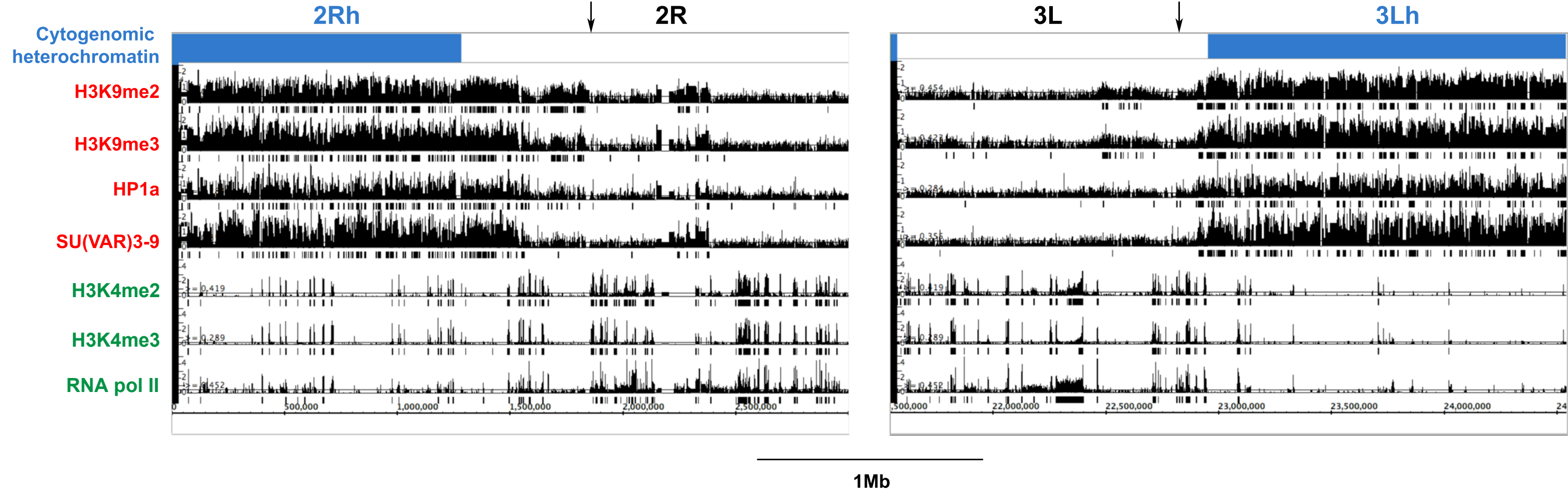
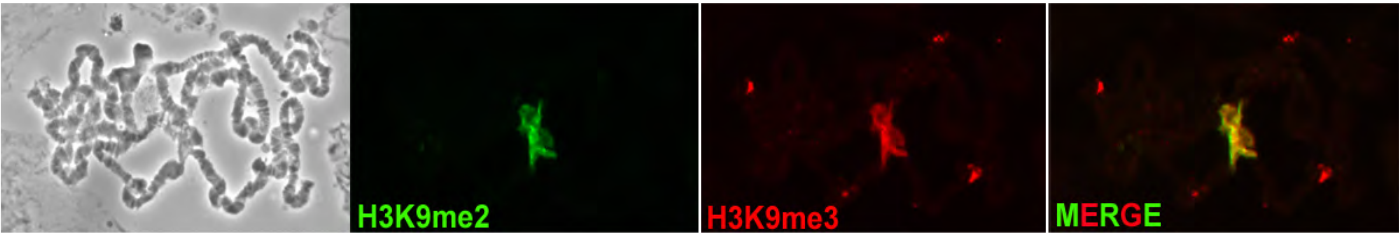


