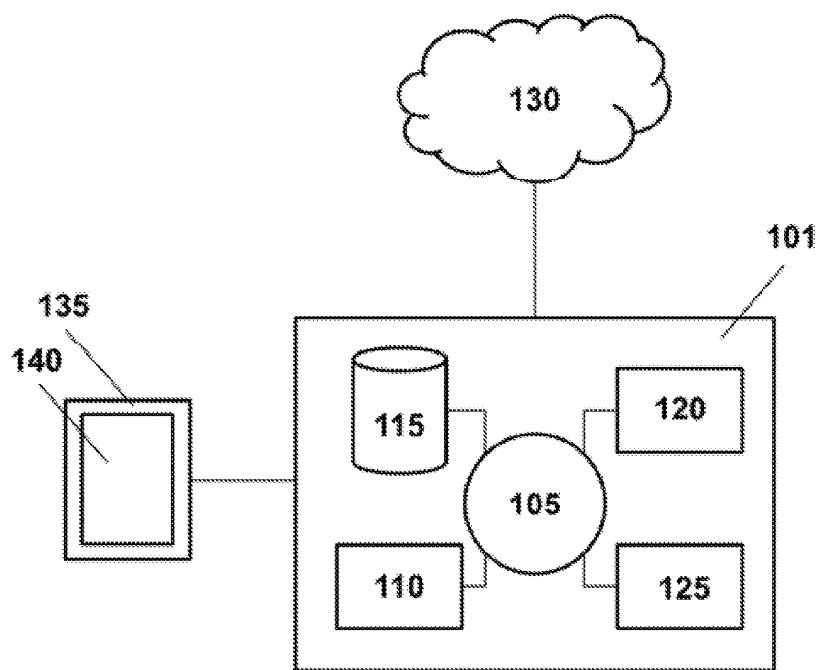
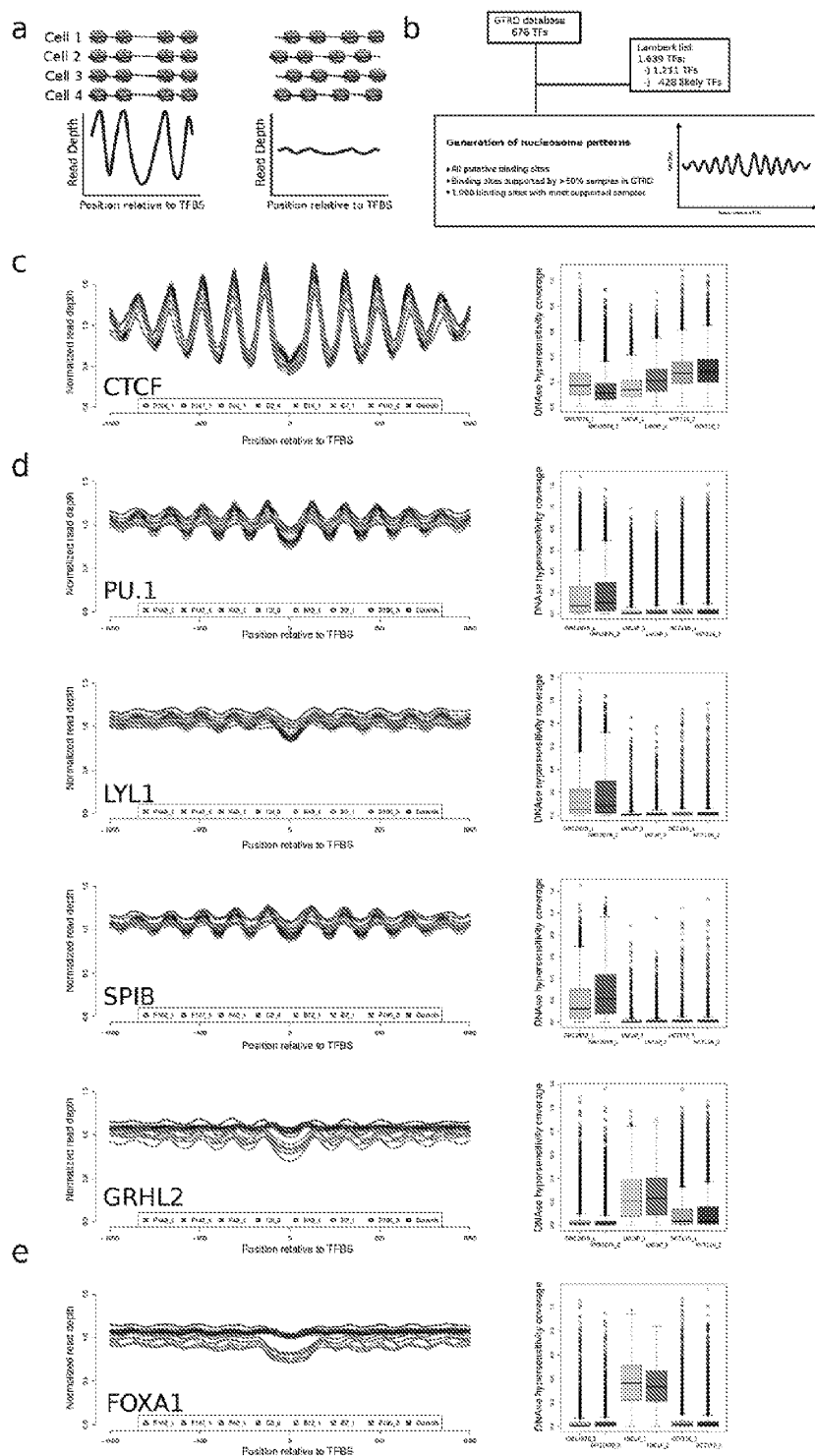
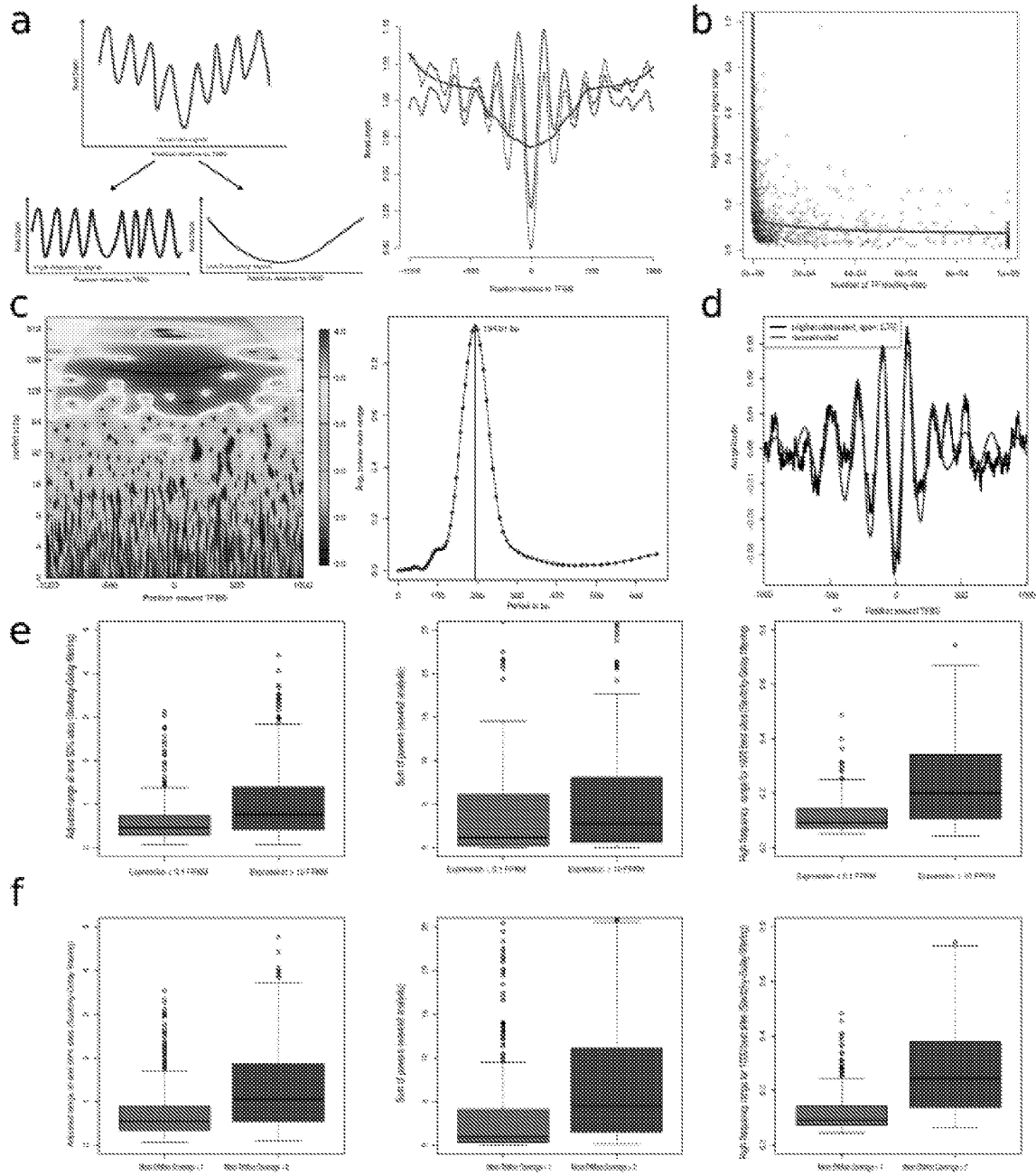


FIG. 1





FIGs. 3A-3F



FIGs. 4A-4F

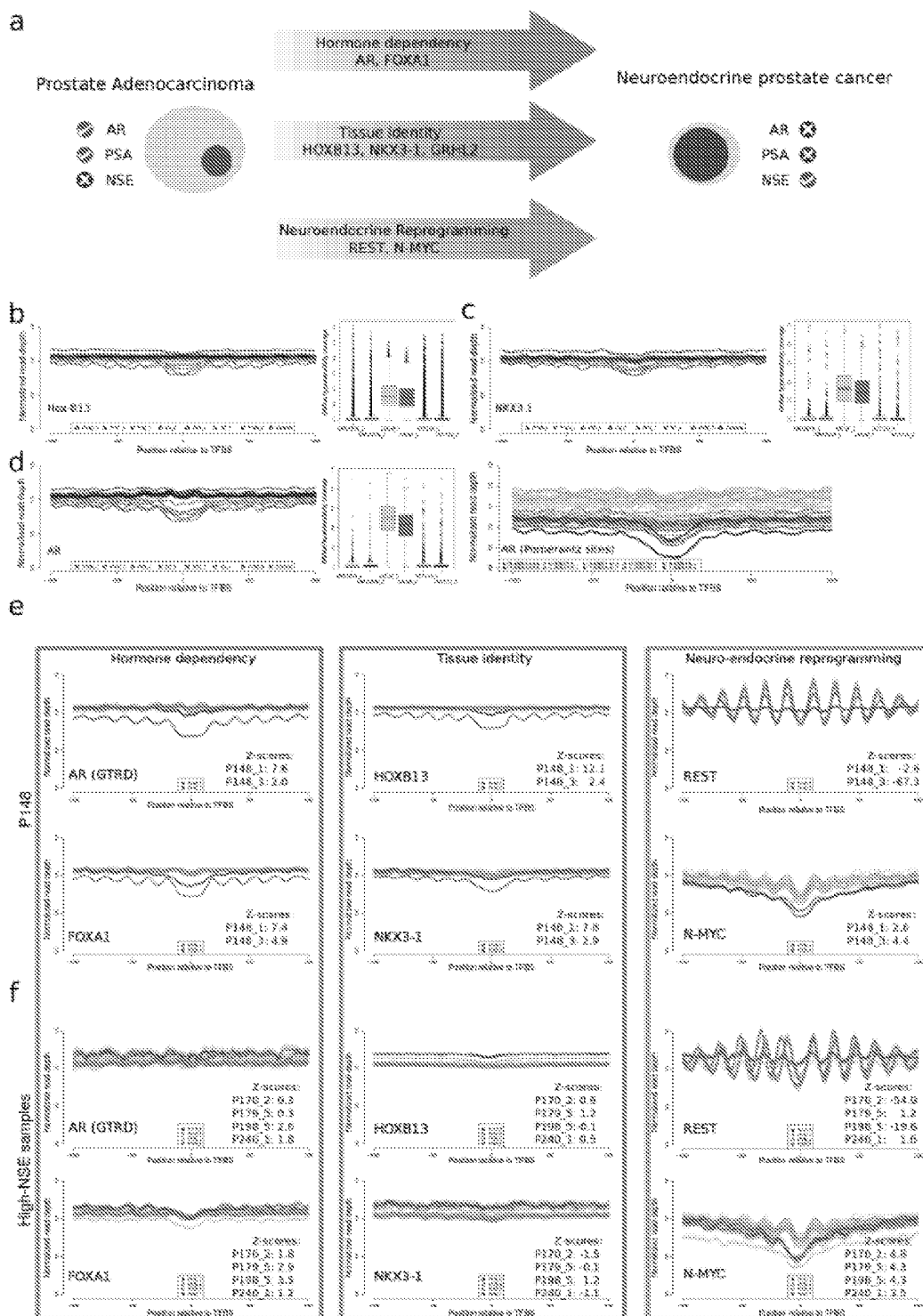
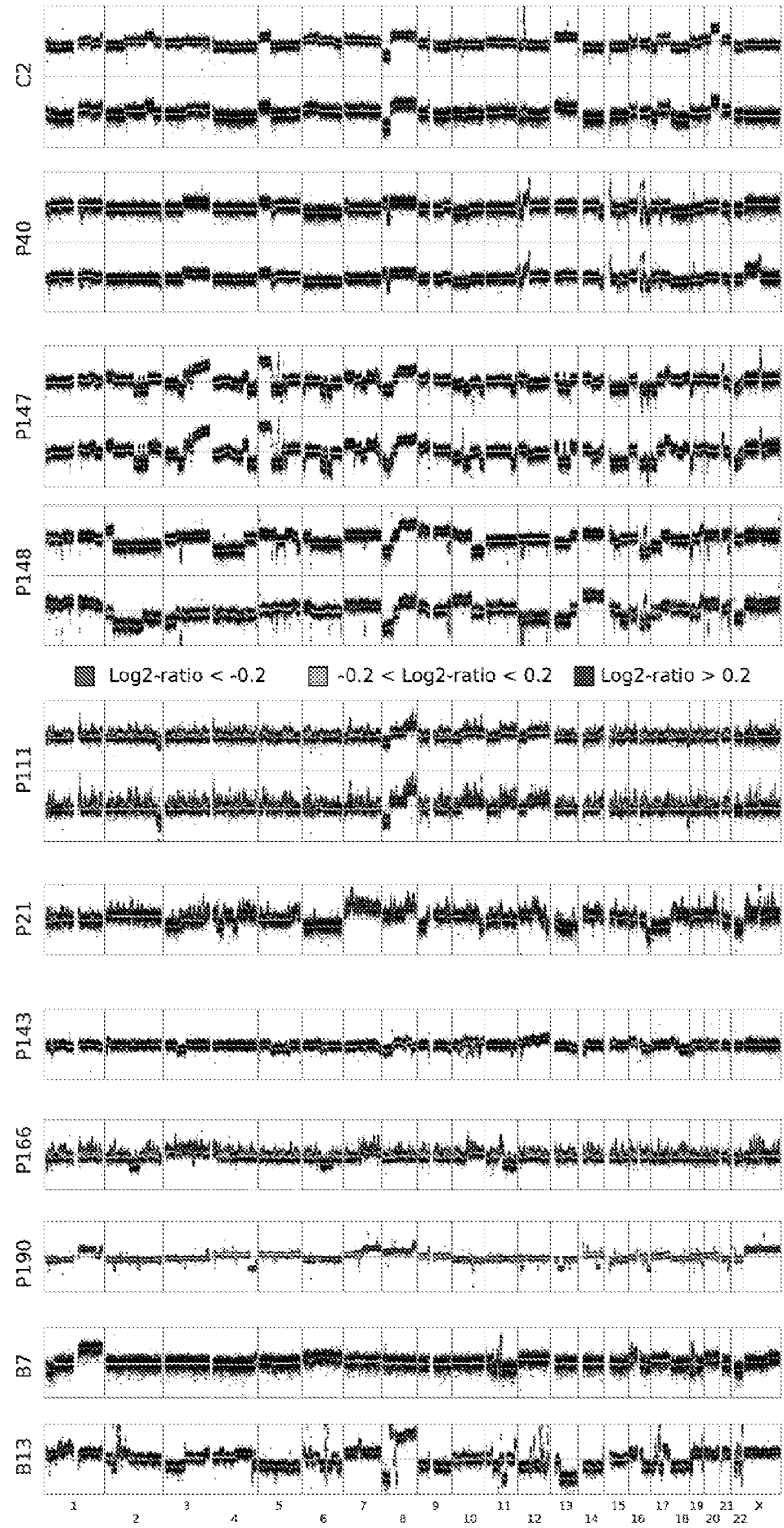


