MEME-ChIP
Motif Analysis of Large Nucleotide Datasets

For further information on how to interpret these results please access http://meme-suite.org//doc/meme-chip-output-format.html.
To get a copy of the MEME software please access http://meme-suite.org.

If you use MEME-ChIP in your research, please cite the following paper:
Philip Machanick and Timothy L. Bailey, "MEME-ChIP: motif analysis of large DNA datasets", *Bioinformatics*, **27**12, 1696-1697, 2011. [full text]

MOTIFS | PROGRAMS | INPUT FILES | PROGRAM INFORMATION | SUMMARY IN TSV FORMAT NEW | MOTIFS IN MEME TEXT FORMAT NEW

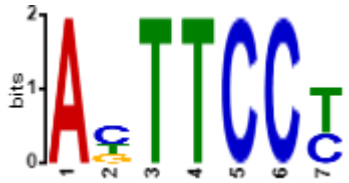
DESCRIPTION

ATAC MACRO SPECIFIC

MOTIFS

The significant motifs (E-value ≤ 0.05) found by the programs MEME, DREME and CentriMo; clustered by similarity and ordered by E-value.

Expand All Clusters Collapse All Clusters

Motif Found	Discovery/ Enrichment Program	E-value	Known or Similar Motifs	Distribution	SpaMo & FIMO
	DREME	7.3e-161	Sfpi1_primary (UP00085_1) SPIC_full SPIC (MA0687.1)	Not Centrally Enriched	• Motif Spacing Analysis • Motif Sites in GFF3

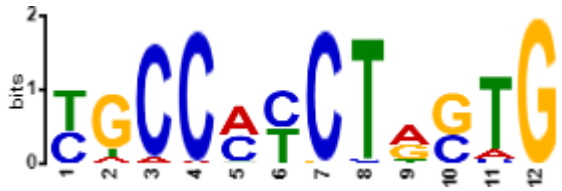
Reverse Complement ⇆ Show 4 More ↧

Motif Found	Discovery/ Enrichment Program	E-value	Known or Similar Motifs	Distribution	SpaMo & FIMO
	DREME	3.8e-096	KLF9 (MA1107.1) GLI2_DBD_1	Not Centrally Enriched	• Motif Spacing Analysis • Motif Sites in GFF3

Reverse Complement ⇆ Show 1 More ↧

Motif Found	Discovery/ Enrichment Program	E-value	Known or Similar Motifs	Distribution	SpaMo & FIMO
	DREME	1.4e-063	FOSL2 (MA0478.1) JUNB (MA0490.1) JUN(var.2) (MA0489.1)	Not Centrally Enriched	• Motif Spacing Analysis • Motif Sites in GFF3

Reverse Complement ⇆ Show 1 More ↧

Motif Found	Discovery/ Enrichment Program	E-value	Known or Similar Motifs	Distribution	SpaMo & FIMO
	MEME	9.1e-049	CTCF (MA0139.1) CTCF_full CTCFL (MA1102.1)	Not Centrally Enriched	• Motif Spac Analy • Motif Sites GFF3

Reverse Complement ⇆ Show 4 More ↧

Motif Found	Discovery/ Enrichment Program	E-value	Known or Similar Motifs	Distribution	SpaM FIM
	MEME	6.8e-041	ZNF384 (MA1125.1) Srf_secondary (UP00077_2) Mtf1_secondary (UP00097_2)	Not Centrally Enriched	• M S A • M S G

Reverse Complement ⇆ Show 1 More ↧

Motif Found	Discovery/ Enrichment Program	E-value	Known or Similar Motifs	Distribution	SpaMo & FIMO
	DREME	2.8e-026		Not Centrally Enriched	• Motif Spacing Analysis • Motif Sites in GFF3

Reverse Complement ⇆

Motif Found	Discovery/ Enrichment Program	E-value	Known or Similar Motifs	Distribution	SpaMo & FIMO

Motif Found	Discovery/ Enrichment Program	E-value	Known or Similar Motifs	Distribution	SpaMo & FIMO
	DREME	3.4e-023		Not Centrally Enriched	• Motif Spacing Analysis • Motif Sites in GFF3