Supplemental Figure 1

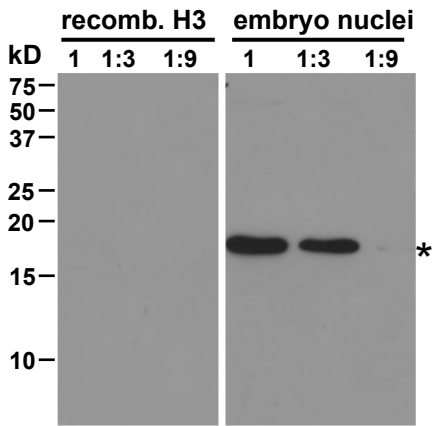


Supplemental Figure 2

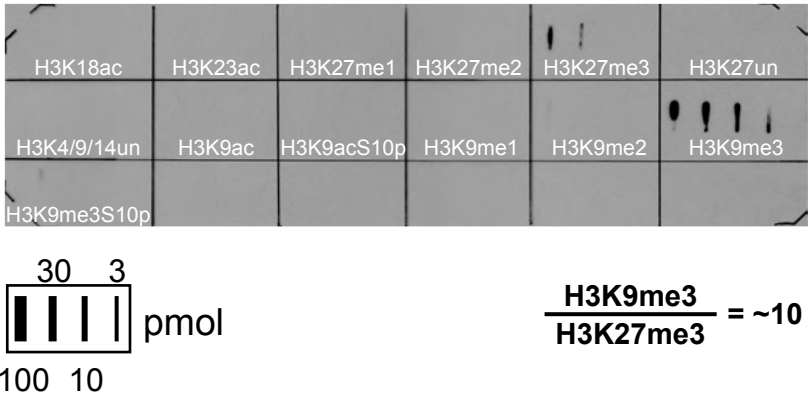
a



b



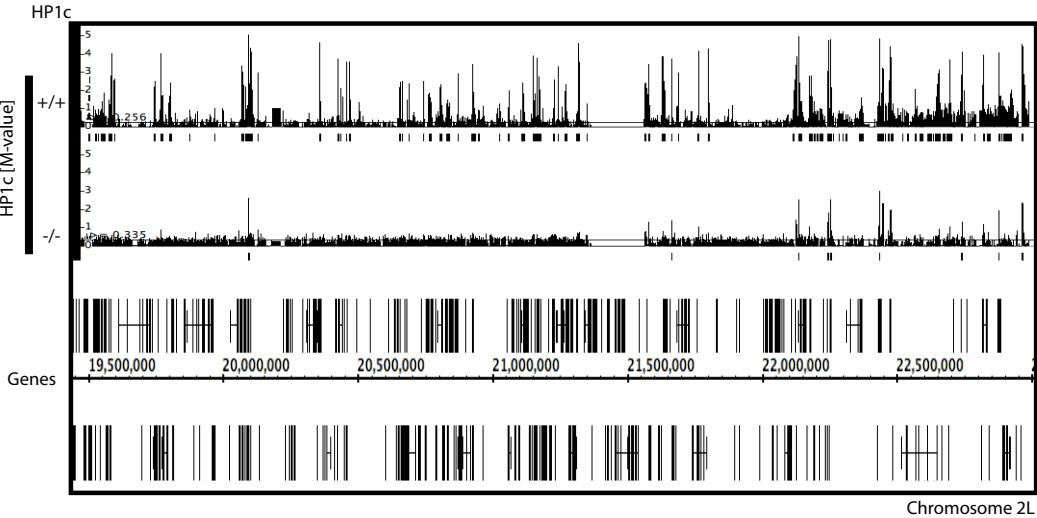
c



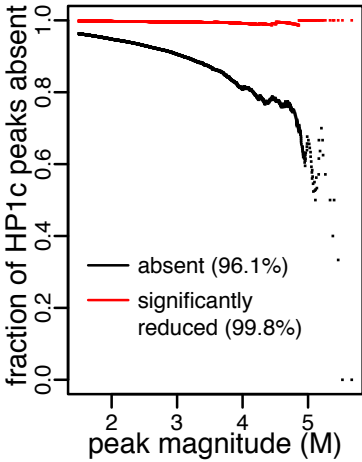
d

	Raw Values		Normalized Ratio (Human / Drosophila)
	<i>D. melanogaster</i>	<i>H. sapiens</i>	
control peptide	1.19E+08	2.28E+08	1.00
H3K9me0	3.37E+07	2.99E+07	0.46
H3K9me1	1.35E+07	3.31E+07	1.27
H3K9me2	2.93E+06	7.37E+06	1.30
H3K9me3	9.97E+05	3.74E+06	1.95

