





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](#) | [MOTIFS IN MEME TEXT FORMAT](#)

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						
<div><div><div>Motif Found</div><div></div><div>Reverse Complement ⇌</div><div>Show Less ↓</div></div><div><div>Discovery/Enrichment Program</div><div>DREME</div></div><div><div>E-value</div><div>1.5e-182</div></div><div><div>Known or Similar Motifs</div><div>Sox2 (MA0143.3) Sox3 (MA0514.1) SOX15 (MA1152.1)</div></div><div><div>Distribution</div><div>Not Centrally Enriched</div></div><div><div>SpaMo & FIMO</div><div><ul style="list-style-type: none">Motif Spacing AnalysisMotif Sites in GFF3</div></div></div>						
<div><div><div>Motif Found</div><div></div><div>Reverse Complement ⇌</div><div>Show Less ↓</div></div><div><div>Discovery/Enrichment Program</div><div>DREME</div></div><div><div>E-value</div><div>2.7e-073</div></div><div><div>Known or Similar Motifs</div><div>SOX10 (MA0442.2) SOX18_full_1</div></div><div><div>Distribution</div><div>Not Centrally Enriched</div></div><div><div>SpaMo & FIMO</div><div></div></div></div>						
<div><div><div>Motif Found</div><div></div><div>Reverse Complement ⇌</div><div>Show Less ↓</div></div><div><div>Discovery/Enrichment Program</div><div>DREME</div></div><div><div>E-value</div><div>4.5e-013</div></div><div><div>Known or Similar Motifs</div><div>SOX15 (MA1152.1) SOX10 (MA0442.2) Foxl1_secondary (UP00061_2)</div></div><div><div>Distribution</div><div>Not Centrally Enriched</div></div><div><div>SpaMo & FIMO</div><div></div></div></div>						
<div><div><div>Motif Found</div><div></div><div>Reverse Complement ⇌</div><div>Show Less ↓</div></div><div><div>Discovery/Enrichment Program</div><div>MEME</div></div><div><div>E-value</div><div>7.7e-182</div></div><div><div>Known or Similar Motifs</div><div>Pou5f1::Sox2 (MA0142.1) POU2F3_DBD_1 POU5F1P1_DBD_1</div></div><div><div>Distribution</div><div>Not Centrally Enriched</div></div><div><div>SpaMo & FIMO</div><div><ul style="list-style-type: none">Motif Spacing AnalysisMotif Sites in GFF3</div></div></div>						
<div><div><div>Motif Found</div><div></div><div>Reverse Complement ⇌</div><div>Show Less ↓</div></div><div><div>Discovery/Enrichment Program</div><div>DREME</div></div><div><div>E-value</div><div>2.7e-151</div></div><div><div>Known or Similar Motifs</div><div>POU5F1P1_DBD_1 POU5F1B (MA0792.1) POU3F1_DBD_1</div></div><div><div>Distribution</div><div>Not Centrally Enriched</div></div><div><div>SpaMo & FIMO</div><div></div></div></div>						
<div><div><div>Motif Found</div><div></div><div>Reverse Complement ⇌</div><div>Show Less ↓</div></div><div><div>Discovery/Enrichment Program</div><div>DREME</div></div><div><div>E-value</div><div>2.2e-036</div></div><div><div>Known or Similar Motifs</div><div>Pou2f2_DBD_2 POU2F3_DBD_1 POU5F1P1_DBD_1</div></div><div><div>Distribution</div><div>Not Centrally Enriched</div></div><div><div>SpaMo & FIMO</div><div></div></div></div>						
<div><div><div>Motif Found</div><div></div><div>Reverse Complement ⇌</div><div>Show Less ↓</div></div><div><div>Discovery/Enrichment Program</div><div>MEME</div></div><div><div>E-value</div><div>1.4e-020</div></div><div><div>Known or Similar Motifs</div><div>Sox6 (MA0515.1) SOX15 (MA1152.1) Sox3 (MA0514.1)</div></div><div><div>Distribution</div><div>Not Centrally Enriched</div></div><div><div>SpaMo & FIMO</div><div></div></div></div>						
<div><div><div>Motif Found</div><div></div><div>Reverse Complement ⇌</div><div>Show Less ↓</div></div><div><div>Discovery/Enrichment Program</div><div>DREME</div></div><div><div>E-value</div><div>1.2e-018</div></div><div><div>Known or Similar Motifs</div><div>POU5F1P1_DBD_1 POU5F1B (MA0792.1) POU2F3_DBD_1</div></div><div><div>Distribution</div><div>Not Centrally Enriched</div></div><div><div>SpaMo & FIMO</div><div></div></div></div>						
<div><div><div>Motif Found</div><div></div><div>Reverse Complement ⇌</div><div>Show Less ↓</div></div><div><div>Discovery/Enrichment Program</div><div>DREME</div></div><div><div>E-value</div><div>4.2e-163</div></div><div><div>Known or Similar Motifs</div><div>Zic1_secondary (UP00102_2) Zic3_secondary (UP00006_2) Zic2_secondary (UP00057_2)</div></div><div><div>Distribution</div><div>Not Centrally Enriched</div></div><div><div>SpaMo & FIMO</div><div><ul style="list-style-type: none">Motif Spacing AnalysisMotif Sites in GFF3</div></div></div>						
<div><div><div>Motif Found</div><div></div><div>Reverse Complement ⇌</div><div>Show Less ↓</div></div><div><div>Discovery/Enrichment Program</div><div>DREME</div></div><div><div>E-value</div><div>3.4e-060</div></div><div><div>Known or Similar Motifs</div><div>Tcf2a_primary (UP00046_1)</div></div><div><div>Distribution</div><div>Not Centrally Enriched</div></div><div><div>SpaMo & FIMO</div><div></div></div></div>						
<div><div><div>Motif Found</div><div></div><div>Reverse Complement ⇌</div><div>Show Less ↓</div></div><div><div>Discovery/Enrichment Program</div><div>DREME</div></div><div><div>E-value</div><div>7.9e-014</div></div><div><div>Known or Similar Motifs</div><div>Ascl2 (MA0816.1) Ascl2_DBD NHLH1_DBD</div></div><div><div>Distribution</div><div>Not Centrally Enriched</div></div><div><div>SpaMo & FIMO</div><div></div></div></div>						
<div><div><div>Motif Found</div><div></div><div>Reverse Complement ⇌</div><div>Show Less ↓</div></div><div><div>Discovery/Enrichment Program</div><div>DREME</div></div><div><div>E-value</div><div>4.1e-006</div></div><div><div>Known or Similar Motifs</div><div>BACH2 (MA1101.1) Nfe2l2 (MA0150.2) MAF::NFE2 (MA0501.1)</div></div><div><div>Distribution</div><div>Not Centrally Enriched</div></div><div><div>SpaMo & FIMO</div><div></div></div></div>						
<div><div><div>Motif Found</div><div></div><div>Reverse Complement ⇌</div><div>Show Less ↓</div></div><div><div>Discovery/Enrichment Program</div><div>DREME</div></div><div><div>E-value</div><div>2.7e-002</div></div><div><div>Known or Similar Motifs</div><div>CTCF (MA0139.1) CTCF_full</div></div><div><div>Distribution</div><div>Not Centrally Enriched</div></div><div><div>SpaMo & FIMO</div><div></div></div></div>						
<div><div><div>Motif Found</div><div></div><div>Reverse Complement ⇌</div><div>Show Less ↓</div></div><div><div>Discovery/Enrichment Program</div><div>DREME</div></div><div><div>E-value</div><div>2.4e-086</div></div><div><div>Known or Similar Motifs</div><div></div></div><div><div>Distribution</div><div>Not Centrally Enriched</div></div><div><div>SpaMo & FIMO</div><div><ul style="list-style-type: none">Motif Spacing AnalysisMotif Sites in GFF3</div></div></div>						
<div><div><div>Motif Found</div><div></div><div>Reverse Complement ⇌</div><div>Show Less ↓</div></div><div><div>Discovery/Enrichment Program</div><div>DREME</div></div><div><div>E-value</div><div>1.2e-052</div></div><div><div>Known or Similar Motifs</div><div>BSX_DBD BSX (MA0876.1) BARX1_DBD_2</div></div><div><div>Distribution</div><div>Not Centrally Enriched</div></div><div><div>SpaMo & FIMO</div><div><ul style="list-style-type: none">Motif Spacing AnalysisMotif Sites in GFF3</div></div></div>						
<div><div><div>Motif Found</div><div></div><div>Reverse Complement ⇌</div><div>Show Less ↓</div></div><div><div>Discovery/Enrichment Program</div><div></div></div><div><div>E-value</div><div></div></div><div><div>Known or Similar Motifs</div><div></div></div><div><div>Distribution</div><div></div></div><div><div>SpaMo & FIMO</div><div></div></div></div>						