Reverse Complement ⇆

Motif Found	Discovery/ Enrichment Program	E-value	Known or Similar Motifs	Distribution	SpaMo & FIMO
	DREME	1.4e-013	JDP2_full_2 JDP2(var.2) (MA0656.1) CREB3_full_1	Not Centrally Enriched	• Motif Spacing Analysis • Motif Sites in GFF3

Reverse Complement ⇆

Motif Found	Discovery/ Enrichment Program	E-value	Known or Similar Motifs	Distribution	SpaMo & FIMO
	DREME	1.3e-011		Not Centrally Enriched	• Motif Spacing Analysis • Motif Sites in GFF3

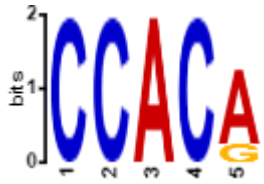
Reverse Complement ⇆

Motif Found	Discovery/ Enrichment Program	E-value	Known or Similar Motifs	Distribution	SpaMo & FIMO
	DREME	5.0e-011	MEF2A_DBD MEF2A (MA0052.3) MEF2D_DBD	Not Centrally Enriched	• Motif Spacing Analysis • Motif Sites in GFF3

Reverse Complement ⇆

Motif Found	Discovery/ Enrichment Program	E-value	Known or Similar Motifs	Distribution	SpaMo & FIMO
	DREME	2.2e-007	SPIB (MA0081.1)	Not Centrally Enriched	• Motif Spacing Analysis • Motif Sites in GFF3

Reverse Complement ⇆

Motif Found	Discovery/ Enrichment Program	E-value	Known or Similar Motifs	Distribution	SpaMo & FIMO
	DREME	1.7e-006	Klf1 (MA0493.1)	Not Centrally Enriched	• Motif Spacing Analysis • Motif Sites in GFF3

Reverse Complement ⇆

Motif Found	Discovery/ Enrichment Program	E-value	Known or Similar Motifs	Distribution	SpaMo & FIMO
	DREME	3.2e-004		Not Centrally Enriched	• Motif Spacing Analysis • Motif Sites in GFF3

Reverse Complement ⇆

Motif Found	Discovery/ Enrichment Program	E-value	Known or Similar Motifs	Distribution	SpaMo & FIMO
	DREME	2.4e-003	Pou5f1::Sox2 (MA0142.1)	Not Centrally Enriched	• Motif Spacing Analysis • Motif Sites in GFF3

Reverse Complement ⇆

Programs

Command	Running Time	Status	Outputs
getsize ./TOP_5000_ATAC_MACRO_SPECIFIC_PEAKS.fasta 1> $metrics	0.04s	Success	
fasta-most -min 50 < ./TOP_5000_ATAC_MACRO_SPECIFIC_PEAKS.fasta 1> $metrics	0.11s	Success	
fasta-center -dna -len 100 < ./TOP_5000_ATAC_MACRO_SPECIFIC_PEAKS.fasta 1> ./seqs-centered	0.16s	Success	• seqs-centered

