 10.88 | AAAAATGAGA | GCGTTGAGATT | CCTGATTGAG |
| YDR091C | c53 | 638 | 11.09 | TTGCTAGCGA | GCGATGCGATT | GAGAAAAATA |
| YLR249W | c53 | 640 | 13.88 | TATGAAAGAT | GAGATGAGATA | ATTATACTCG |
| YLR249W | c53 | 645 | 12.62 | TCTTATATGA | AAGATGAGATG | AGATAATTAT |
| YGL120C | w53 | 679 | 14.58 | TTTCAAATGC | GAGATGAGGTG | AAAAGAAACT |
| YMR217W | w53 | 596 | 14.16 | TTTTTCTTTG | GCGATGAGCAT | CGAGAAAAAA |
| YPL183C | c53 | 730 | 10.58 | AAGCTAAATA | ACGATGAGGTC | CGCTAGCAGA |
| YNL313C | c53 | 724 | 14.01 | TCCTTTGGCC | TCGATGAGCTT | CCATTTTCAA |
| YJL109C | w53 | 699 | 15.56 | TTTTCAGTTA | GCGATGAGCTA | GATATTTTCG |
| YCL037C | c53 | 666 | 14.16 | TGAAAAATTT | GCGATGAGCAT | CCCTCAAAAT |
| YMR229C | w53 | 643 | 12.62 | GAAAAATTTT | AAGATGAGATG | AGCTAAACCC |
| YMR229C | w53 | 648 | 14.34 | ATTTTAAGAT | GAGATGAGCTA | AACCCTTCTA |
| YMR049C | w53 | 706 | 16.59 | TTTTGGTTTT | GCGATGAGCTT | ATAATTACAC |
| YDR312W | c53 | 677 | 14.68 | TACAAGCCCG | TCGATGAGATG | CATCTCAACT |
| YKLO78W | c53 | 259 | 9.89 | CCTCTTCTAG | GAGATGGGATT | GCAGATTTAT |
| YKLO78W | w53 | 723 | 14.68 | AAAATTCTGC | TCGATGAGATG | AGATGAGGTT |
| YKLO78W | w53 | 728 | 16.04 | TCTGCTCGAT | GAGATGAGATG | AGGTTATGAT |
| YKLO78W | w53 | 733 | 13.45 | TCGATGAGAT | GAGATGAGGTT | ATGATATATA |
| YOR243C | c53 | 734 | 15.15 | TTATAATTAA | TCGATGAGCTG | TACCTATTGA |
| YDR465C | c53 | 691 | 15.37 | AAAATGAGAT | GAGATGAGCTT | TGAAAAATTT |
| YDR465C | c53 | 696 | 16.04 | AGCTTAAAA | GAGATGAGATG | AGCTTTGAAA |
| YFR001W | c53 | 567 | 12.42 | TCTTGATAAT | GAGATGAGGTA | ATTACAAGAG |
| YFR001W | w53 | 680 | 15.80 | TGAAGTAACG | GCGATGAGGTG | AAGTTTTTTTT |
| YDR361C | w53 | 379 | 9.77 | TCGAATACCT | GTGATGAGATG | GACTTTACGT |
| YDR361C | w53 | 668 | 16.13 | TATATTCCTC | GCGATGAGATT | GAGGTAGAAA |
| YKLO99C | w53 | 664 | 12.13 | TTTTTATGGC | TAGATGAGCTC | ATCGCGATTT |
| YKLO99C | c53 | 669 | 15.93 | TCTTCAAATC | GCGATGAGCTC | ATCTAGCCAT |
| YKLO99C | c53 | 738 | 11.06 | CTAGTATTAT | TCGATGATATG | CAACTTGCTC |
| YBL028C | w53 | 404 | 13.04 | AATTCCCAT | GCGATGAGAAC | GTAGGCGAGA |
| YIL127C | w53 | 686 | 16.59 | GAAAAATTTT | GCGATGAGCTT | TAACCAAGGA |
| YHR066W | c53 | 696 | 15.37 | ATATCGCGAT | GAGATGAGCTT | CTTCGTCTAC |
| YHR066W | c53 | 701 | 17.26 | AACTAATATC | GCGATGAGATG | AGCTTCTTCG |
| YHR197W | c53 | 5 | 11.50 | GCTTCTAAAT | GCGATGAGAGA | ATAT |
| YOR272W | c53 | 656 | 12.28 | GGTTTGCGAT | GAGATGAGCAC | TTCAGAAAAA |
| YOR272W | c53 | 661 | 17.26 | CCTACGGTTT | GCGATGAGATG | AGCACTTCAG |
| YOR272W | c53 | 697 | 9.74 | TGCAATTATA | CAGATGAGCAT | ATGCCTTTCA |