FIG. 5



FIGs. 6A-6E

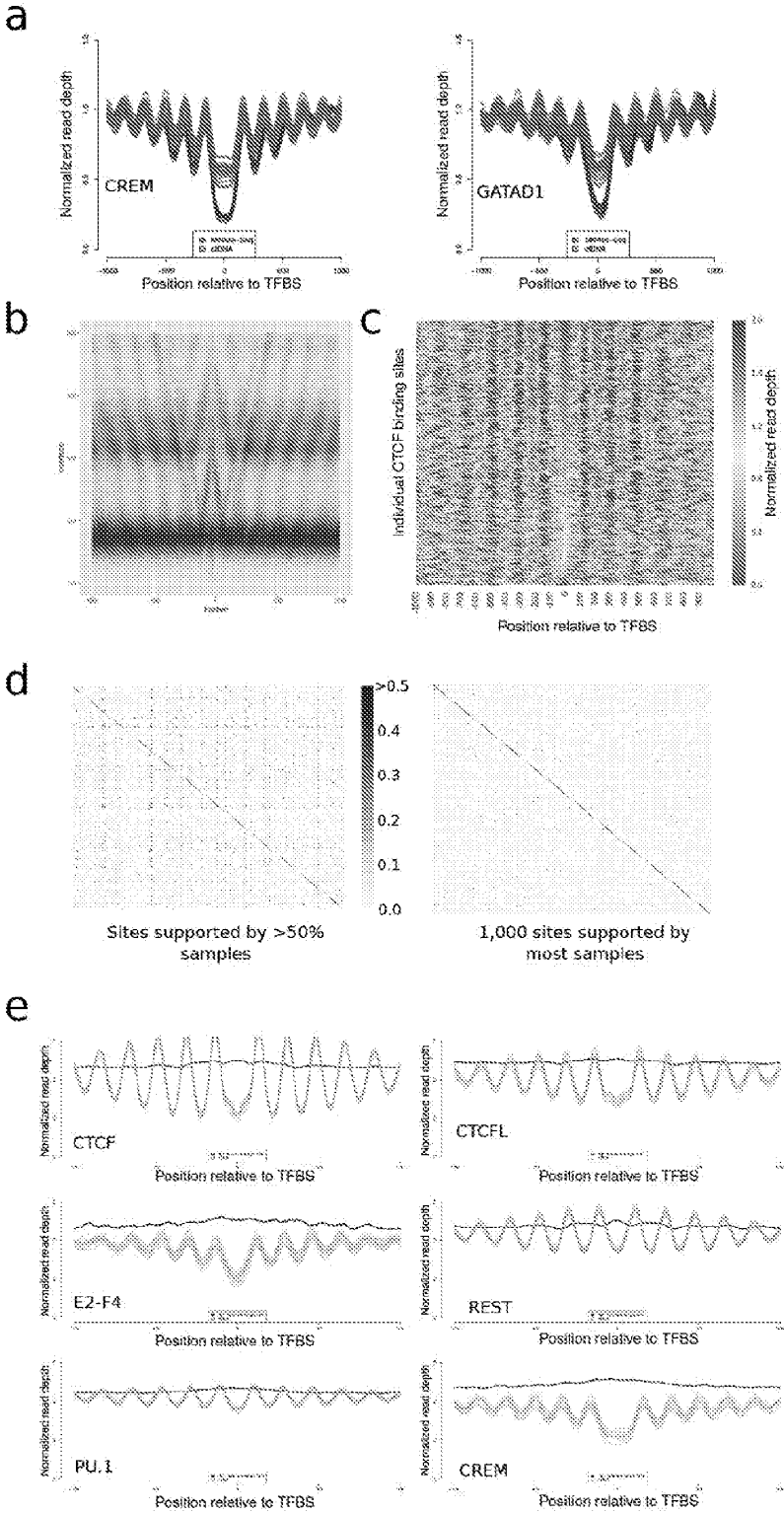
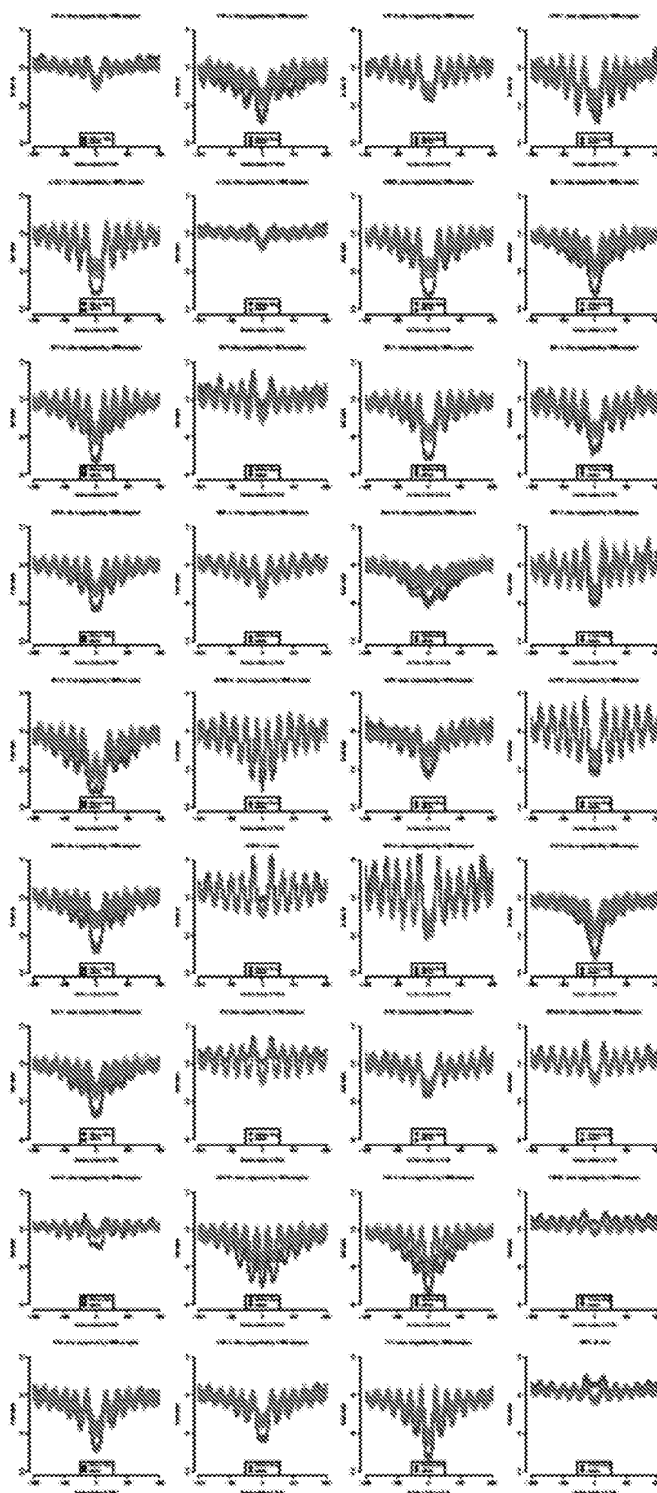
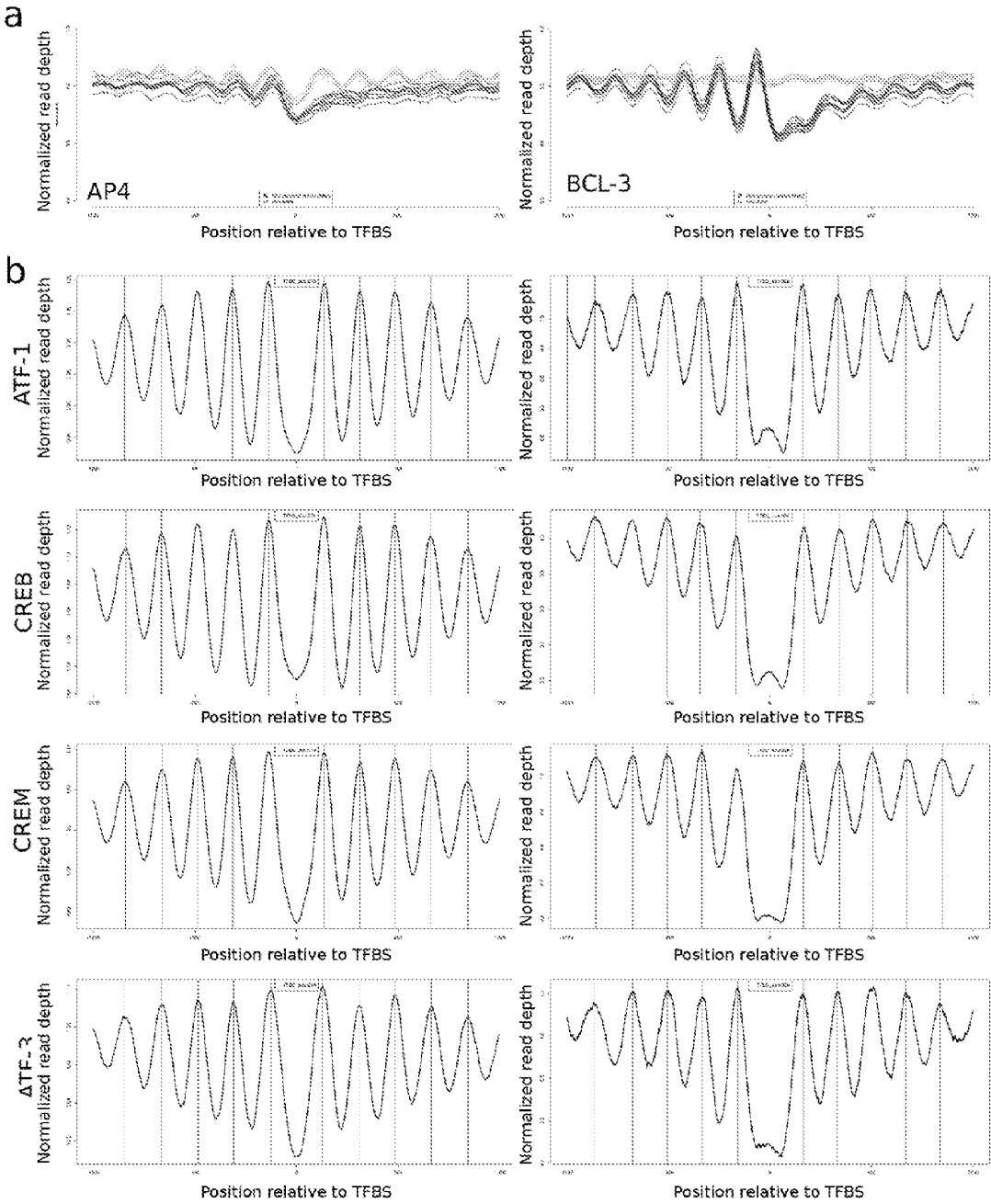