Command	Running Time	Status	Outputs
fasta-shuffle-letters ./seqs-centered ./seqs-shuffled -kmer 2 -tag -dinuc -dna -seed 1	0.05s	Success	• seqs-shuffled
fasta-get-markov -nostatus -nosummary -dna -m 1 ./TOP_5000_ATAC_MACRO_SPECIFIC_PEAKS.fasta ./background	0.03s	Success	• Background
meme ./seqs-centered -oc meme_out -mod zoops -nmotifs 10 -minw 6 -maxw 12 -bfile ./background -dna -searchsize 100000 -time 5082 -revcomp -nostatus	1h 15m 38.54s	Success	• MEME HTML • MEME text • MEME XML
dreme -verbosity 1 -oc dreme_out -png -dna -p ./seqs-centered -n ./seqs-shuffled -t 5324 -e 0.05	13m 41.22s	Success	• DREME HTML • DREME text • DREME XML
centrimo -seqlen 220 -verbosity 1 -oc centrimo_out -bfile ./background -score 5.0 -ethresh 10.0 ./TOP_5000_ATAC_MACRO_SPECIFIC_PEAKS.fasta meme_out/meme.xml dreme_out/dreme.xml db/EUKARYOTE/jolma2013.meme db/JASPAR/JASPAR2018_CORE_vertebrates_non-redundant.meme db/MOUSE/uniprobe_mouse.meme	5.95s	Warnings	• CentriMo HTML • Site Counts
tomtom -verbosity 1 -oc meme_tomtom_out -min-overlap 5 -dist pearson -evalue -thresh 1 -no-ssc meme_out/meme.xml db/EUKARYOTE/jolma2013.meme db/JASPAR/JASPAR2018_CORE_vertebrates_non-redundant.meme db/MOUSE/uniprobe_mouse.meme	21.15s	Success	• Tomtom HTML • Tomtom TSV • Tomtom XML
tomtom -verbosity 1 -oc dreme_tomtom_out -min-overlap 5 -dist pearson -evalue -thresh 1 -no-ssc dreme_out/dreme.xml db/EUKARYOTE/jolma2013.meme db/JASPAR/JASPAR2018_CORE_vertebrates_non-redundant.meme db/MOUSE/uniprobe_mouse.meme	14.45s	Success	• Tomtom HTML • Tomtom TSV • Tomtom XML
tomtom -verbosity 1 -text -thresh 0.1 ./combined.meme ./combined.meme 1> ./motif_alignment.txt	0.24s	Success	• Motif Alignment
spamo -verbosity 1 -oc spamo_out_1 -bgfile ./background -keepprimary -primary ABTTCCY ./TOP_5000_ATAC_MACRO_SPECIFIC_PEAKS.fasta dreme_out/dreme.xml meme_out/meme.xml dreme_out/dreme.xml db/EUKARYOTE/jolma2013.meme db/JASPAR/JASPAR2018_CORE_vertebrates_non-redundant.meme db/MOUSE/uniprobe_mouse.meme	58.19s	Warnings	• SpaMo HTML

Command	Running Time	Status	Outputs
spamo -verbosity 1 -oc spamo_out_2 -bgfile ./background -keepprimary -primary CDCCCAC ./TOP_5000_ATAC_MACRO_SPECIFIC_PEAKS.fasta dreme_out/dreme.xml meme_out/meme.xml dreme_out/dreme.xml db/EUKARYOTE/jolma2013.meme db/JASPAR/JASPAR2018_CORE_vertebrates_non-redundant.meme db/MOUSE/uniprobe_mouse.meme	38.20s	Warnings	• SpaMo HTML
spamo -verbosity 1 -oc spamo_out_3 -bgfile ./background -keepprimary -primary RTGABTCA ./TOP_5000_ATAC_MACRO_SPECIFIC_PEAKS.fasta dreme_out/dreme.xml meme_out/meme.xml dreme_out/dreme.xml db/EUKARYOTE/jolma2013.meme db/JASPAR/JASPAR2018_CORE_vertebrates_non-redundant.meme db/MOUSE/uniprobe_mouse.meme	22.63s	Warnings	• SpaMo HTML
spamo -verbosity 1 -oc spamo_out_4 -bgfile ./background -keepprimary -primary YGCCMYCTRSTG ./TOP_5000_ATAC_MACRO_SPECIFIC_PEAKS.fasta meme_out/meme.xml meme_out/meme.xml dreme_out/dreme.xml db/EUKARYOTE/jolma2013.meme db/JASPAR/JASPAR2018_CORE_vertebrates_non-redundant.meme db/MOUSE/uniprobe_mouse.meme	27.38s	Warnings	• SpaMo HTML
spamo -verbosity 1 -oc spamo_out_5 -bgfile ./background -keepprimary -primary TTTTTTTTTTTT ./TOP_5000_ATAC_MACRO_SPECIFIC_PEAKS.fasta meme_out/meme.xml meme_out/meme.xml dreme_out/dreme.xml db/EUKARYOTE/jolma2013.meme db/JASPAR/JASPAR2018_CORE_vertebrates_non-redundant.meme db/MOUSE/uniprobe_mouse.meme	18.05s	Warnings	• SpaMo HTML
spamo -verbosity 1 -oc spamo_out_6 -bgfile ./background -keepprimary -primary BCACRTG ./TOP_5000_ATAC_MACRO_SPECIFIC_PEAKS.fasta dreme_out/dreme.xml meme_out/meme.xml dreme_out/dreme.xml db/EUKARYOTE/jolma2013.meme db/JASPAR/JASPAR2018_CORE_vertebrates_non-redundant.meme db/MOUSE/uniprobe_mouse.meme	26.32s	Warnings	• SpaMo HTML