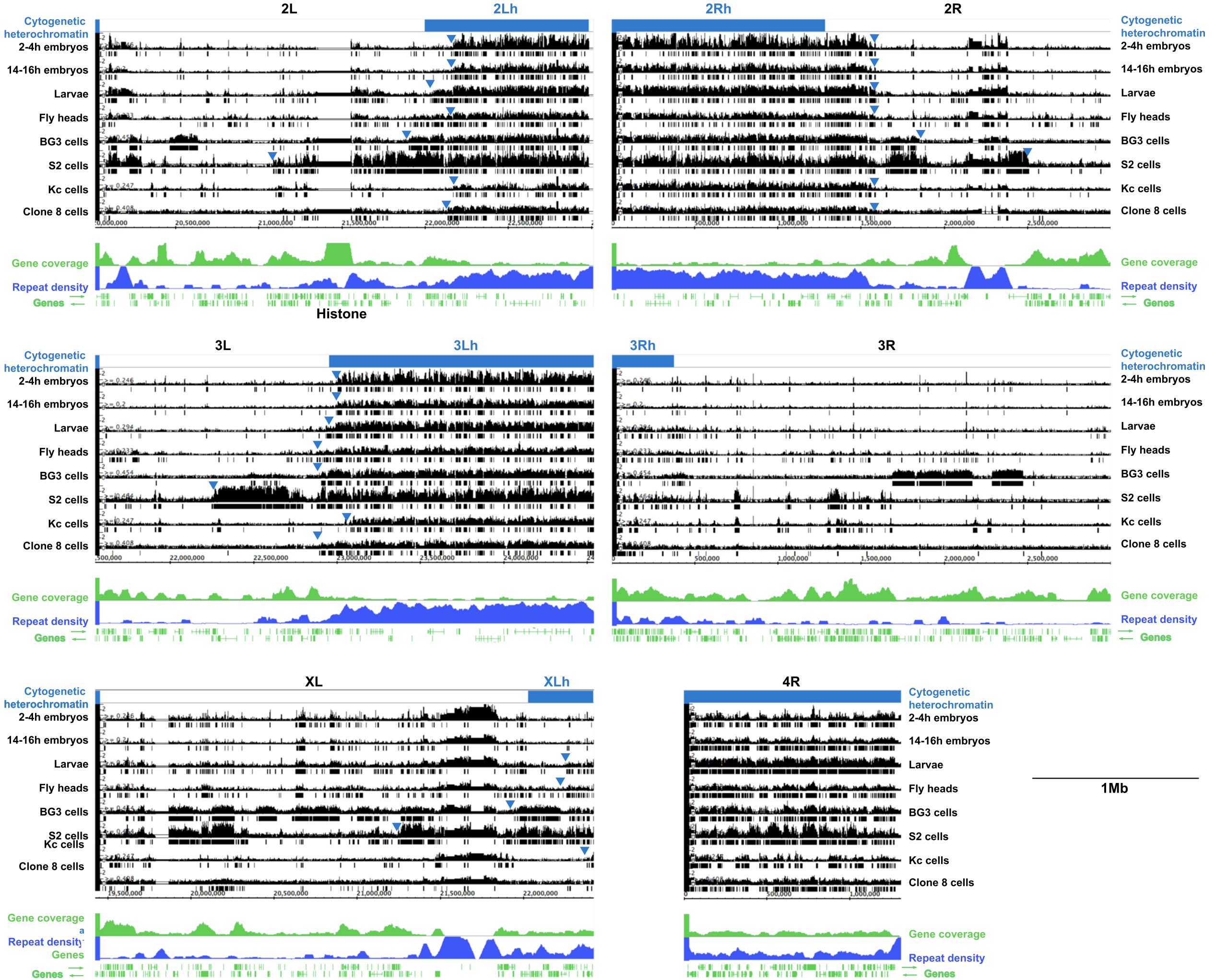
e