FIG. 7



FIGs. 8A-8B



FIGs. 8C-8E

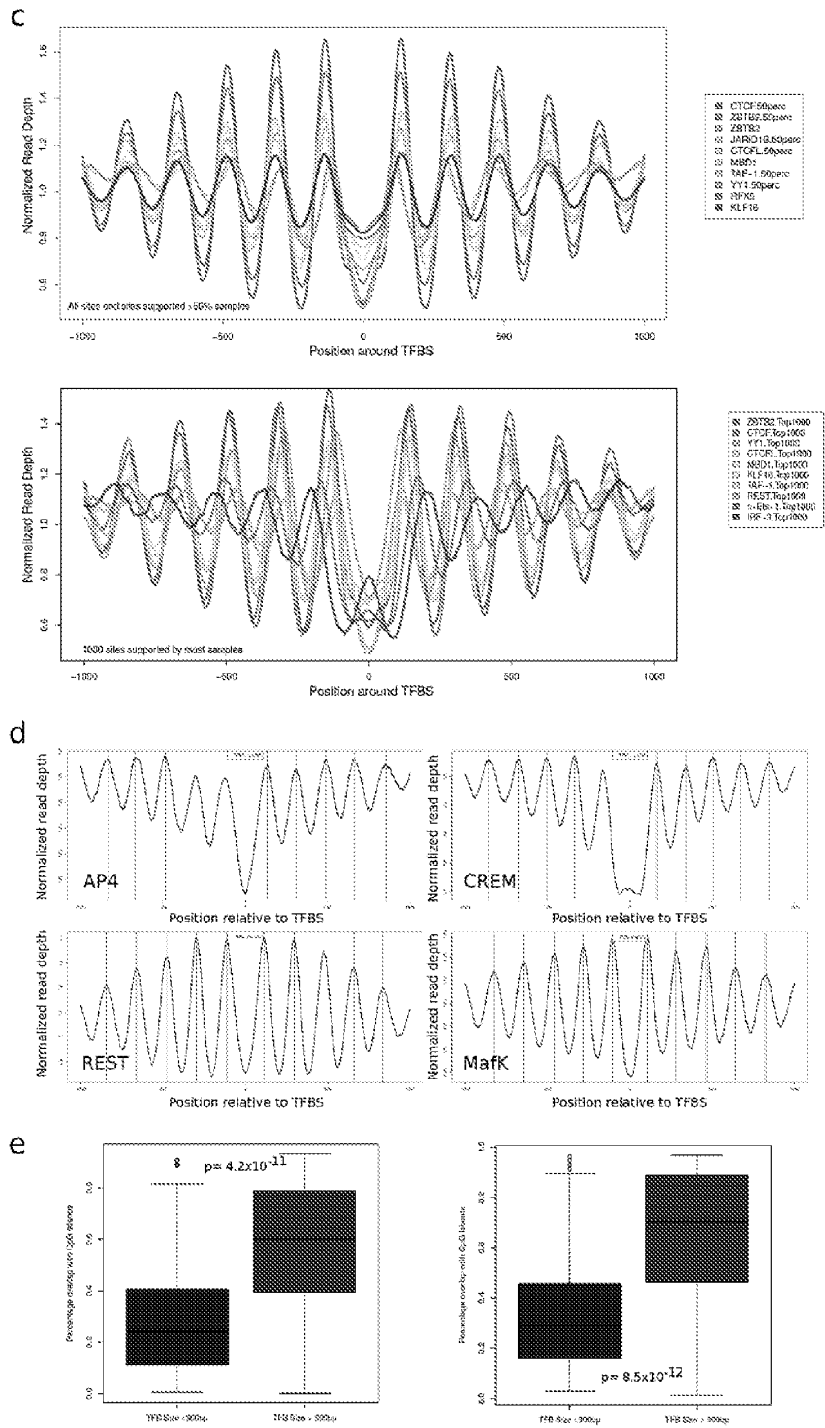
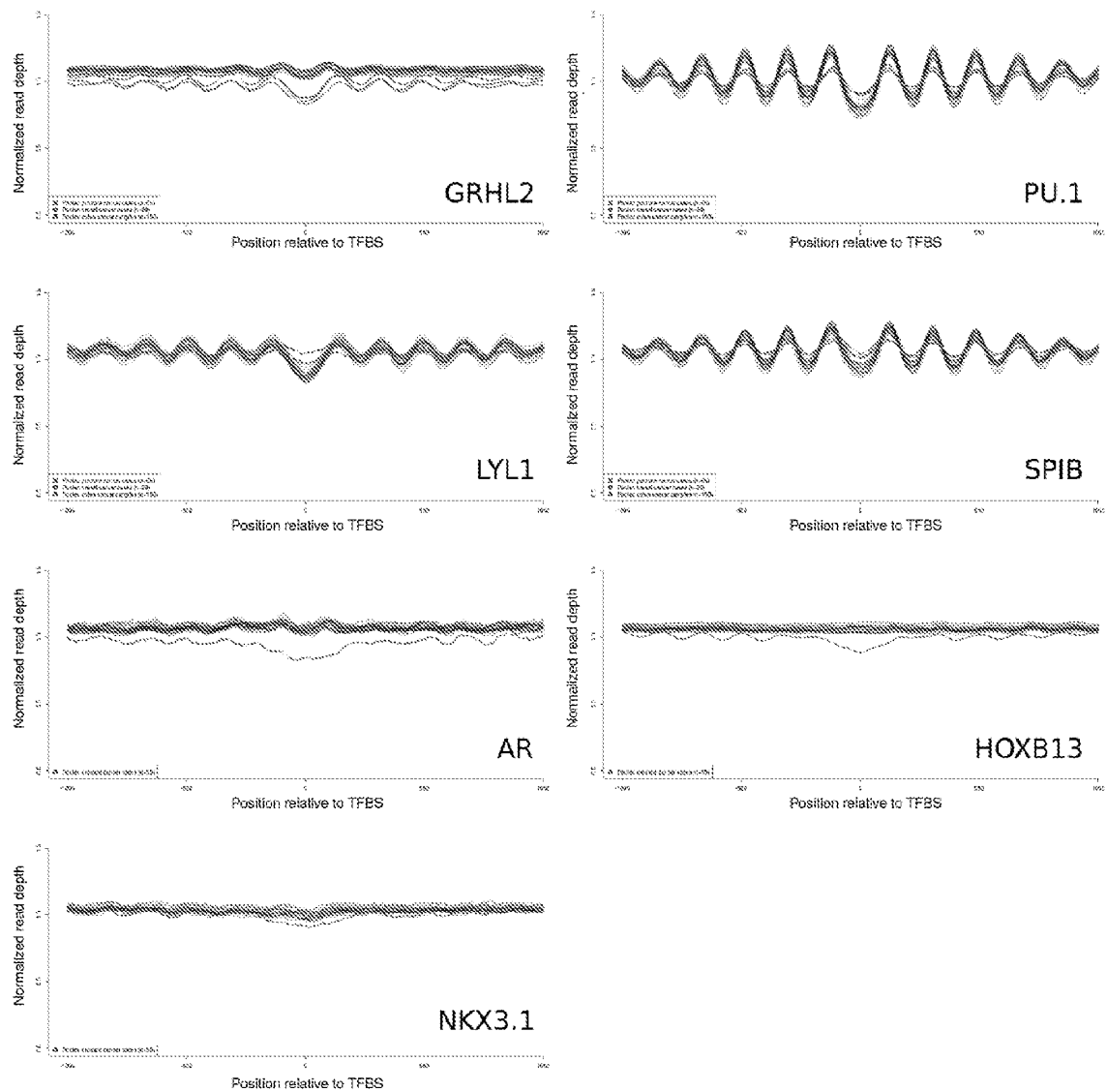
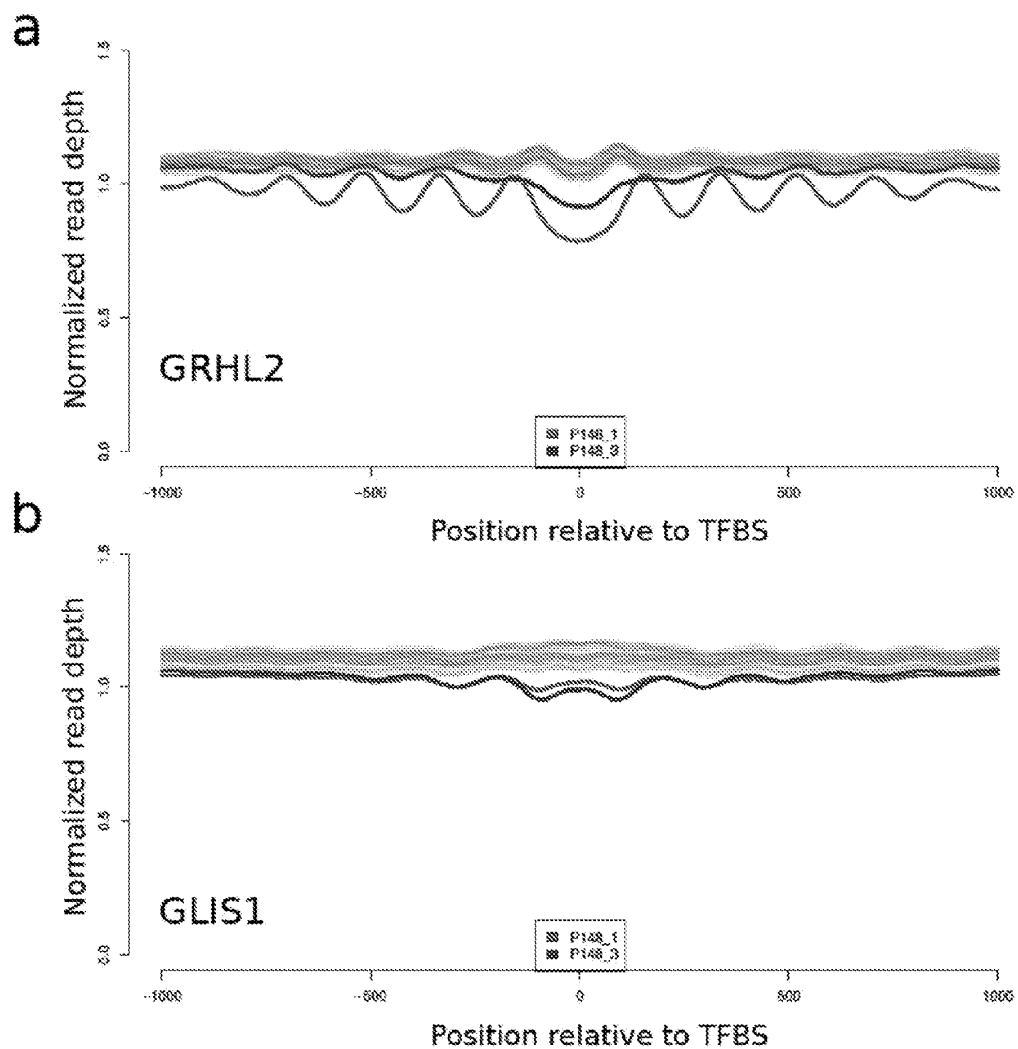