Command	Running Time	Status	Outputs
spamo -verbosity 1 -oc spamo_out_7 -bgfile ./background -keepprimary -primary GWAAY ./TOP_5000_ATAC_MACRO_SPECIFIC_PEAKS.fasta dreme_out/dreme.xml meme_out/meme.xml dreme_out/dreme.xml db/EUKARYOTE/jolma2013.meme db/JASPAR/JASPAR2018_CORE_vertebrates_non-redundant.meme db/MOUSE/uniprobe_mouse.meme	1m 29.44s	Warnings	• SpaMo HTML
spamo -verbosity 1 -oc spamo_out_8 -bgfile ./background -keepprimary -primary GTCAY ./TOP_5000_ATAC_MACRO_SPECIFIC_PEAKS.fasta dreme_out/dreme.xml meme_out/meme.xml dreme_out/dreme.xml db/EUKARYOTE/jolma2013.meme db/JASPAR/JASPAR2018_CORE_vertebrates_non-redundant.meme db/MOUSE/uniprobe_mouse.meme	1m 10.94s	Warnings	• SpaMo HTML
spamo -verbosity 1 -oc spamo_out_9 -bgfile ./background -keepprimary -primary AGGCKG ./TOP_5000_ATAC_MACRO_SPECIFIC_PEAKS.fasta dreme_out/dreme.xml meme_out/meme.xml dreme_out/dreme.xml db/EUKARYOTE/jolma2013.meme db/JASPAR/JASPAR2018_CORE_vertebrates_non-redundant.meme db/MOUSE/uniprobe_mouse.meme	35.23s	Warnings	• SpaMo HTML
spamo -verbosity 1 -oc spamo_out_10 -bgfile ./background -keepprimary -primary TATWTW ./TOP_5000_ATAC_MACRO_SPECIFIC_PEAKS.fasta dreme_out/dreme.xml meme_out/meme.xml dreme_out/dreme.xml db/EUKARYOTE/jolma2013.meme db/JASPAR/JASPAR2018_CORE_vertebrates_non-redundant.meme db/MOUSE/uniprobe_mouse.meme	28.07s	Warnings	• SpaMo HTML
spamo -verbosity 1 -oc spamo_out_11 -bgfile ./background -keepprimary -primary DGAGGAAC ./TOP_5000_ATAC_MACRO_SPECIFIC_PEAKS.fasta dreme_out/dreme.xml meme_out/meme.xml dreme_out/dreme.xml db/EUKARYOTE/jolma2013.meme db/JASPAR/JASPAR2018_CORE_vertebrates_non-redundant.meme db/MOUSE/uniprobe_mouse.meme	13.45s	Warnings	• SpaMo HTML