| YJR070C | w53 | 109 | 11.45 | GAAAAAGGAA | GAGATGAGAAA | GCAAAAATCA |
| YJR070C | w53 | 657 | 15.15 | AAAATTTTTC | TCGATGAGCTG | AAAAGTTTTT |
| YLR222C | c53 | 705 | 17.73 | ATATCTGAGA | GCGATGAGCTG | AATTTTTTCAG |
| YCL059C | w53 | 698 | 15.10 | AATTCTTTTA | GCGATGAGATA | TGAAAAATTT |
| YKR081C | w53 | 679 | 15.56 | TCATTTTTTT | GCGATGAGCTA | AGGATCGAAT |
| YKR081C | w53 | 742 | 11.09 | ATTTGGTATA | TCGATGAGTTG | TATTGAAGTT |
| YKLO21C | w53 | 139 | 11.71 | GAATCATCTT | CAGATGAGATT | GCTTTGGAGT |
| YNL110C | w53 | 460 | 13.08 | CAACGATTGA | AAGATGAGCTG | TCTAGGTAGT |
| YNL110C | c53 | 683 | 11.00 | GTGATGAGAT | GAGATGCGATG | CACTACTTCA |
| YNL110C | c53 | 688 | 16.04 | ATTAAGTGAT | GAGATGAGATG | CAGTGCACATA |
| YNL110C | c53 | 693 | 14.71 | TTCAAATTA | GTGATGAGATG | AGATGCGATG |
| YLR221C | w53 | 667 | 10.52 | ACTTCTTTGC | GCGAAGAGCTC | ATCACTAAAA |
| YLR221C | c53 | 672 | 13.37 | CAAATTTTTA | GTGATGAGCTC | TTGCGGCAAA |
| YJL148W | w53 | 689 | 11.58 | AAAAATTTTA | TCGATGAGCAT | TGAATAGCTC |
| YCR016W | w53 | 709 | 14.34 | GGAACGAAAA | GAGATGAGCTA | AATTCAAATA |
| YHR052W | c53 | 675 | 15.93 | TTCAAATTTT | GCGATGAGCTC | CAGTGAAAAA |
| YKLO09W | w53 | 683 | 16.59 | CCAGAAAAAT | GCGATGAGCTT | TTGAAAAGTT |
| YNL002C | w53 | 699 | 17.26 | AAGCTGGGAA | GCGATGAGATG | AGAAAAGTCT |
| YNL002C | w53 | 704 | 11.45 | GGGAAGCGAT | GAGATGAGAAA | AGTCTAAGTT |
| YDR101C | w53 | 719 | 16.04 | TTCAGCAGAA | GAGATGAGATG | AGCTAAAGCA |
| YDR101C | w53 | 724 | 14.34 | CAGAAGAGAT | GAGATGAGCTA | AAGCATCGTG |
| YDR083W | w53 | 769 | 15.93 | GAAAAATTTT | GCGATGAGCTC | AAAATAAGAT |
| YGL099W | w53 | 732 | 14.04 | TAATAAAGAG | GTGATGAGCTT | ATAAGCCAAC |
| YDL051W | c53 | 651 | 14.67 | TTGAGATATT | GCGATGAGGTT | GGGCTGAACA |
| YDL051W | c53 | 710 | 17.26 | ATACATCATA | GCGATGAGATG | CGACTCTGTG |

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|---------|-----|-----|-------|-------------|-------------|-------------|
| YMR131C | w53 | 518 | 10.02 | AAACAGTCTA | AAGATGAGGTT | ACTGACGATA |
| YMR131C | w53 | 696 | 17.26 | ACTGAATTTA | GCGATGAGATG | ATCATTTCCTT |
| YPR110C | w53 | 716 | 13.67 | AAAAAATATT | GCGATGAGTTG | AAAGAAAAAA |
| YMR290C | w53 | 693 | 17.26 | ATTAGCTTTA | GCGATGAGATG | AGATTTTATA |
| YMR290C | w53 | 698 | 14.91 | CTTTAGCGAT | GAGATGAGATT | TTATAGTGTA |
| YBL039C | c53 | 642 | 16.50 | TCCTCTCGAT | GAGATGAGCTG | TGAAAAATTT |
| YBL039C | c53 | 647 | 14.68 | GCTTTTCCTC | TCGATGAGATG | AGCTGTGAAA |
| YML093W | w53 | 706 | 17.73 | AATTCCTATG | GCGATGAGCTG | AAAAAATTCA |
| YGL078C | c53 | 655 | 15.80 | TGCTTCTTAT | GCGATGAGGTG | AAAAATTTTT |