FIG. 9



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FIGs. 10A-10B

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FIG. 11

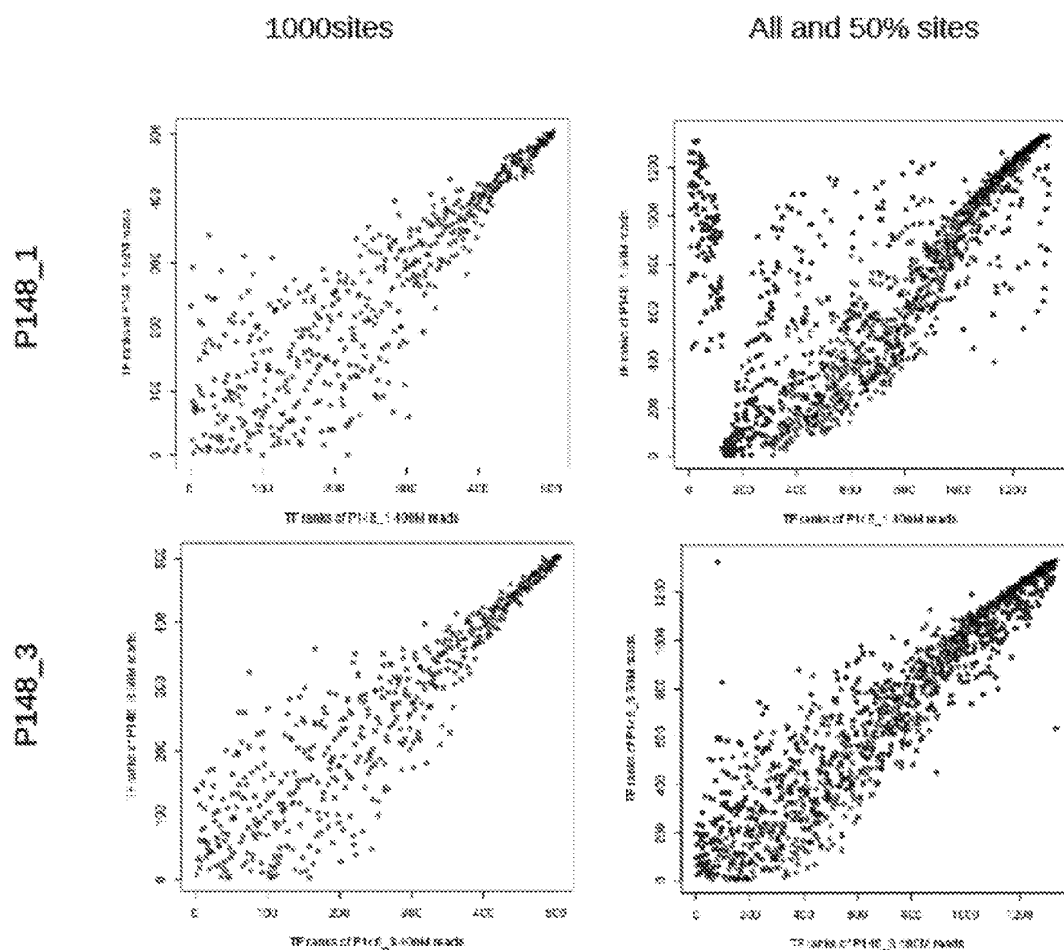
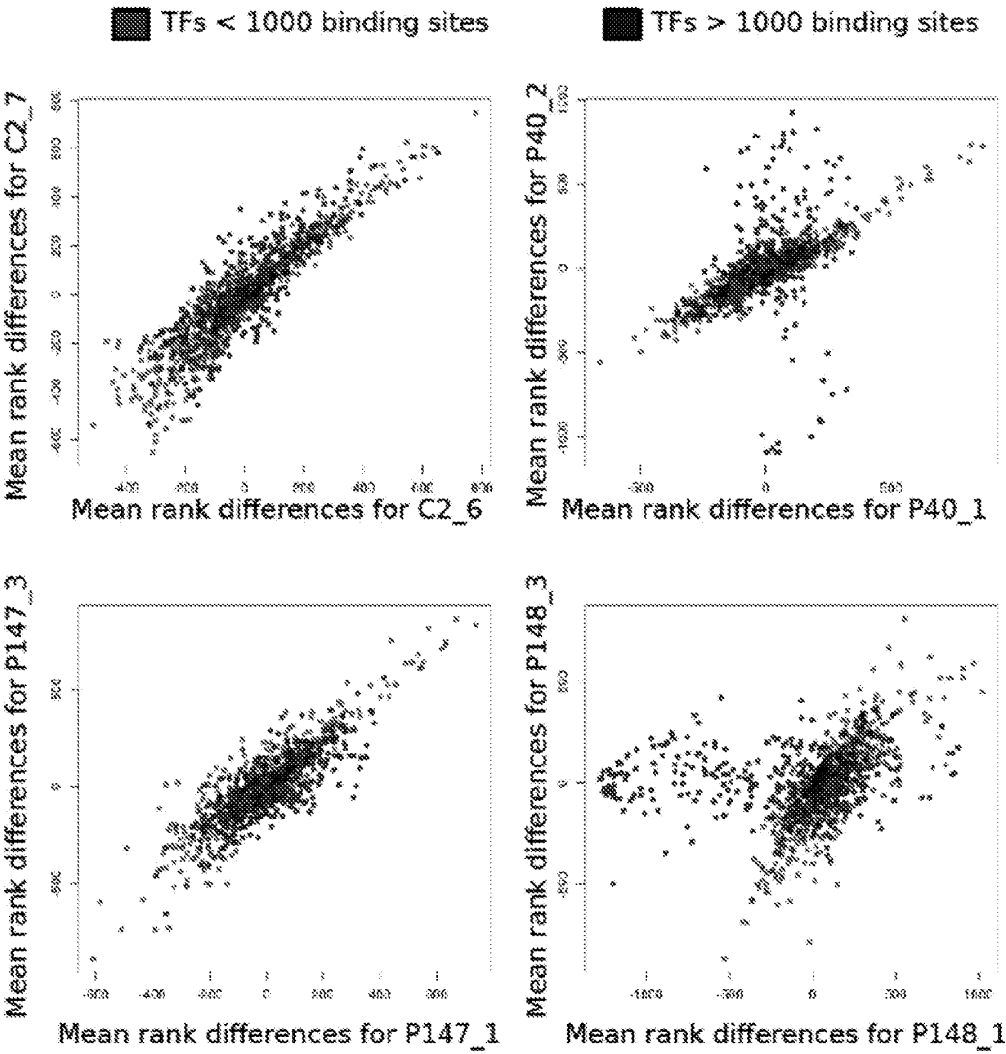
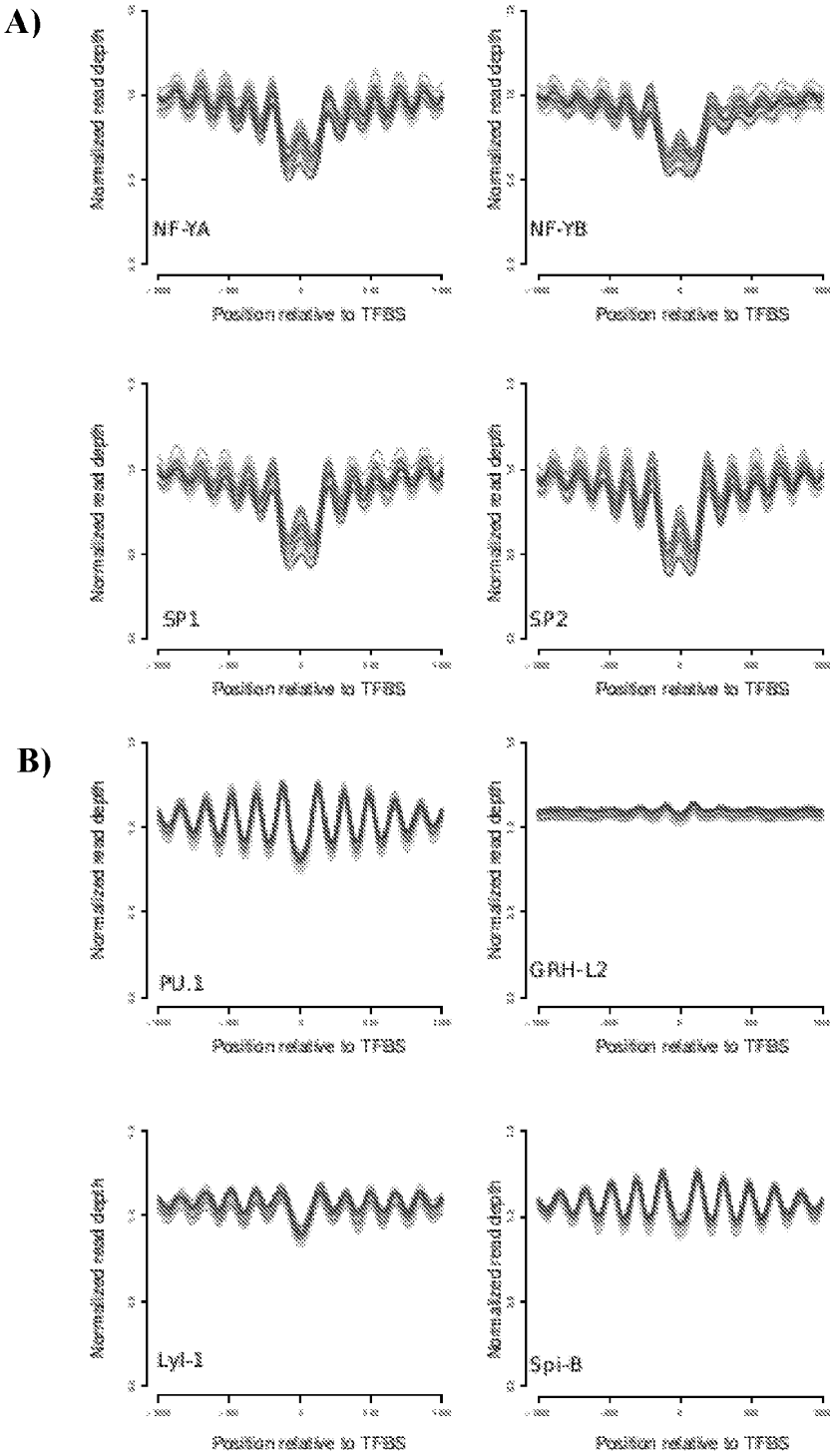


FIG. 12



FIGs. 13A-13B



FIGs. 14A-14B

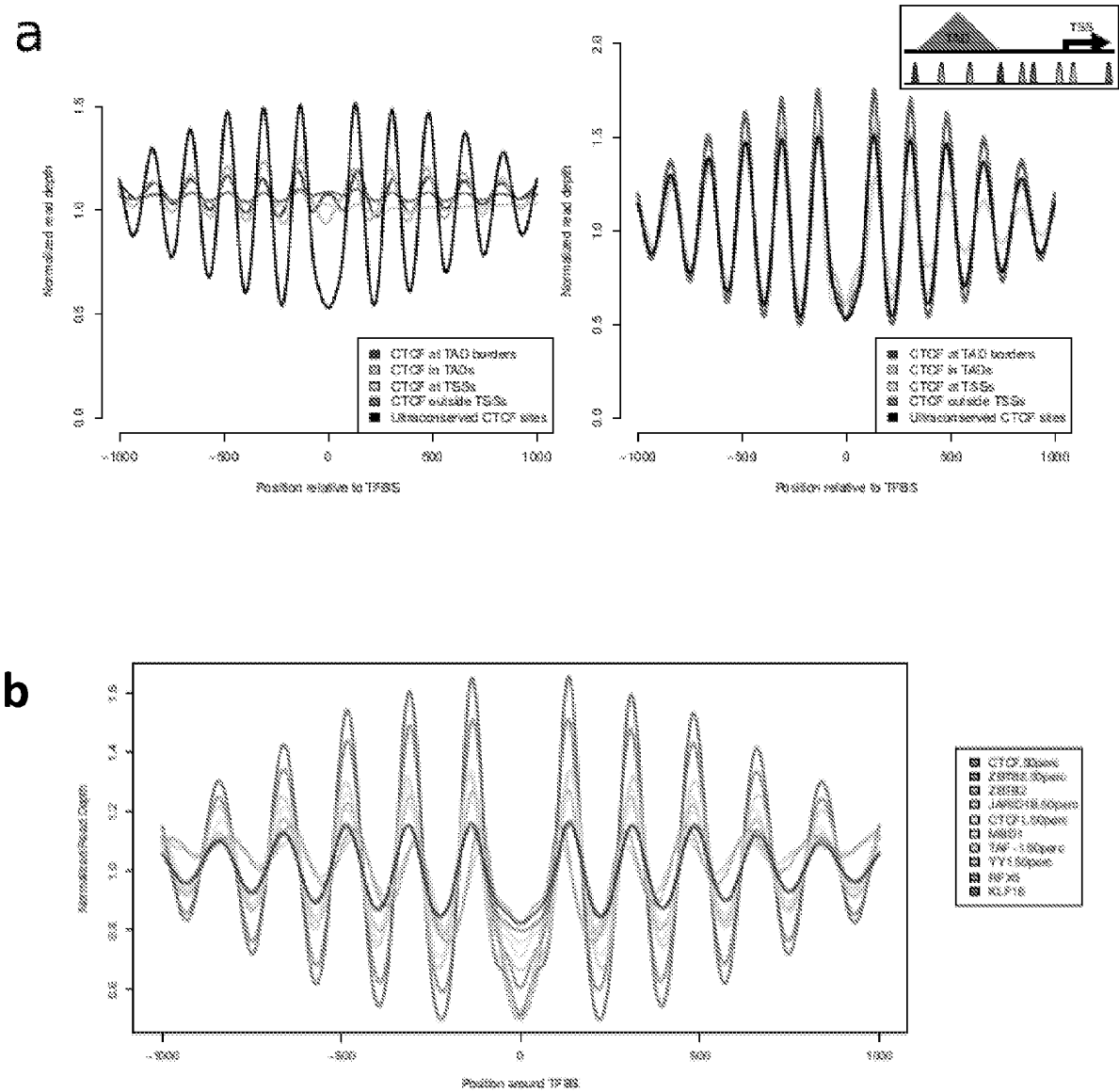
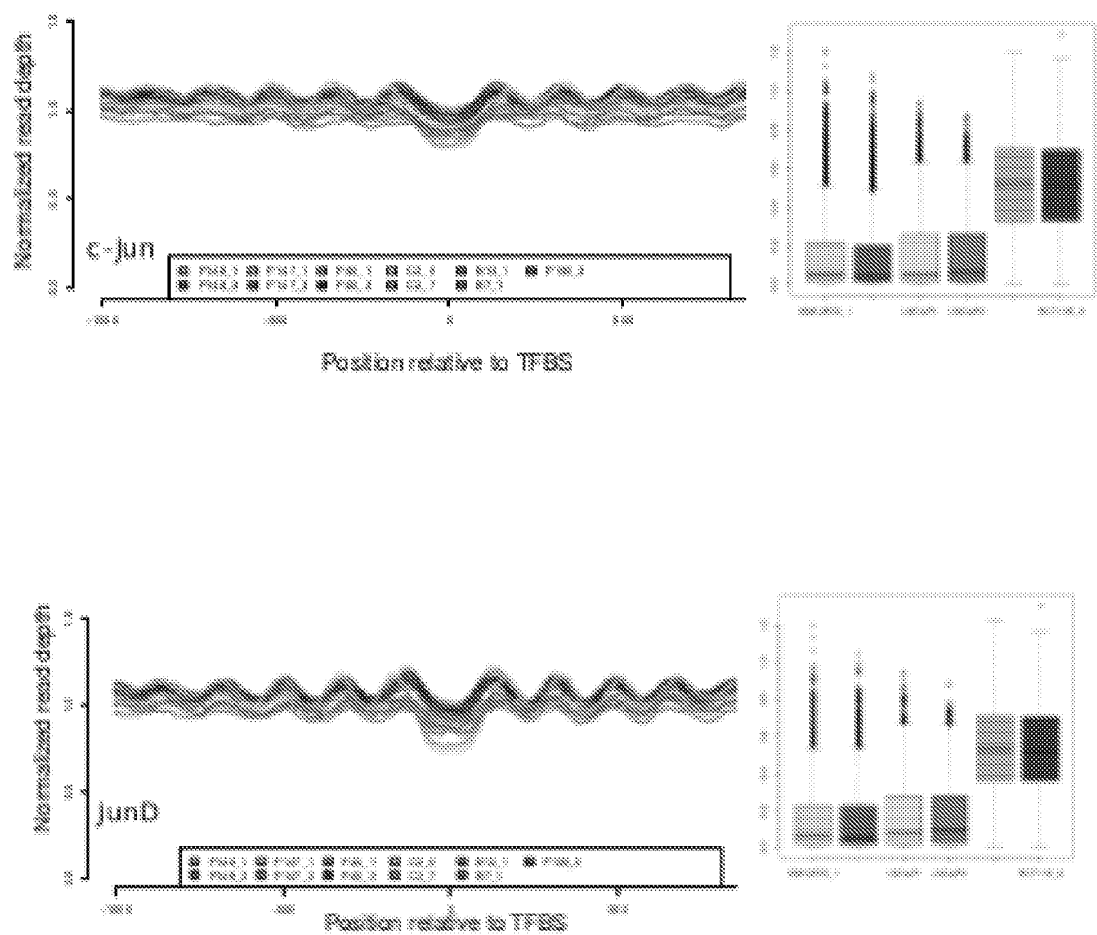
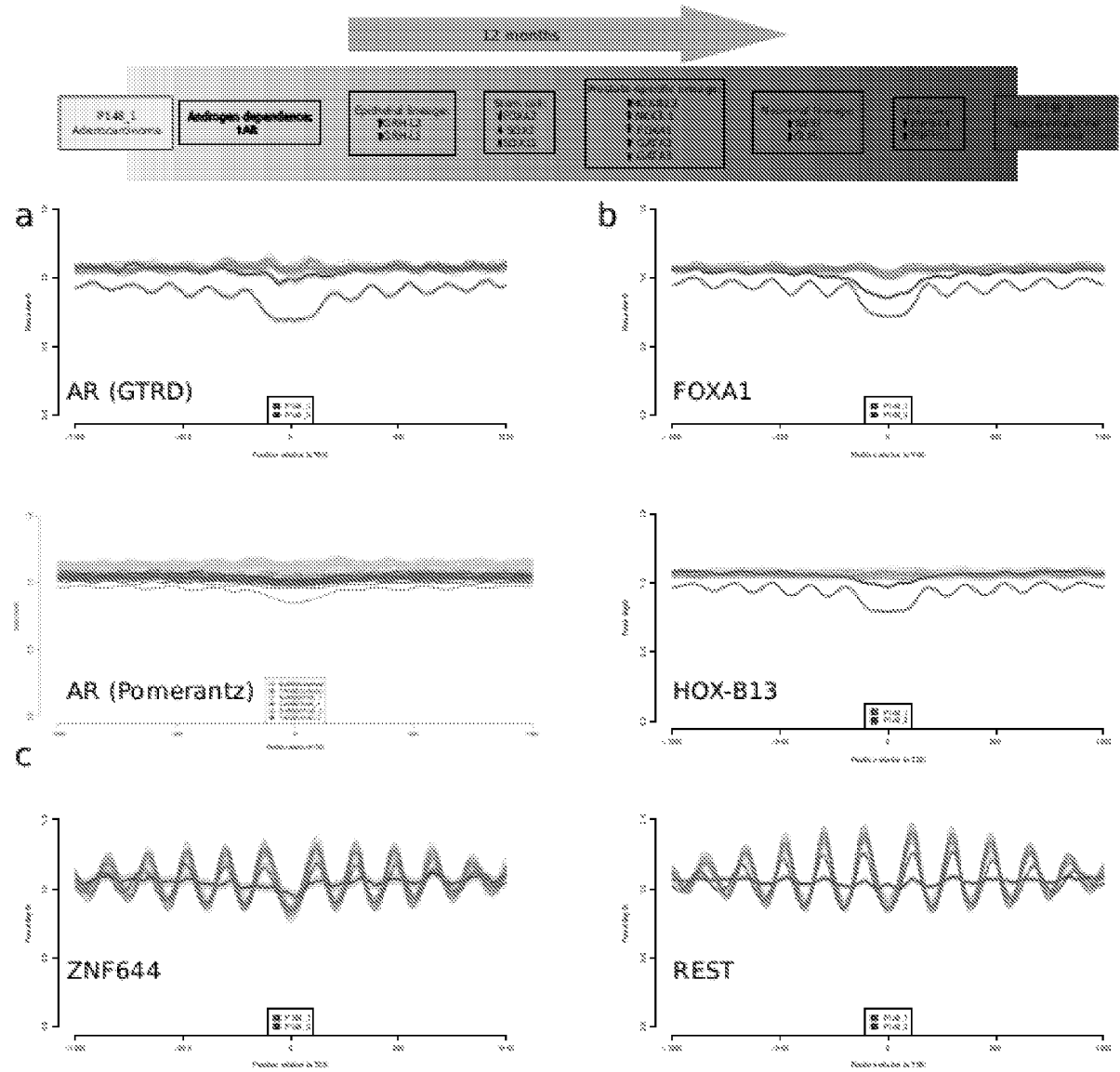