Command	Running Time	Status	Outputs
spamo -verbosity 1 -oc spamo_out_12 -bgfile ./background -keepprimary -primary CCACR ./TOP_5000_ATAC_MACRO_SPECIFIC_PEAKS.fasta dreme_out/dreme.xml meme_out/meme.xml dreme_out/dreme.xml db/EUKARYOTE/jolma2013.meme db/JASPAR/JASPAR2018_CORE_vertebrates_non-redundant.meme db/MOUSE/uniprobe_mouse.meme	1m 13.35s	Warnings	• SpaMo HTML
spamo -verbosity 1 -oc spamo_out_13 -bgfile ./background -keepprimary -primary GCAGAAGY ./TOP_5000_ATAC_MACRO_SPECIFIC_PEAKS.fasta dreme_out/dreme.xml meme_out/meme.xml dreme_out/dreme.xml db/EUKARYOTE/jolma2013.meme db/JASPAR/JASPAR2018_CORE_vertebrates_non-redundant.meme db/MOUSE/uniprobe_mouse.meme	12.10s	Warnings	• SpaMo HTML
spamo -verbosity 1 -oc spamo_out_14 -bgfile ./background -keepprimary -primary TTADGCAA ./TOP_5000_ATAC_MACRO_SPECIFIC_PEAKS.fasta dreme_out/dreme.xml meme_out/meme.xml dreme_out/dreme.xml db/EUKARYOTE/jolma2013.meme db/JASPAR/JASPAR2018_CORE_vertebrates_non-redundant.meme db/MOUSE/uniprobe_mouse.meme	11.01s	Warnings	• SpaMo HTML
fimo --parse-genomic-coord --verbosity 1 --oc fimo_out_1 --bgfile ./background --motif ABTTCCY dreme_out/dreme.xml ./TOP_5000_ATAC_MACRO_SPECIFIC_PEAKS.fasta	0.91s	Success	• FIMO GFF • FIMO HTML • FIMO TSV
fimo --parse-genomic-coord --verbosity 1 --oc fimo_out_2 --bgfile ./background --motif CDCCCAC dreme_out/dreme.xml ./TOP_5000_ATAC_MACRO_SPECIFIC_PEAKS.fasta	0.98s	Success	• FIMO GFF • FIMO HTML • FIMO TSV
fimo --parse-genomic-coord --verbosity 1 --oc fimo_out_3 --bgfile ./background --motif RTGABTCA dreme_out/dreme.xml ./TOP_5000_ATAC_MACRO_SPECIFIC_PEAKS.fasta	0.91s	Success	• FIMO GFF • FIMO HTML • FIMO TSV
fimo --parse-genomic-coord --verbosity 1 --oc fimo_out_4 --bgfile ./background --motif YGCCMYCTRSTG meme_out/meme.xml ./TOP_5000_ATAC_MACRO_SPECIFIC_PEAKS.fasta	0.91s	Success	• FIMO GFF • FIMO HTML • FIMO TSV
fimo --parse-genomic-coord --verbosity 1 --oc fimo_out_5 --bgfile ./background --motif TTTTTTTTTTT meme_out/meme.xml ./TOP_5000_ATAC_MACRO_SPECIFIC_PEAKS.fasta	0.94s	Success	• FIMO GFF • FIMO HTML • FIMO TSV

Command	Running Time	Status	Outputs
fimo --parse-genomic-coord --verbosity 1 --oc fimo_out_6 --bgfile ./background --motif BCACRTG dreme_out/dreme.xml ./TOP_5000_ATAC_MACRO_SPECIFIC_PEAKS.fasta	0.90s	Success	• FIMO GFF • FIMO HTML • FIMO TSV
fimo --parse-genomic-coord --verbosity 1 --oc fimo_out_7 --bgfile ./background --motif GWAAY dreme_out/dreme.xml ./TOP_5000_ATAC_MACRO_SPECIFIC_PEAKS.fasta	1.16s	Success	• FIMO GFF • FIMO HTML • FIMO TSV
fimo --parse-genomic-coord --verbosity 1 --oc fimo_out_8 --bgfile ./background --motif GTCAY dreme_out/dreme.xml ./TOP_5000_ATAC_MACRO_SPECIFIC_PEAKS.fasta	0.86s	Success	• FIMO GFF • FIMO HTML • FIMO TSV
fimo --parse-genomic-coord --verbosity 1 --oc fimo_out_9 --bgfile ./background --motif AGGCKG dreme_out/dreme.xml ./TOP_5000_ATAC_MACRO_SPECIFIC_PEAKS.fasta	0.86s	Success	• FIMO GFF • FIMO HTML • FIMO TSV
fimo --parse-genomic-coord --verbosity 1 --oc fimo_out_10 --bgfile ./background --motif TATWTW dreme_out/dreme.xml ./TOP_5000_ATAC_MACRO_SPECIFIC_PEAKS.fasta	0.83s	Success	• FIMO GFF • FIMO HTML • FIMO TSV
fimo --parse-genomic-coord --verbosity 1 --oc fimo_out_11 --bgfile ./background --motif DGAGGAAC dreme_out/dreme.xml ./TOP_5000_ATAC_MACRO_SPECIFIC_PEAKS.fasta	0.89s	Success	• FIMO GFF • FIMO HTML • FIMO TSV
fimo --parse-genomic-coord --verbosity 1 --oc fimo_out_12 --bgfile ./background --motif CCACR dreme_out/dreme.xml ./TOP_5000_ATAC_MACRO_SPECIFIC_PEAKS.fasta	1.29s	Success	• FIMO GFF • FIMO HTML • FIMO TSV
fimo --parse-genomic-coord --verbosity 1 --oc fimo_out_13 --bgfile ./background --motif GCAGAAGY dreme_out/dreme.xml ./TOP_5000_ATAC_MACRO_SPECIFIC_PEAKS.fasta	0.91s	Success	• FIMO GFF • FIMO HTML • FIMO TSV
fimo --parse-genomic-coord --verbosity 1 --oc fimo_out_14 --bgfile ./background --motif TTADGCAA dreme_out/dreme.xml ./TOP_5000_ATAC_MACRO_SPECIFIC_PEAKS.fasta	0.90s	Success	• FIMO GFF • FIMO HTML • FIMO TSV