| YLL008W | w53 | 161 | 11.08 | TGGTGTAGTA | GTGATGAGGTA | ATGTTAATTG |
| YLL008W | w53 | 680 | 17.26 | TTCAAAAAAT | GCGATGAGATG | AGGTTGAAAA |
| YLL008W | w53 | 685 | 13.45 | AAAATGCGAT | GAGATGAGGTT | GAAAAATGTA |
| YER006W | w53 | 274 | 10.79 | AATTTCTAAG | GAGATCAGATC | CATTTTCCAG |
| YER006W | w53 | 696 | 17.26 | TTTCGAGCGAG | GCGATGAGATG | AGCTAATTAT |
| YER006W | w53 | 701 | 14.34 | GCGAGGCGAT | GAGATGAGCTA | ATTATATCAA |
| YDR496C | w53 | 700 | 9.83 | TTTTTTTGCT | GGGATGAGATG | AGATGCCTAC |
| YDR496C | w53 | 705 | 16.04 | TTGCTGGGAT | GAGATGAGATG | CCTACCTAAA |
| YGR145W | w53 | 548 | 12.54 | AGATCCGATA | GTGATGAGATA | AGACTTTTAG |
| YGR145W | c53 | 709 | 15.37 | CCGATGAGAT | GAGATGAGCTT | AGCTCAAAAT |
| YGR145W | c53 | 714 | 16.04 | TACAGCCGAT | GAGATGAGATG | AGCTTAGCTC |
| YGR145W | c53 | 719 | 14.06 | CTGATTACAG | CCGATGAGATG | AGATGAGCTT |
| YGR245C | c53 | 648 | 11.32 | TATCTGCGAT | GAGATGAGTTT | AAAATTTTCA |
| YGR245C | c53 | 653 | 17.26 | ATGGTTATCT | GCGATGAGATG | AGTTTAAAAAT |
| YNL175C | w53 | 700 | 14.16 | AGAAAAAATT | GCGATGAGCAT | AGATGATAAA |
| YLR196W | w53 | 666 | 15.15 | AAAATTTGTC | TCGATGAGCTG | AGATGAGTTT |
| YLR196W | w53 | 671 | 13.09 | TTGTCTCGAT | GAGCTGAGATG | AGTTTGAAAG |
| YLR196W | w53 | 676 | 11.32 | TCGATGAGCT | GAGATGAGTTT | GAAAGAAGCA |
| YOR206W | w53 | 673 | 14.06 | ATTTTTTCTT | CCGATGAGATG | AGCATGATAT |
| YOR206W | w53 | 678 | 12.94 | TTCTTCCGAT | GAGATGAGCAT | GATATTTACA |
| YGR103W | w53 | 670 | 17.26 | AAAATTTTTT | GCGATGAGATG | AGATGAGAAA |
| YGR103W | w53 | 675 | 16.04 | TTTTTGCGAT | GAGATGAGATG | AGAAAAAATG |
| YGR103W | w53 | 680 | 11.45 | GCGATGAGAT | GAGATGAGAAA | AAATGAAAAA |
| YLR276C | c53 | 643 | 16.04 | GAGATGAGAT | GAGATGAGATG | GTCTAGAAGA |
| YLR276C | c53 | 648 | 16.04 | GAGATGAGAT | GAGATGAGATG | AGATGGTCTA |
| YLR276C | c53 | 653 | 16.04 | GAAATGAGAT | GAGATGAGATG | AGATGAGATG |
| YLR276C | c53 | 658 | 16.04 | GAAATGAAAT | GAGATGAGATG | AGATGAGATG |
| YNL182C | w53 | 383 | 10.42 | ATACATTTAC | GTGCTGAGCTC | CTAGGAAAAGC |
| YLR409C | w53 | 688 | 16.13 | GAAAAAATTC | GCGATGAGATT | GCTAATGAAA |
| YLR129W | w53 | 414 | 12.20 | CGTTTCCTTC | GCGATGAGGGG | AAAACCACTA |
| YLR129W | w53 | 672 | 15.30 | AATAAAAAAC | GCGATGAGCAG | TGGAAAAATTT |
| YLR002C | c53 | 681 | 13.88 | GCAGGTGAAT | GAGATGAGATA | AAATTTTCAG |
| YNL132W | w53 | 653 | 16.04 | AAGATACAAT | GAGATGAGATG | AGGTGCTGAA |
| YNL132W | w53 | 658 | 14.58 | ACAATGAGAT | GAGATGAGGTG | CTGAAGATGC |
| YNL248C | w53 | 669 | 17.73 | ATTTTTTATT | GCGATGAGCTG | AAATTTTCCA |
| YGR128C | c53 | 569 | 12.20 | AGCAATATTT | GCGATGAGGGG | CTCTCAATGA |