FIG. 15

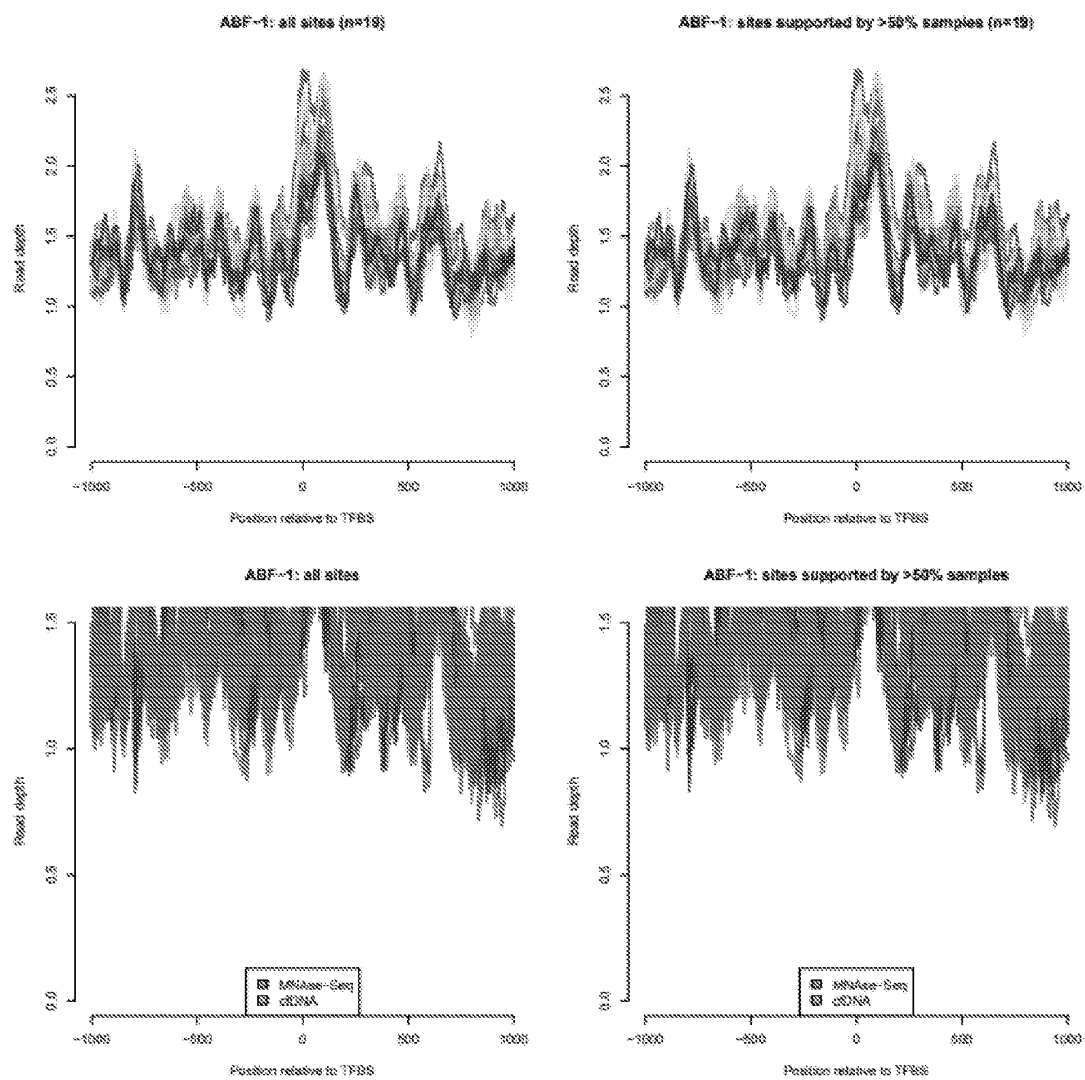


FIGs. 16A-16C

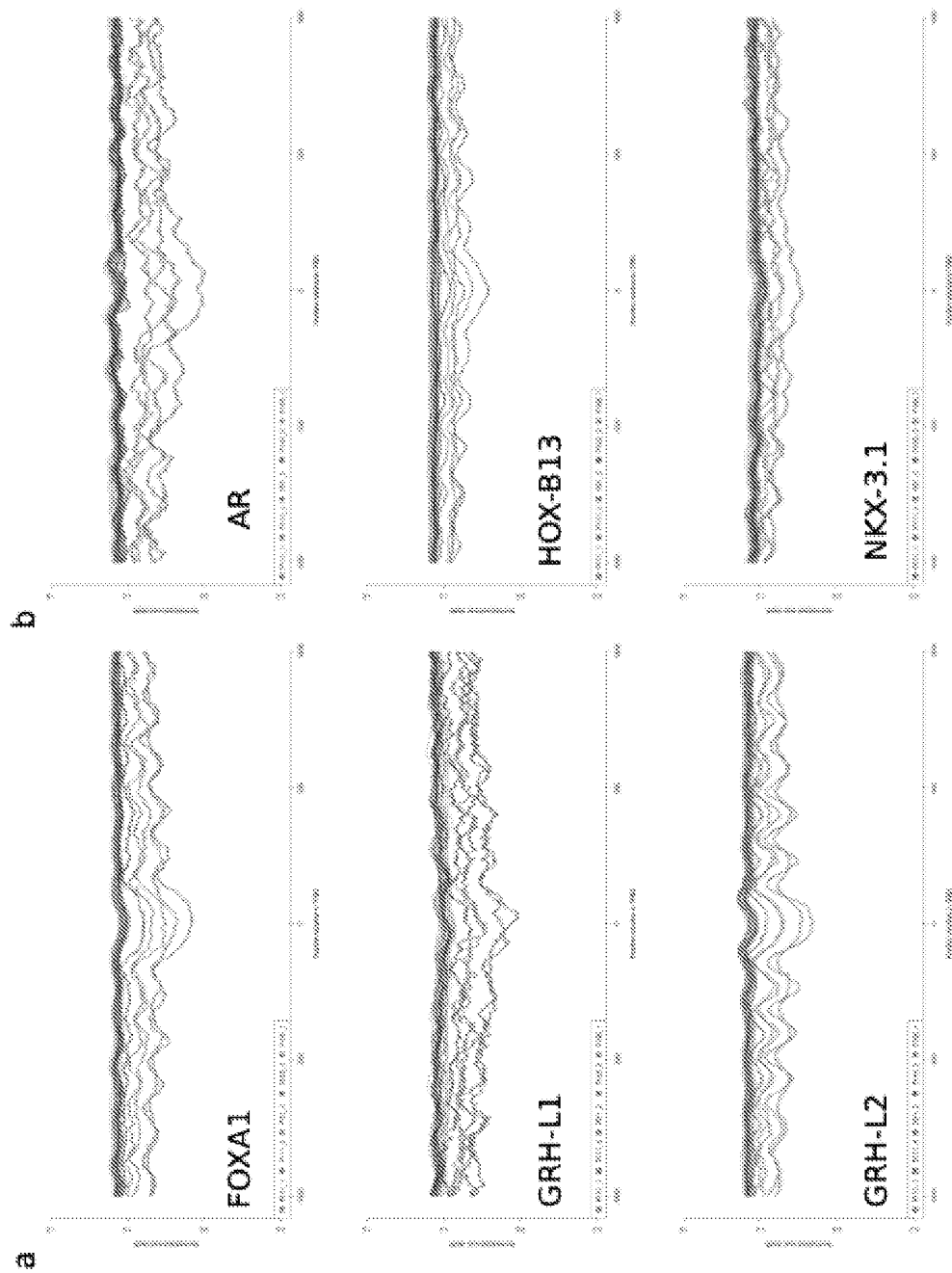


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FIG. 17

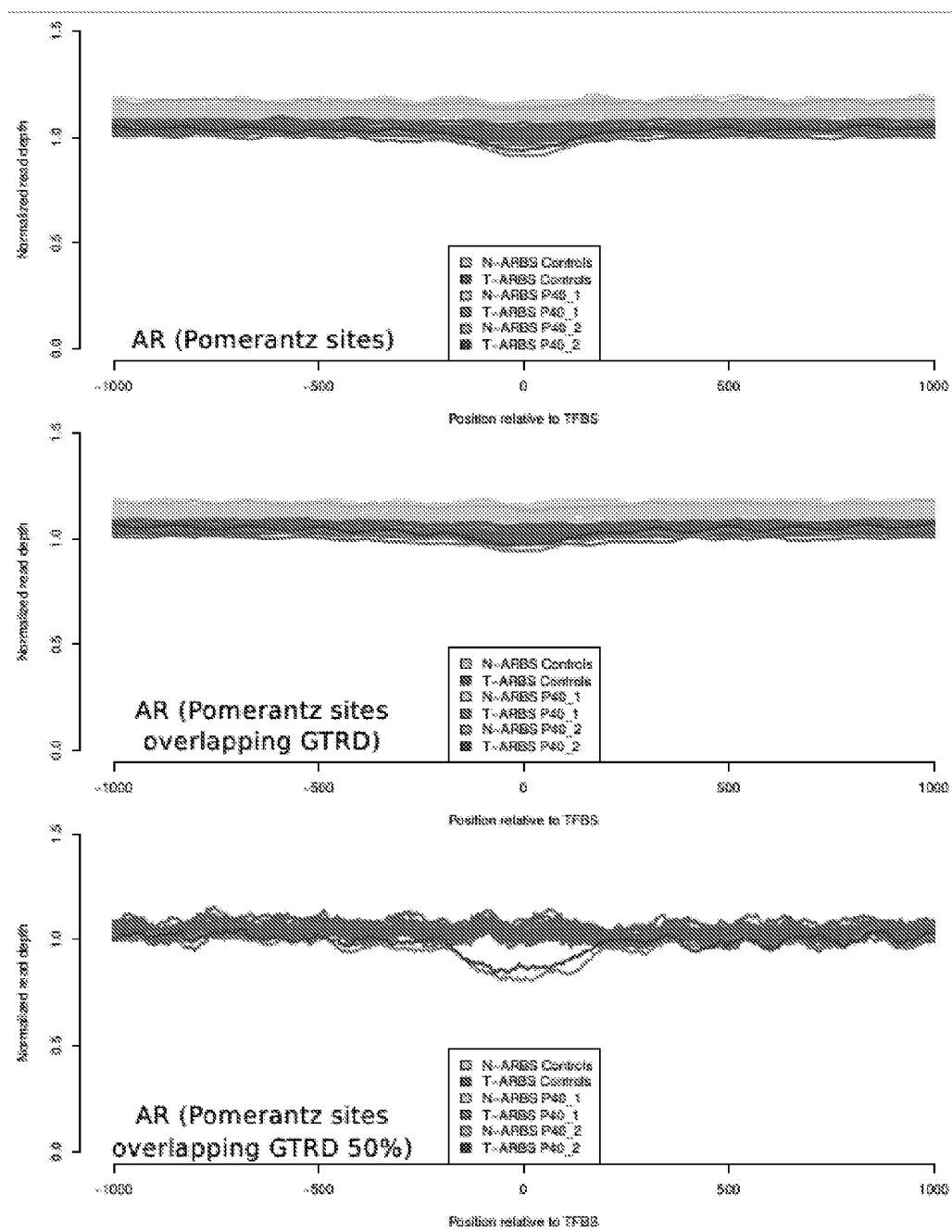


FIGs. 18A-18B



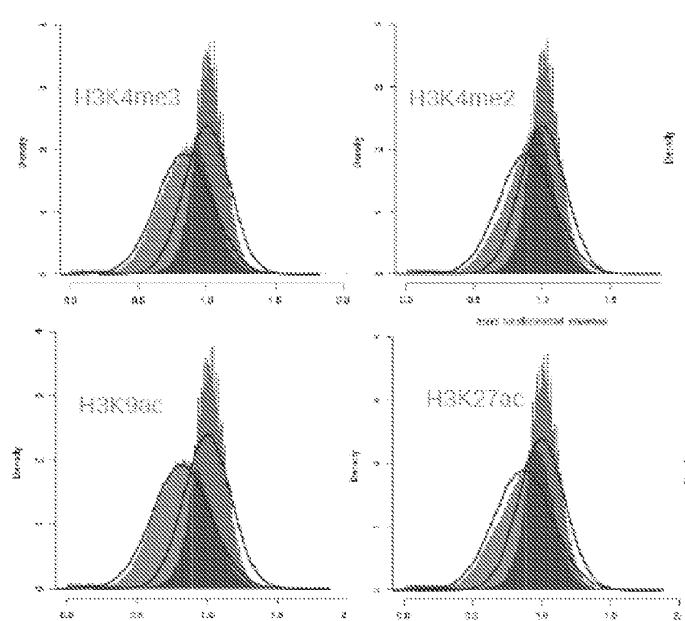
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FIG. 19

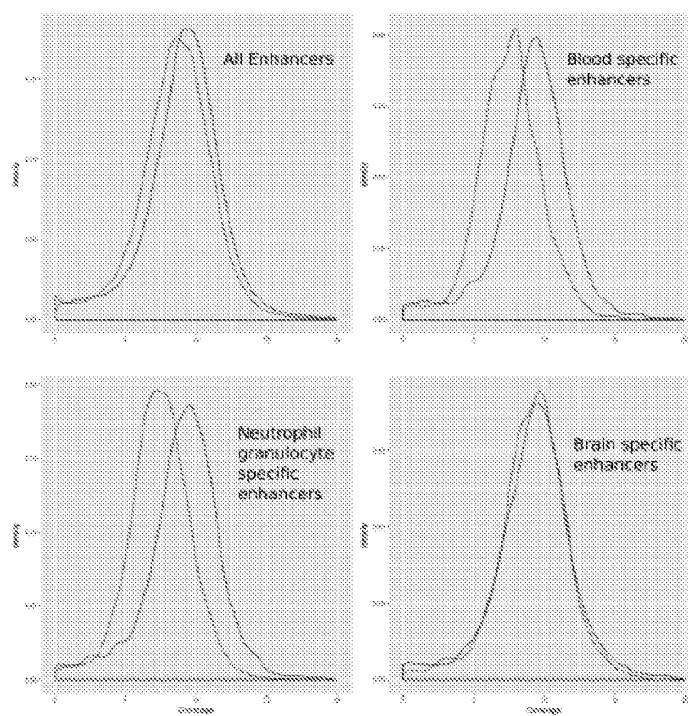