Input Files

Alphabet

Background source: built from the (primary) sequences

Name	Bg.				Bg.	Name
Adenine	0.2624	A	~	T	0.2624	Thymine
Cytosine	0.2376	C	~	G	0.2376	Guanine

Primary Sequences

Database	Source	Sequence Count
TOP 5000 ATAC MACRO SPECIFIC PEAKS	TOP_5000_ATAC_MACRO_SPECIFIC_PEAKS.fasta	5000

Motifs

Database	Source	Motif Count
jolma2013	db/EUKARYOTE/jolma2013.meme	843
JASPAR2018 CORE vertebrates non-redundant	db/JASPAR/JASPAR2018_CORE_vertebrates_non-redundant.meme	579
uniprobe mouse	db/MOUSE/uniprobe_mouse.meme	386

MEME-ChIP version
5.1.1 (Release date: Wed Jan 29 15:00:42 2020 -0800)

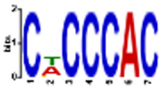
Reference
Philip Machanick and Timothy L. Bailey, "MEME-ChIP: motif analysis of large DNA datasets", *Bioinformatics*, **27**12, 1696-1697, 2011.

Command line summary

```
meme-chip -oc . -time 300 -ccut 100 -fdesc description -order 1 -db db/EUKARYOTE/jolma2013.meme
-db db/JASPAR/JASPAR2018_CORE_vertebrates_non-redundant.meme -db db/MOUSE/uniprobe_mouse.meme -
meme-mod zoops -meme-minw 6 -meme-maxw 12 -meme-nmotifs 10 -meme-searchsize 100000 -dreme-e 0.05
-centrimo-score 5.0 -centrimo-ethresh 10.0 TOP_5000_ATAC_MACRO_SPECIFIC_PEAKS.fasta
```

Tomtom analysis

We subjected the CT/ACCCAC motif identified in our analysis to the Tomtom algorithm, which identifies the most closely related motifs in the JASPAR, jolma2013 and uniprobe_mouse databases.

ATAC_MACRO_SPECIFIC_PEAKS_MEME_CHIP_motifs	3	CDCCCAC-DREME-2	

Matching motifs:

MA1107.1 (KLF9), GLI2_DBD_1, EGR2_DBD, MA0472.2 (EGR2), SP1_DBD, EGR2_full, SP3_DBD, MA0746.1 (SP3), ZNF143_DBD, MA0088.2 (ZNF143), EGR1_full, MA0162.3 (EGR1), Egr3_DBD, EGR1_DBD, EGR3_DBD, MA0732.1 (EGR3), EGR4_DBD_1, EGR4_DBD_2,

Tabular format of MEME-CHIP motif analysis for macrophage-specific accessible sites