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Reverse Complement ⇌						
	Motif Found	Discovery/Enrichment Program	E-value	Known or Similar Motifs	Distribution	SpaMo & FIMO
		DREME	9.2e-008		Not Centrally Enriched	<ul style="list-style-type: none"> • Motif Spacing Analysis • Motif Sites in GFF3
Reverse Complement ⇌						
	Motif Found	Discovery/Enrichment Program	E-value	Known or Similar Motifs	Distribution	SpaMo & FIMO
		DREME	3.6e-006		Not Centrally Enriched	<ul style="list-style-type: none"> • Motif Spacing Analysis • Motif Sites in GFF3
Reverse Complement ⇌						
	Motif Found	Discovery/Enrichment Program	E-value	Known or Similar Motifs	Distribution	SpaMo & FIMO
		DREME	6.0e-006		Not Centrally Enriched	<ul style="list-style-type: none"> • Motif Spacing Analysis • Motif Sites in GFF3
Reverse Complement ⇌						
	Motif Found	Discovery/Enrichment Program	E-value	Known or Similar Motifs	Distribution	SpaMo & FIMO
		DREME	9.2e-006	Nkx2-9_3082.1 (UP00119_1) Nkx2-3_3435.1 (UP00190_1)	Not Centrally Enriched	<ul style="list-style-type: none"> • Motif Spacing Analysis • Motif Sites in GFF3
Reverse Complement ⇌						
	Motif Found	Discovery/Enrichment Program	E-value	Known or Similar Motifs	Distribution	SpaMo & FIMO
		DREME	3.7e-005		Not Centrally Enriched	<ul style="list-style-type: none"> • Motif Spacing Analysis • Motif Sites in GFF3
Reverse Complement ⇌						
	Motif Found	Discovery/Enrichment Program	E-value	Known or Similar Motifs	Distribution	SpaMo & FIMO
		DREME	3.6e-003		Not Centrally Enriched	<ul style="list-style-type: none"> • Motif Spacing Analysis • Motif Sites in GFF3
Reverse Complement ⇌						
	Motif Found	Discovery/Enrichment Program	E-value	Known or Similar Motifs	Distribution	SpaMo & FIMO
		DREME	1.0e-002	Bcl6b_primary (UP00043_1)	Not Centrally Enriched	<ul style="list-style-type: none"> • Motif Spacing Analysis • Motif Sites in GFF3
Reverse Complement ⇌						
	Motif Found	Discovery/Enrichment Program	E-value	Known or Similar Motifs	Distribution	SpaMo & FIMO
		DREME	1.1e-002	NKX3-2_DBD NKX3-2 (MA0122.2) Nkx2-3_3435.1 (UP00190_1)	Not Centrally Enriched	<ul style="list-style-type: none"> • Motif Spacing Analysis • Motif Sites in GFF3
Reverse Complement ⇌						
	Motif Found	Discovery/Enrichment Program	E-value	Known or Similar Motifs	Distribution	SpaMo & FIMO
		DREME	3.0e-002	FOXJ3_DBD_2	Not Centrally Enriched	<ul style="list-style-type: none"> • Motif Spacing Analysis • Motif Sites in GFF3