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FIG. 20



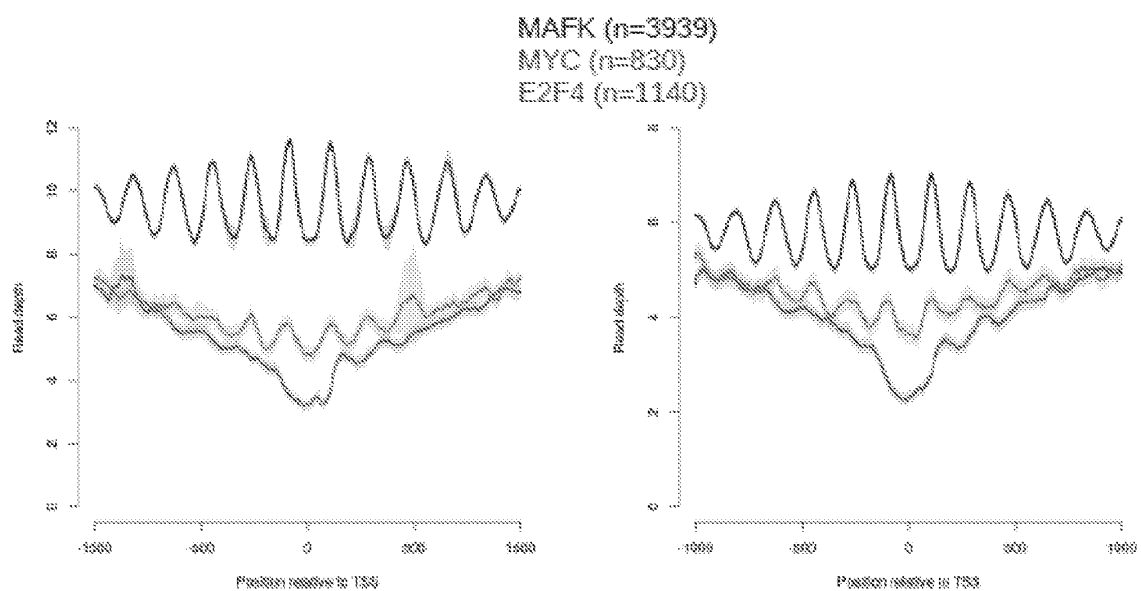
Histone modifications



Enhancers

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FIG. 21



Merged Males

NPH6

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FIG. 22

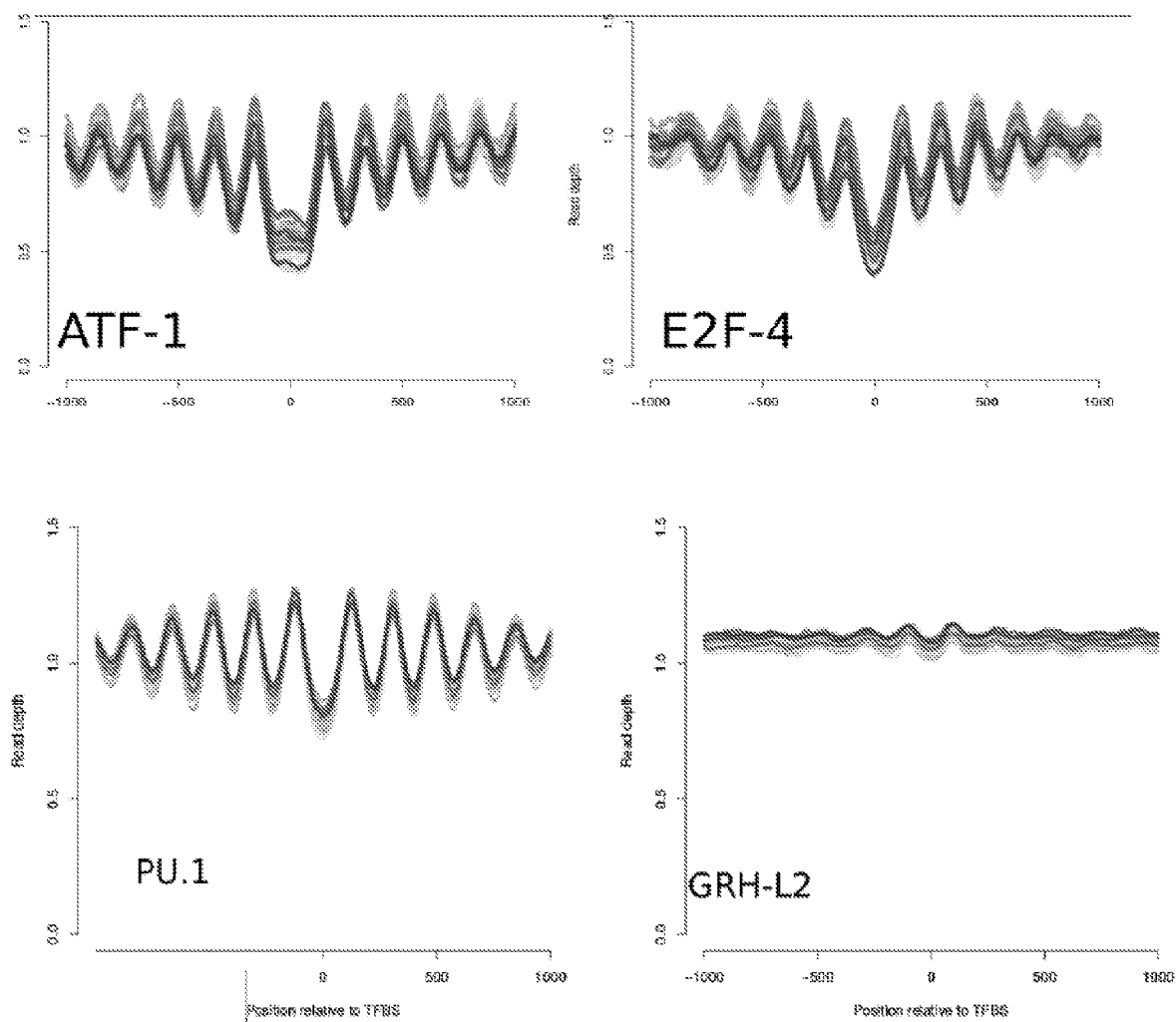
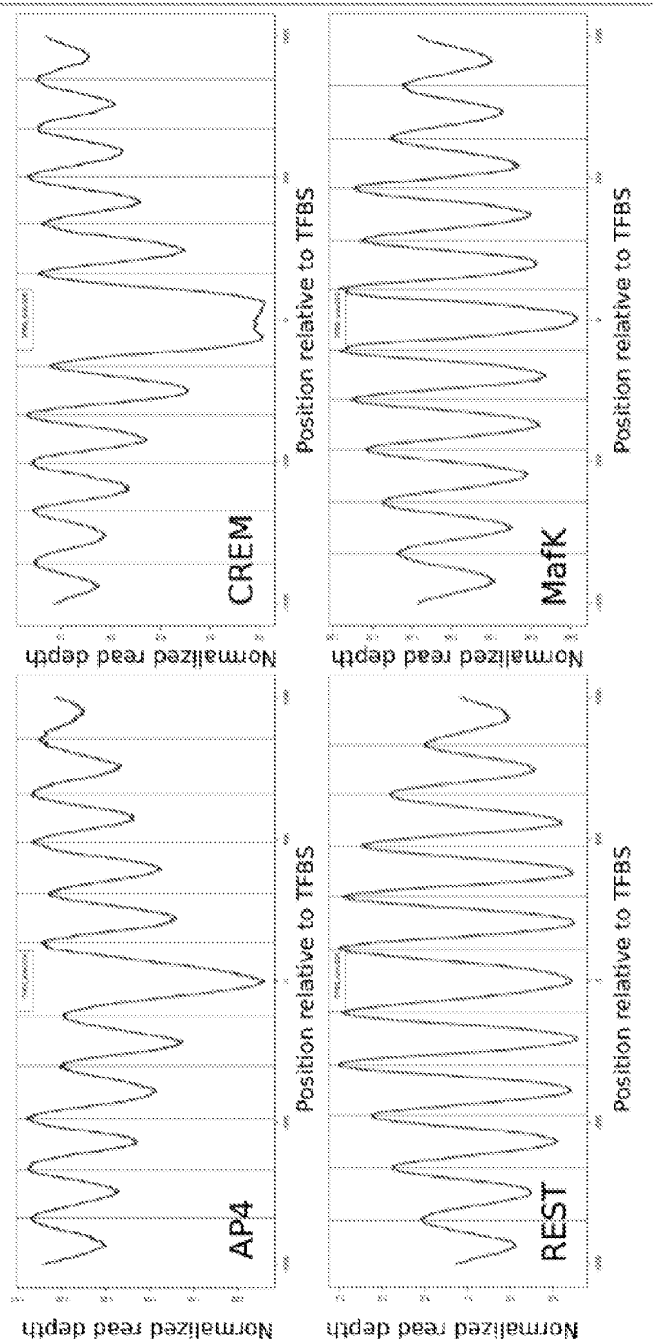