| YGR128C | w53 | 704 | 12.13 | TTTGAAAAC | TTGATGAGATG | AGGTCACTGT |
| YGR128C | w53 | 709 | 12.79 | AAACTTTGAT | GAGATGAGGTC | ACTGTTAAAT |
| YLR009W | c53 | 592 | 11.32 | GGGATGAGAT | GAGATGAGTTT | AGAAATACAT |
| YLR009W | c53 | 597 | 16.04 | AGGGTGGGAT | GAGATGAGATG | AGTTTAGAAA |
| YLR009W | c53 | 602 | 9.83 | GAGATAGGGT | GGGATGAGATG | AGATGAGTTT |
| YNL062C | c53 | 570 | 13.55 | AGTTTAAAGT | GAGCTGAGCTG | CAAATACAGT |
| YNL062C | c53 | 575 | 13.08 | GAATAAGTTT | AAGATGAGCTG | AGCTGCAAAAT |
| YNL062C | w53 | 597 | 17.26 | AACTTATTCT | GCGATGAGATG | AAAATTTTTT |
| YNL062C | w53 | 686 | 13.22 | AAAAAAAAG | TCGATGAGGTG | TATAATAACA |
| YGL171W | w53 | 694 | 17.26 | AAAATTTTTT | GCGATGAGATG | GGAAGGAAAA |
| YBR247C | w53 | 679 | 13.35 | TTTTTAAAAA | TCGATGAGCTC | CCACTTCTTC |
| YJR002W | w53 | 724 | 15.93 | TTTCAATTTT | GCGATGAGCTC | TTGAAGAAAC |
| YOR309C | w53 | 59 | 12.33 | AAACACATAT | GCCATGAGATG | TAAAGAATGG |
| YLR197W | w53 | 377 | 12.94 | AGAGAAGGTG | GAGATGAGCAT | GATGACATGG |
| YLR197W | w53 | 672 | 14.71 | ATTTTTTTGA | GTGATGAGATG | GGAAATGAAA |
| YLR175W | w53 | 668 | 11.28 | AAATTTTCAA | ATGATGAGATG | TTTAGCTTAG |
| YOR310C | c53 | 676 | 12.09 | CTGAAAATTT | TCGATGAGGTT | GAAAAATTTT |
| YLR449W | c53 | 3 | 13.26 | GCCCAGAACG | GCGATGACCTG | AT |
| YHR170W | c53 | 72 | 12.24 | TACATCTGTA | GCGATGAGGAT | TCTTGACGCG |
| YHR170W | c53 | 653 | 16.59 | CTTTTCCAAT | GCGATGAGCTT | CAAAAAATTT |
| YDR165W | w53 | 696 | 14.68 | GTGAAAAAAA | TCGATGAGATG | AAAAAATTTT |
| YDR398W | w53 | 668 | 15.80 | CGCAGCTGAA | GCGATGAGGTT | AAAAAATTAA |
| YPR190C | c53 | 676 | 16.59 | TTCTTCAAT | GCGATGAGCTT | TTGAAAAAT |
| YCR072C | w53 | 707 | 16.59 | AAAAAAAAT | GCGATGAGCTT | CAAAAAGAGT |
| YJL069C | c53 | 723 | 14.58 | AGTGATCGAT | GAGATGAGGTG | AAATTTTTTT |
| YJL069C | c53 | 728 | 14.68 | ACCAGAGTGA | TCGATGAGATG | AGGTGAAATT |

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|---------|-----|-----|-------|-------------|-------------|-------------|
| YHR065C | w53 | 719 | 17.26 | AACTAATATC | GCGATGAGATG | AGCTTCTTCG |
| YHR065C | w53 | 724 | 15.37 | ATATCGCGAT | GAGATGAGCTT | CTTCGTCTAC |
| YLL011W | w53 | 717 | 9.96 | TGAAAAAAAAA | TCGATGAGTTT | GAATTACATT |
| YER126C | c53 | 389 | 12.93 | AATTCTGCGA | CCGATGAGATT | CCTGAAAGTA |
| YER126C | c53 | 565 | 12.36 | AGAAAAGAAA | CCGATGAGCTA | TACCATTCTA |
| YER126C | w53 | 668 | 17.26 | TTCCGGACA | GCGATGAGATG | CACTTTTAAG |
| YDR087C | w53 | 680 | 17.73 | AAAAAAAAAT | GCGATGAGCTG | AAAAAATTG |
| YDL153C | c53 | 708 | 15.37 | GAGCTATGAT | GAGATGAGCTT | CATTATGAA |