PROGRAMS

Command	Running Time	Status	Outputs
getsize ./Nanog-idr-merged-dreme.fasta 1> \$metrics	0.09s	Success	
fasta-most -min 50 < ./Nanog-idr-merged-dreme.fasta 1> \$metrics	0.22s	Success	
fasta-center -dna -len 100 < ./Nanog-idr-merged-dreme.fasta 1> ./seqs-centered	0.38s	Success	<ul style="list-style-type: none"> • seqs-centered
fasta-shuffle-letters ./seqs-centered ./seqs-shuffled -kmer 2 -tag -dinuc -dna -seed 1	0.09s	Success	<ul style="list-style-type: none"> • seqs-shuffled
fasta-get-markov -nostatus -nosummary -dna -m 1 ./Nanog-idr-merged-dreme.fasta ./background	0.05s	Success	<ul style="list-style-type: none"> • Background
meme ./seqs-centered -oc meme_out -mod zoops -nmotifs 3 -minw 6 -maxw 30 -bfile ./background -dna -searchsize 100000 -time 5082 -revcomp -nostatus	42m 35.03s	Success	<ul style="list-style-type: none"> • MEME HTML • MEME text • MEME XML
dreme -verbosity 1 -oc dreme_out -png -dna -p ./seqs-centered -n ./seqs-shuffled -t 6117 -e 0.05	1h 21m 37.51s	Success	<ul style="list-style-type: none"> • DREME HTML • DREME text • DREME XML
centrimo -seqlen 231 -verbosity 1 -oc centrimo_out -bfile ./background -score 5.0 -ethresh 10.0 ./Nanog-idr-merged-dreme.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	8.67s	Warnings	<ul style="list-style-type: none"> • Centrimo HTML • Site Counts
tomtom -verbosity 1 -oc meme_tomtom_out -min-overlap 5 -dist pearson -evaluate -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	1m 46.88s	Success	<ul style="list-style-type: none"> • Tomtom HTML • Tomtom TSV • Tomtom XML
tomtom -verbosity 1 -oc dreme_tomtom_out -min-overlap 5 -dist pearson -evaluate -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	36.68s	Success	<ul style="list-style-type: none"> • Tomtom HTML • Tomtom TSV • Tomtom XML
tomtom -verbosity 1 -text -thresh 0.1 ./combined.meme ./combined.meme 1> ./motif_alignment.txt	2.15s	Success	<ul style="list-style-type: none"> • Motif Alignment
spamo -verbosity 1 -oc spamo_out 1 -bgfile ./background -keepprimary -primary ACAAWRG ./Nanog-idr-merged-dreme.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	2m 32.49s	Warnings	<ul style="list-style-type: none"> • SpaMo HTML
spamo -verbosity 1 -oc spamo_out 2 -bgfile ./background -keepprimary -primary HHATTWRCATDWCAAW ./Nanog-idr-merged-dreme.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	3m 56.06s	Warnings	<ul style="list-style-type: none"> • SpaMo HTML
spamo -verbosity 1 -oc spamo_out 3 -bgfile ./background -keepprimary -primary CCYGTGD ./Nanog-idr-merged-dreme.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 17.62s	Warnings	<ul style="list-style-type: none"> • SpaMo HTML