FIG. 23

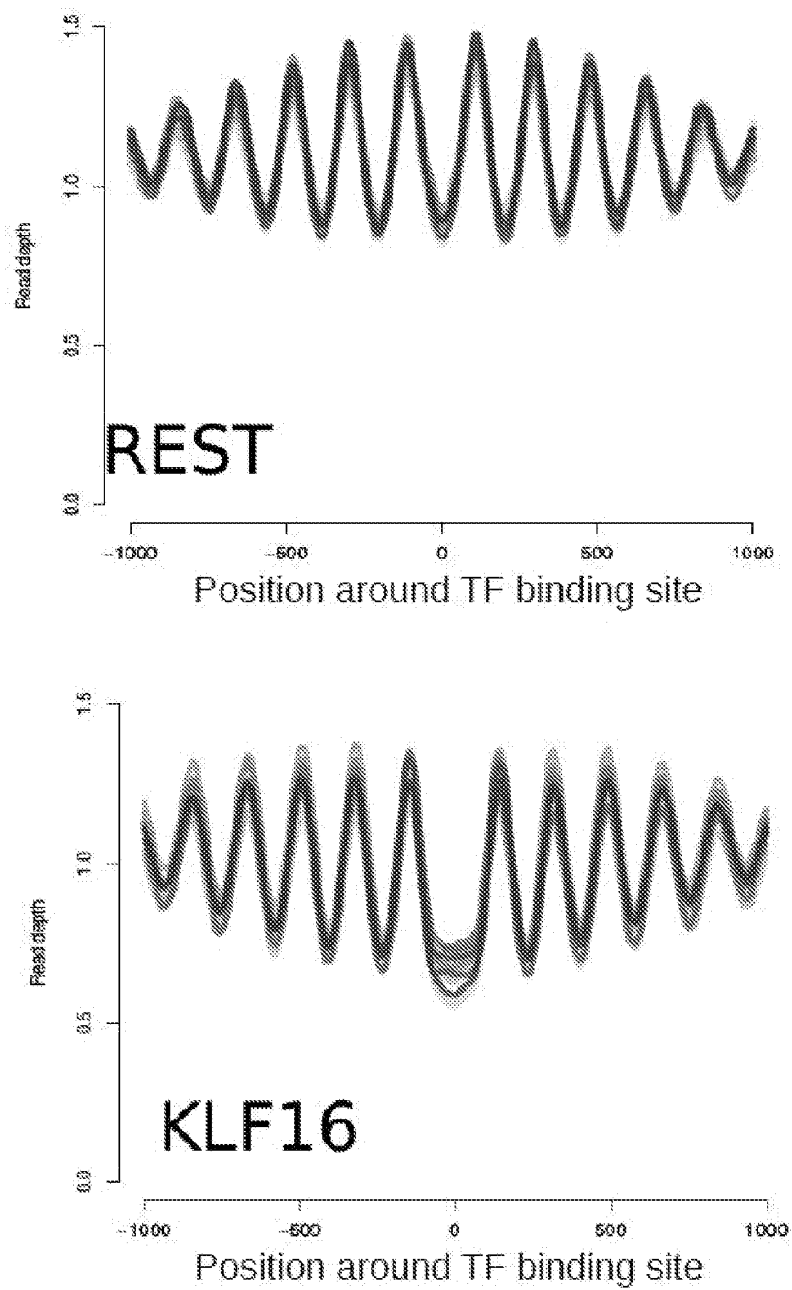
TF1	TF2	Overlap (Fraction of TF1)
USF-2	USF-1	0.98
ZNF143	RBAK	0.95
REST	MIER2	0.94
AP-2A	AP-2C	0.92
ZNF75A	GABPA	0.91
MafK	MafF	0.87
MLL2	MYST1	0.86
JunD	Fra-2	0.86
HHEX	FOXA3	0.86
ZNF238	ZBTB42	0.85
CTCF	ZBTB2	0.85
SIX5	RBAK	0.84
ZNF143	ZNF76	0.84
c-Myc	Max	0.83
RERE	FOXA3	0.82
FOXA2	FOXA3	0.81
c-Jun	JunB	0.81
HMG20B	FOXA3	0.80
N-Myc	Max	0.78
HHEX	RERE	0.78

FIG. 24



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FIG. 25



FIGs. 26A-26C

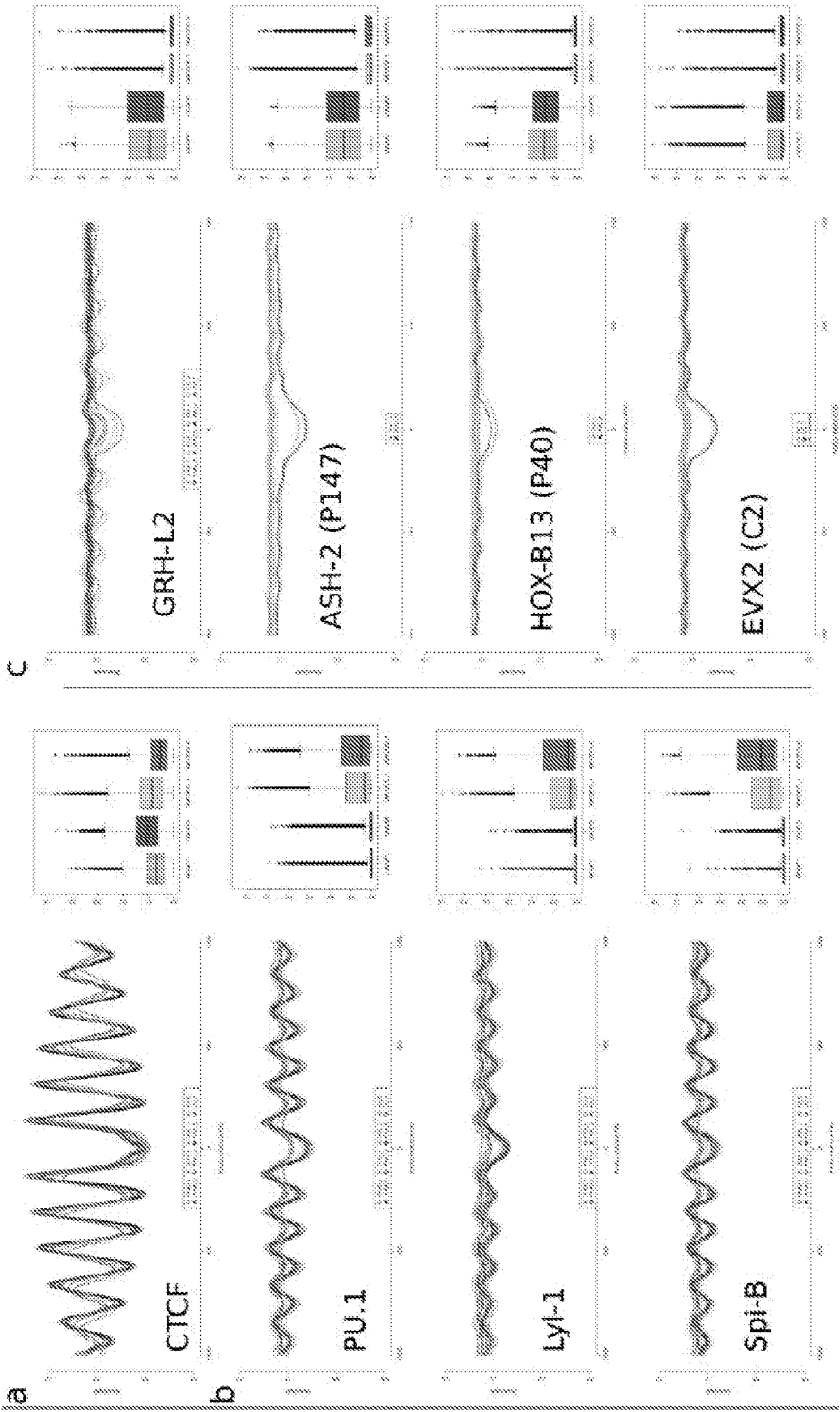


FIG. 27

1	Maf-1	MEF-2A	ESF-7	COUP-TF1	JDP-2	FOX2	ZNF55
2	N-Myc	JARID1C	SOX-11	NANOG3B	SOX1	Hox-B1	KLF12
3	ZSCAN1	ZNF7	ZNF3	NFATc4	C-EBPβ#46	ZNF267	Amf
4	ZNF146	ZNF53	Glucocorticoid	Hox-A1	STAT1	HEMT	Estrogen
5	ZNF146	HES-2	ZBTB6	NF-186#46	ZNF141	C-EBPβ#47	ZKDC
6	SOX-16	ZNF524	c-Myc	ZNF324	Hox-D13	STAT4	TBR-1#46
7	NR1-1	GUS1	PRDM4	FOXO1	MYST2	Myf5	GRH13
8	VR1	MLL2	IRX-3	IRX-2	SOX11	POU5F1	ALX4
9	WT1	ZNF644	Lyl-1	SNAIL	FOXJ2	CTCF1	ZFP42
10	PERE	NF-YA	THAP11	THAP1	ZFX3	Isl-1	ZNF778
11	PBX-2	FOXJ1	ZBTB4	MBD1	COX-2	GASZ1	666-8#46
12	GLI2	SMAD1	CREB-3L2	DEAF1	PNR	Hox-C8	DEC1
13	Lmo4	ASH-2	PRDM14	SMAD2	MYF	RLX-1	Sp6
14	HESX-1	PROX-1	HES-5	TBR-2	Amf5	HSP-1	SRF
15	ZSCAN22	ZNF274	UBP-1	IRF-3	ZBTB78	OTX-2	ZNF121
16	ZSCAN29	ZBTB11	VEF1	ETV1	HOMER	NRX-61	FOXJ2
17	Runt1	ZNF436	NF-YC	GRH12	ZNF531	Id3	STAT6
18	HNF1P	HBP-1	MAR3	c-Jun	TGF-1	ADNP	Progesterone
19	ZSCAN16	HEY1	SSRP1	CREB2	NF-E2L2	ZC3H8	PBX3
20	Erf2	KAT5	ZEB1	Jamb	ZEB1	ATF-7	ETV4
21	BX1	MIXL1	ZBTB28	ZBTB7A	ZNF667	HES-7	SMARCC2
22	ZNF586	IR4	NOP18	Hox-B6	ZNF638	NGR1	ZFP161
23	NCOA-3	c-Fos	MTA3	KLF3	Fra-1	Fra-1	FOXJ2
24	E3F-5	Hox-D11	MyoD	NF186#46	GZF1	ZNF442	Hox-A8
25	KLF10	ZNF324	FOXO3	MEF-2B	NemoD1	WUR1	NRX-31
26	ARID3B	MZF1	ERG	NF-E2L1	BACH2	ZNF181	ZNF262
27	ETV7	SNAP-24	c-Myc	ZNF264	GATA-3	ZNF768	ZNF152
28	PRDM4#46	SOX-13	HV-EP1	FOXJ1	Armadillo	STAT2	FOX-1
29	ZNF3	IRF-1	FOXO1	JARID1A	NF-E2	KLF1	ZSCAN5A
30	ZNF217	Sp140	RFK3	NRX-2.2	KLF15	CREB	TFAM
31	ZNF34	FEZF1	GRH11	Hox-D8	SOX-10	REST	SIX2
32	RFK2	MeK	FoxL	ZHX2	MEK3	HR23A1	ZNF770
33	Bach11	HSF2	FOXO1	ERF	CIC	ER-1	FAT2
34	ATF-2	ZNF236	Mx	ZNF394A	HIF-1#46	ASH-1	ZNF238
35	Hox-D1	KLF6	DUX4	ZNF214	ZBTB33	HEY-1	FU1
36	ETV6	POU2F2	RFP	EP-2	ZNF467	Fra-2	Mad1
37	KLF16	DLX-6	FltA-1	Dp-2	ZNF419	EVX-2	STAT3
38	Imr2	TBX5	RCOR1	PRDM6	ZNF163	BCL-2	HES-1
39	ZBED4	GATA-2	c-Maf	Hox-B4	Meis2	DLX-4	JARID2
40	CF2	Twist-1	DMAP1	AP-4	Erf-4	ZNF766	NRN-3
41	REFAN1	ZNF202A	GATA1	ZNF529	973	ELK-4	ZNF18
42	Amr-2	BCL11A	Tad1	RFK1	ZNF110	SOX-9	Myf
43	SOX-3	F1ZF1	C-EBPβ#46	HAND-1	OTX1	JARID1D	ZBTB26
44	ARID3A	TBR	CREM	ZNF341	Sox1	Hox-A2	Hox-A6
45	Maf	MYX1	YFEB	ZNF21	Hox-C3	HMG20A	Hox-C6
46	DLX-1	SPDEF	ZBTB44	Hox-B2	ISFAT1	Id2	ZNF253
47	D0113	C-EBPβ#48	ZNF331	ZNF52	USF-2	ZNF316A	NF-1A
48	TEF-1	GLI3	ECR1	C-EBPβ#49	ZNF176	RCR3#46	HHEX
49	Isl-2	BACH1	ZNF701	ZFP28	FOXP3	REK	HMGBOX1
50	ZNF108	UBF	ZNF549	IKZF1	AHR-1	HNF-4B#46	CTCF
51	Hox-A10	MEOX2	Hox-B6	WIL	FOXK2	RCOR2	SIX5

FIG. 27 – cont.