| YDL153C | c53 | 713 | 11.28 | GAGATGAGCT | ATGATGAGATG | AGCTTCATTA |
| YDL153C | c53 | 723 | 14.34 | AAGCATCAGT | GAGATGAGCTA | TGATGAGATG |
| YKL172W | w53 | 714 | 12.84 | TGCCAAATA | CAGATGAGATG | AGCTTTATAG |
| YKL172W | w53 | 719 | 15.37 | AAATACAGAT | GAGATGAGCTT | TATAGAATTT |
| YNL308C | c53 | 712 | 14.91 | TTAACTAGAT | GAGATGAGATT | GATATATTTG |
| YNL308C | c53 | 717 | 13.46 | TTCTGTAAAC | TAGATGAGATG | AGATTGATAT |
| YKL082C | c53 | 663 | 12.48 | TTCTTTACCG | GAGATGAGAAT | AAAAAGAATT |
| YKL082C | w53 | 704 | 16.04 | TACAATAAAA | GAGATGAGATG | ACCAAGAGAT |
| YGR272C | c53 | 713 | 16.04 | TTTAATTGTA | GAGATGAGATG | AGTATGAAAA |
| YGL029W | w53 | 668 | 15.10 | ACTGGAAAAA | GCGATGAGATA | AAATTTTCAG |
| YPL266W | w53 | 658 | 17.73 | TTTGAAAAATC | GCGATGAGCTG | AAAATTGAAA |
| YOL077C | c53 | 652 | 14.16 | GAGAACCATC | GCGATGAGCAT | CTAAAAATTT |
| YBR142W | c53 | 579 | 12.98 | AATTATAATA | TCGATGAGCTA | GCCATGACCT |
| YBR142W | w53 | 680 | 16.59 | AACTTTTCCA | GCGATGAGCTT | ATAAGAATTT |
| YBR034C | w53 | 726 | 16.50 | AATAGTTGAA | GAGATGAGCTG | CCTACTGCTC |
| YGR187C | c53 | 674 | 10.28 | ATTGATGGAT | GAGATGAGAGA | GCTCAATATG |
| YHR089C | w53 | 612 | 11.26 | AAGGTGTCAC | GTGATCAGATG | GTCTTTTTTTT |
| YHR089C | w53 | 674 | 9.98 | AAAATTTTTC | GAGATGAGGAA | AGGAAGAAAA |
| YCR057C | c53 | 433 | 13.25 | ATCCATGATG | GTGATGAGGTG | CAGCATTCTG |
| YCR057C | w53 | 656 | 17.73 | GAAAAATTTT | GCGATGAGCTG | AAAGATGAAA |

log-odds matrix: alength= 4 w= 11 n= 116920 bayes= 9.72671

| | | | |
|--------|--------|--------|--------|
| -1.798 | -1.576 | 1.626 | -0.955 |
| 0.137 | 1.360 | -6.071 | -1.196 |
| -4.556 | -2.929 | 2.009 | -2.829 |
| 1.623 | -1.330 | -3.374 | -3.629 |
| -3.567 | -4.521 | -4.716 | 1.841 |
| -6.198 | -1.468 | 1.984 | -4.639 |
| 1.740 | -3.304 | -3.276 | -4.389 |
| -4.989 | -2.537 | 1.927 | -1.693 |
| 0.529 | 0.991 | -0.932 | -3.062 |
| -0.872 | -6.284 | -2.042 | 1.559 |
| -1.099 | -0.729 | 1.066 | -0.067 |

letter-probability matrix: alength= 4 w= 11 n= 116920

| | | | |
|----------|----------|----------|----------|
| 0.081012 | 0.074486 | 0.706585 | 0.137917 |
| 0.309946 | 0.569982 | 0.003404 | 0.116668 |
| 0.011976 | 0.029144 | 0.921271 | 0.037609 |
| 0.868039 | 0.088289 | 0.022071 | 0.021601 |
| 0.023783 | 0.009673 | 0.008706 | 0.957838 |
| 0.003837 | 0.080239 | 0.905197 | 0.010726 |
| 0.941138 | 0.022480 | 0.023624 | 0.012758 |
| 0.008876 | 0.038267 | 0.870150 | 0.082707 |
| 0.406704 | 0.441325 | 0.119950 | 0.032021 |
| 0.153962 | 0.002849 | 0.055567 | 0.787622 |
| 0.131570 | 0.133964 | 0.479238 | 0.255229 |