meme-suite.org/opal-jobs/appMEMECHIP_5.0.51556567888583-1969416756/meme-chip.html

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MEME ChIP

Command	Running Time	Status	Outputs
fimo --parse-genomic-coord --verbosity 1 --oc fimo_out_21 --bgfile ./background --motif GTACTTVA dreme_out/dreme.xml ./Nanog-idr-merged-dreme.fasta	2.58s	Success	<ul style="list-style-type: none">FIMO.GFFFIMO.HTMLFIMO.TSV
fimo --parse-genomic-coord --verbosity 1 --oc fimo_out_22 --bgfile ./background --motif CATTCTTY dreme_out/dreme.xml ./Nanog-idr-merged-dreme.fasta	2.40s	Success	<ul style="list-style-type: none">FIMO.GFFFIMO.HTMLFIMO.TSV
fimo --parse-genomic-coord --verbosity 1 --oc fimo_out_23 --bgfile ./background --motif CTATTCTY dreme_out/dreme.xml ./Nanog-idr-merged-dreme.fasta	2.44s	Success	<ul style="list-style-type: none">FIMO.GFFFIMO.HTMLFIMO.TSV
fimo --parse-genomic-coord --verbosity 1 --oc fimo_out_24 --bgfile ./background --motif AAATKCCT dreme_out/dreme.xml ./Nanog-idr-merged-dreme.fasta	2.42s	Success	<ul style="list-style-type: none">FIMO.GFFFIMO.HTMLFIMO.TSV
fimo --parse-genomic-coord --verbosity 1 --oc fimo_out_25 --bgfile ./background --motif AGYACTTA dreme_out/dreme.xml ./Nanog-idr-merged-dreme.fasta	2.51s	Success	<ul style="list-style-type: none">FIMO.GFFFIMO.HTMLFIMO.TSV
fimo --parse-genomic-coord --verbosity 1 --oc fimo_out_26 --bgfile ./background --motif ABAATAAA dreme_out/dreme.xml ./Nanog-idr-merged-dreme.fasta	2.43s	Success	<ul style="list-style-type: none">FIMO.GFFFIMO.HTMLFIMO.TSV

INPUT FILES

Alphabet

Background source: built from the (primary) sequences

Name	Bg.				Bg.	Name
Adenine	0.243	A	~	T	0.243	Thymine
Cytosine	0.257	C	~	G	0.257	Guanine

Primary Sequences

Database	Source	Sequence Count
Nanog-idr-merged-dreme	Nanog-idr-merged-dreme.fasta	11035

Motifs

Database	Source	Motif Count
golma2013	db/EUKARYOTE/golma2013.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
5.0.5 (Release date: Mon Mar 18 20:12:19 2019 -0700)

Reference
Philip Machanick and Timothy L. Bailey, "MEME-ChIP: motif analysis of large DNA datasets", *Bioinformatics*, 2712, 1696-1697, 2011.

Command line summary
meme-chip -oc . -time 300 -ccut 100 -order 1 -db db/EUKARYOTE/golma2013.meme -db db/JASPAR/JASPAR2018_CORE vertebrates_non-redundant.meme -db db/MOUSE/uniprobe_mouse.meme -meme-mod zoops -meme-minw 6 -meme-maxw 30 -meme-nmotifs 3 -meme-searchsize 100000 -dreme-e 0.05 -centrimo-score 5.0 -centrimo-ethresh 10.0 Nanog-idr-merged-dreme.fasta