MOTIF_INDEX	MOTIF_SOURCE	CONSENSUS	WIDTH	SITES	E-VALUE	E-VALUE_S	MOST_SIMILAR_MOTIF_SOURCE	MOST_SIMILAR_MOTIF
1	DREME	ABTTCCY	7	1797	7.30E-161	DREME	db/MOUSE/uniprobe_mouse.meme	UP00085_1 (Sfpi1_primary)
2	MEME	RRARRRGGAAG	11	1792	4.90E-157	MEME	db/EUKARYOTE/jolma2013.meme	SPIC_full
3	DREME	CDCCCAC	7	970	3.80E-96	DREME	db/JASPAR/JASPAR2018_CORE_vertebrates_non-redundant.meme	MA1107.1 (KLF9)
4	DREME	RTGABTCA	8	516	1.40E-63	DREME	db/JASPAR/JASPAR2018_CORE_vertebrates_non-redundant.meme	MA0478.1 (FOSL2)
5	DREME	CTTCCY	6	1629	6.60E-54	DREME	db/JASPAR/JASPAR2018_CORE_vertebrates_non-redundant.meme	MA0149.1 (EWSR1-FLI1)
6	MEME	GTGGGWGG	8	661	1.10E-53	MEME	db/EUKARYOTE/jolma2013.meme	GLI2_DBD_1
7	MEME	YGCCMYCTRSTG	12	488	9.10E-49	MEME	db/JASPAR/JASPAR2018_CORE_vertebrates_non-redundant.meme	MA0139.1 (CTCF)
8	MEME	TTTTTTTTTTTT	12	187	6.80E-41	MEME	db/JASPAR/JASPAR2018_CORE_vertebrates_non-redundant.meme	MA1125.1 (ZNF384)
9	DREME	BCACRTG	7	627	2.80E-26	DREME		
10	DREME	GWAAY	5	3638	3.40E-23	DREME		
11	DREME	CCASTAGR	8	191	5.80E-22	DREME	db/EUKARYOTE/jolma2013.meme	CTCF_full
12	DREME	GTCAY	5	2208	1.40E-13	DREME	db/EUKARYOTE/jolma2013.meme	JDP2_full_2
13	DREME	AGGCKG	6	885	1.30E-11	DREME		
14	DREME	AGRTGGCR	8	183	2.20E-11	DREME	db/JASPAR/JASPAR2018_CORE_vertebrates_non-redundant.meme	MA1109.1 (NEUROD1)
15	DREME	TATWTW	6	788	5.00E-11	DREME	db/EUKARYOTE/jolma2013.meme	MEF2A_DBD
16	MEME	RTGACTCA	8	783	3.00E-10	MEME	db/JASPAR/JASPAR2018_CORE_vertebrates_non-redundant.meme	MA1130.1 (FOSL2::JUN)
17	DREME	DGAGGAAC	8	125	2.20E-07	DREME	db/JASPAR/JASPAR2018_CORE_vertebrates_non-redundant.meme	MA0081.1 (SPIB)
18	DREME	CCACR	5	1942	1.70E-06	DREME	db/JASPAR/JASPAR2018_CORE_vertebrates_non-redundant.meme	MA0493.1 (Klf1)
19	DREME	AAAAAAAA	8	177	8.50E-05	DREME	db/JASPAR/JASPAR2018_CORE_vertebrates_non-redundant.meme	MA1125.1 (ZNF384)
20	DREME	GCAGAAGY	8	119	3.20E-04	DREME		
21	DREME	CCASCAG	7	324	1.20E-03	DREME	db/JASPAR/JASPAR2018_CORE_vertebrates_non-redundant.meme	MA0139.1 (CTCF)
22	DREME	TTADGCAA	8	118	2.40E-03	DREME	db/JASPAR/JASPAR2018_CORE_vertebrates_non-redundant.meme	MA0142.1 (Pou5f1::Sox2)
23	DREME	CCASCTAC	8	69	6.70E-03	DREME		
24	DREME	RGRAA	5	2978	8.30E-03	DREME		
25	DREME	ASTTCTC	7	255	4.20E-02	DREME		