52	ZNF231.	ZNF382.	ZFP64.	ZNF22.	Pax-2.	Hox-A7.	ZHX1.
53	LRH-1.	ZNF682.	Lmx6.	SRF-3.	NRX-2.	GLI1.	ISF-2.
54	NRX-3.	TRX21.	MYNN.	ZNF574.	NRX-2.3.	GMER-1.	EZF-2.
55	SOX-17.	SMARCA1.	DBP.	HIV-EP3.	Hox-B1.	NR-3#54B.	WTF13.
56	USF-1.	Id1.	ZNF256.	HNF-4#947.	ZNF407.	Lmx3.	ZNF184.
57	TEF-3.	B-myb.	ZNF329.	FORN3.	Ets-3.	B-ATF.	ZBTB42.
58	BARX-1.	Hox-B13.	WHSC1.	HLF.	HIF-3#945.	ARR.	TCF13.
59	FOXN1.	Idm3.	FOXG1.	ZNF511.	GLI2.	NAMOX.	TSC2094.
60	DEC2.	MLL.	NFAT5.	ZBTB17.	SMAD2.	T.	FOXO4.
61	EVX-1.	Myogenin.	ER-1.	TBP-11.	OVOL2.	Hox-D4.	NKX-2.3.
62	RAR-#945.	SMARCA5.	Six2.	ZNF132.	Id4.	TOX-4.	SFR2.
63	GATA-4.	TRX3.	SOX-5.	EPAS-1.	ZNF724.	ATF-3.	ZNF432.
64	ZNF268.	Six3.	EMX-1.	Id32.	TEF-3.	Amil2.	FOXQ1.
65	GOR2.	SOX-2.	Osp-1.	Amk.	MSX-1.	FoxB.	EZF-1.
66	ZNF8.	Sp-8.	GLI4.	SMARCD1.	STAT5B.	PPAR#946.	ARID1B.
67	ER-3.	TAF-1.	ARID1A.	NCOA-1.	ZNF597.	Gr113.	PBX-1.
68	HoxB2.	ZNF585.	BCL11B.	EAR2.	EBF1.	AEBP2.	DMRT1.
69	B-ATF-3.	ZNF339.	ZF-X.	SRF-3.	SMI-2.	ZIC2.	ZNF37A.
70	AP-2#945.	SMAD4.	ZNF358.	ZNF774.	TEF3.	IRF-4.	NF-A1c3.
71	ATF-#945.	SREBF2.	Max2.	ZFP92.	CLOCK.	FOXO2.	NF-3.3.
72	EBF-3.	OSR2.	ZNF48.	GLI33.	ZNF136.	ZNF2003.	ZNF76.
73	ZNF582.	ZNF41.	Fox-3.	SMAD3.	FOXF1.	ARID2.	Hox-A4.
74	ZFP1.	RXR#945.	Myf-6.	Id3.	ZNF792.	NFATc3.	CREB-3L3.
75	TGIF-2.	HGF-4.	HM320B.	ZNF134.	GF-3A.	TEF-4.	Lmx5.
76	TCF-7.	ZSCAN2.	ERR-1.	FOXP2.	NF-E1.3.	ZNF711.	Lmx13#946.
77	HNF-18#946.	RF-X.	ATH-1.	ATF-5.	MER2.	ZNF490.	NSN-2.
78	Fox-5.	HES-4.	ZNF323.	PTX-3.	PPAR#947.	ARID4B.	
79	ATRX.	Cur-1.	PRDM1.	IdF1.	RBP-18#954.	NCOA2.	
80	FOXK3.	ZNF528.	Dopa.	GABP#946.	ZNF554.	TCF-712.	
81	NF-1C.	NKX-2.1.	ZNF329.	ZNF317.	ReB.	IdF3.	
82	IKZF5.	ERF.	FOXF2.	ZNF683.	MEF-2C.	IdF4.	
83	Hox-C13.	SMARCE1.	MEF-2D.	Mad4.	EGR3.	PLAG1.	
84	DMRT2.	ZNF586.	c-Ets-2.	EVF-1.	ZNF618.	ZSCAN5D.	
85	COX-1.	ZNF740.	HIF-4.	Hox-D11.	SMAD3.	DMRT3B.	
86	ZNF784.	IRF-3.	MSX-2.	FOXO3.	ZBTB18.	ZNF140.	
87	STAT1.	ETV6.	AP-3#947.	FOXF1.	GATA-1.	CREB-3L4.	
88	NF-YB.	JARID1B.	NF-1B.	HAND-2.	GMER-2.	Rum2.	
89	EZF-3.	MadB.	ZNF33.	Rum3.	LXR#946.	ZNF454.	
90	FOXP1.	Id3.	ATF-1.	NONO.	SOX-4.	PHOX-2B.	
91	3FAT.	ZNF34.	BARX-2.	Id3#946.	c-Ets-1.	ZBTB12.	
92	ZNF323A.	Minera/contozod.	ZNF324A.	IdF11.	Hox-A11.	Myx.	
93	ESR.	Fox-3.	ZBTB2.	Ides1.	PKR.	IdF4.	
94	ZNF682.	ZNF35.	ZNF513.	Rev-#946#945.	TCF-711.	STAT5A.	
95	EZF-5.	Hox-A5.	Sp4.	APX7.	NeuroD2.	ZNF75A.	
96	LEF-1.	MYST1.	SEF2.	ZNF582.	FEV.	YY1.	
97	THAP4.	ZBTB34.	BCL6.	ZNF583.	Fox-7.		
98	CCO2.	LXR#946.	Hox-A13.	ZNF33A.	IdF5.	ZNF582.	
99	GLX-2.	RAX-2.	ATF-4.	ZNF547.	COUP-1F11.	HIC2.	
100	ZBTB33.	RAR-#947.	Hox-D12.	SREBF-1.	NKX-2.5.	XBP-1.	

FIG. 28A

Large binding site (>300bp)

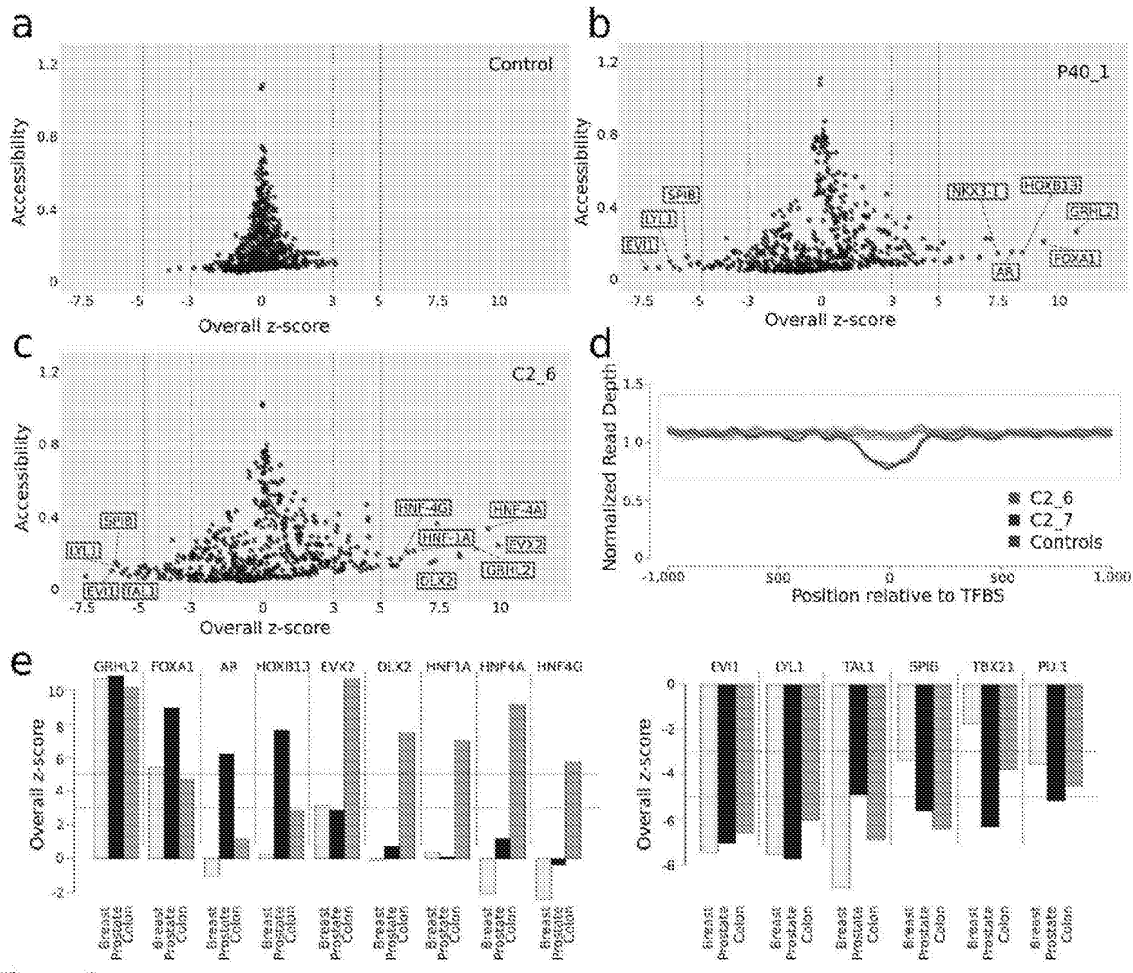
[1] ATF-1.50perc_hg19.tss ATF-3.50perc_hg19.tss BARX-2.50perc_hg19.tss
[4] c-ets-1.50perc_hg19.tss CREB.50perc_hg19.tss CREM.50perc_hg19.tss
[7] DEAF1.50perc_hg19.tss DEAF1.hg19.tss E2F-1.50perc_hg19.tss
[10] Elf-1.50perc_hg19.tss Elk-1.hg19.tss ERG.50perc_hg19.tss
[13] ETV6.50perc_hg19.tss Fli-1.50perc_hg19.tss FOXP3.50perc_hg19.tss
[16] GATAD1.50perc_hg19.tss GLI2.hg19.tss GMEB-2.50perc_hg19.tss
[19] GMEB-2.hg19.tss IRF-3.hg19.tss KLF10.hg19.tss
[22] KLF11.50perc_hg19.tss KLF11.hg19.tss MAZ.50perc_hg19.tss
[25] MLL2.50perc_hg19.tss NF-YA.50perc_hg19.tss NF-YB.50perc_hg19.tss
[28] NF-YB.hg19.tss NF-YC.50perc_hg19.tss NF-YC.hg19.tss
[31] PBX-3.50perc_hg19.tss PHOX-2B.50perc_hg19.tss PHOX-2B.hg19.tss
[34] Runx1.50perc_hg19.tss SIX5.50perc_hg19.tss SMAD1.50perc_hg19.tss
[37] SOX-9.hg19.tss Sp1.50perc_hg19.tss Sp2.50perc_hg19.tss
[40] Sp4.50perc_hg19.tss Sp5.50perc_hg19.tss SREBP-1.hg19.tss
[43] SRF.50perc_hg19.tss STAT3.50perc_hg19.tss TR4.50perc_hg19.tss
[46] UBP-1.50perc_hg19.tss USF-2.50perc_hg19.tss ZBTB33.50perc_hg19.tss
[49] ZGPAT.50perc_hg19.tss ZHX2.50perc_hg19.tss ZNF75A.50perc_hg19.tss
[52] ZNF75A.hg19.tss ZNF76.50perc_hg19.tss ZNF76.hg19.tss
[55] ZSCAN16.50perc_hg19.tss

FIG. 28B

Binding site close to di-nucleosomal size
(Size between 312 and 352bp)

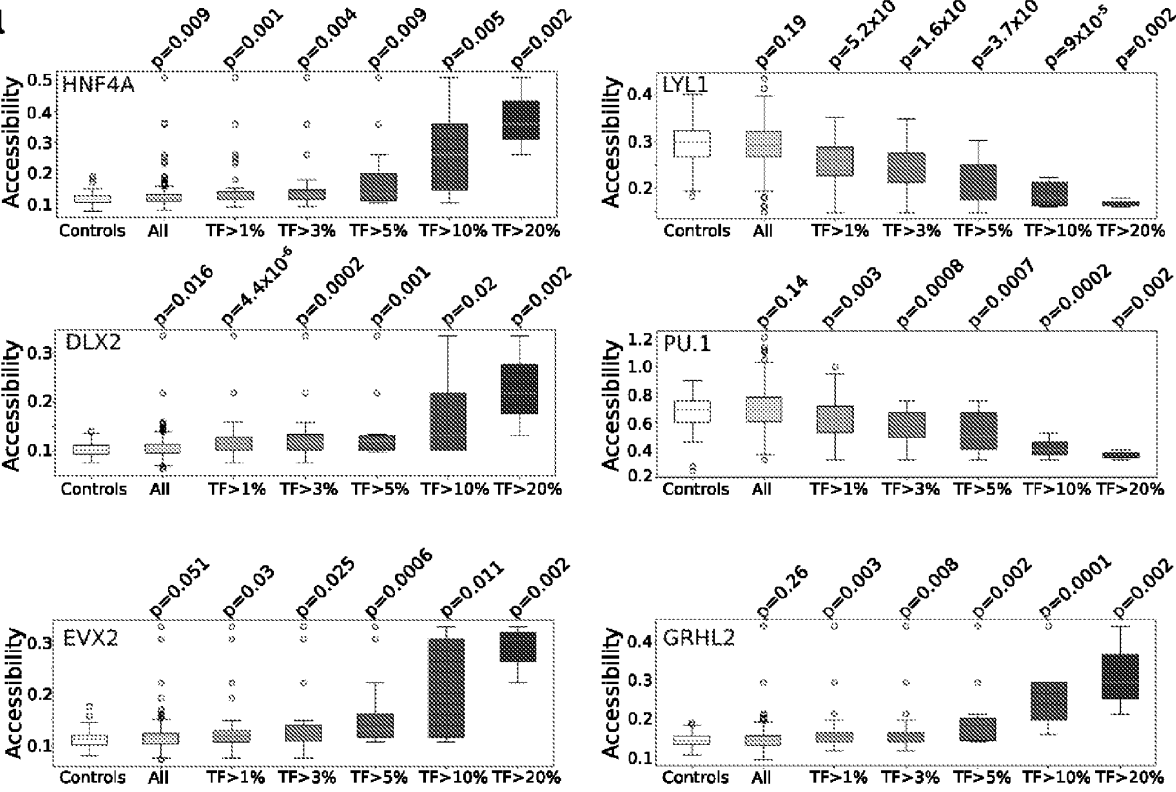
[1] ATF-1.50perc_hg19.tss ATF-3.50perc_hg19.tss c-Ets-1.50perc_hg19.tss
[4] CREB.50perc_hg19.tss CREM.50perc_hg19.tss DEAF1.50perc_hg19.tss
[7] DEAF1.hg19.tss E2F-1.50perc_hg19.tss Elf-1.50perc_hg19.tss
[10] Elk-1.hg19.tss ERG.50perc_hg19.tss Fli-1.50perc_hg19.tss
[13] FOXP3.50perc_hg19.tss GMEB-2.50perc_hg19.tss GMEB-2.hg19.tss
[16] MAZ.50perc_hg19.tss NF-YC.hg19.tss SMAD1.50perc_hg19.tss
[19] SOX-9.hg19.tss SRF.50perc_hg19.tss STAT3.50perc_hg19.tss
[22] UBP-1.50perc_hg19.tss ZBTB33.50perc_hg19.tss ZGPAT.50perc_hg19.tss
[25] ZNF75A.50perc_hg19.tss ZNF75A.hg19.tss

FIGs. 29A-29E



FIGs. 30A-30B

a



b