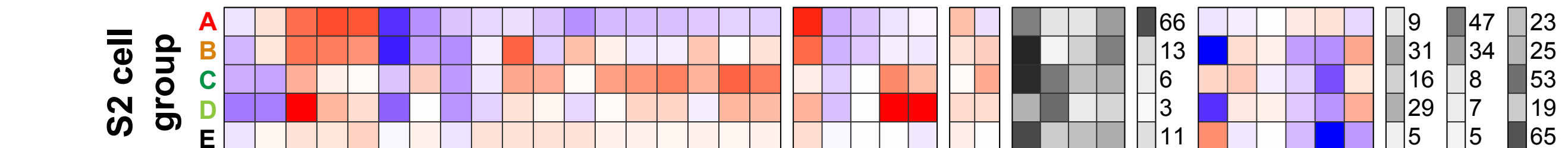
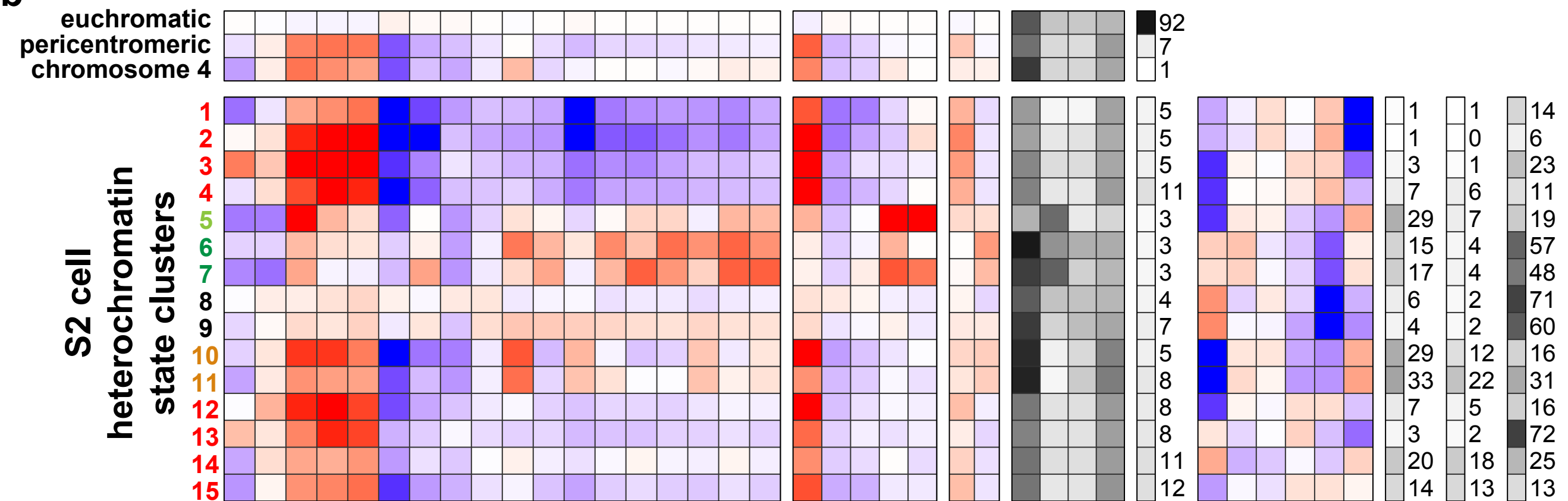
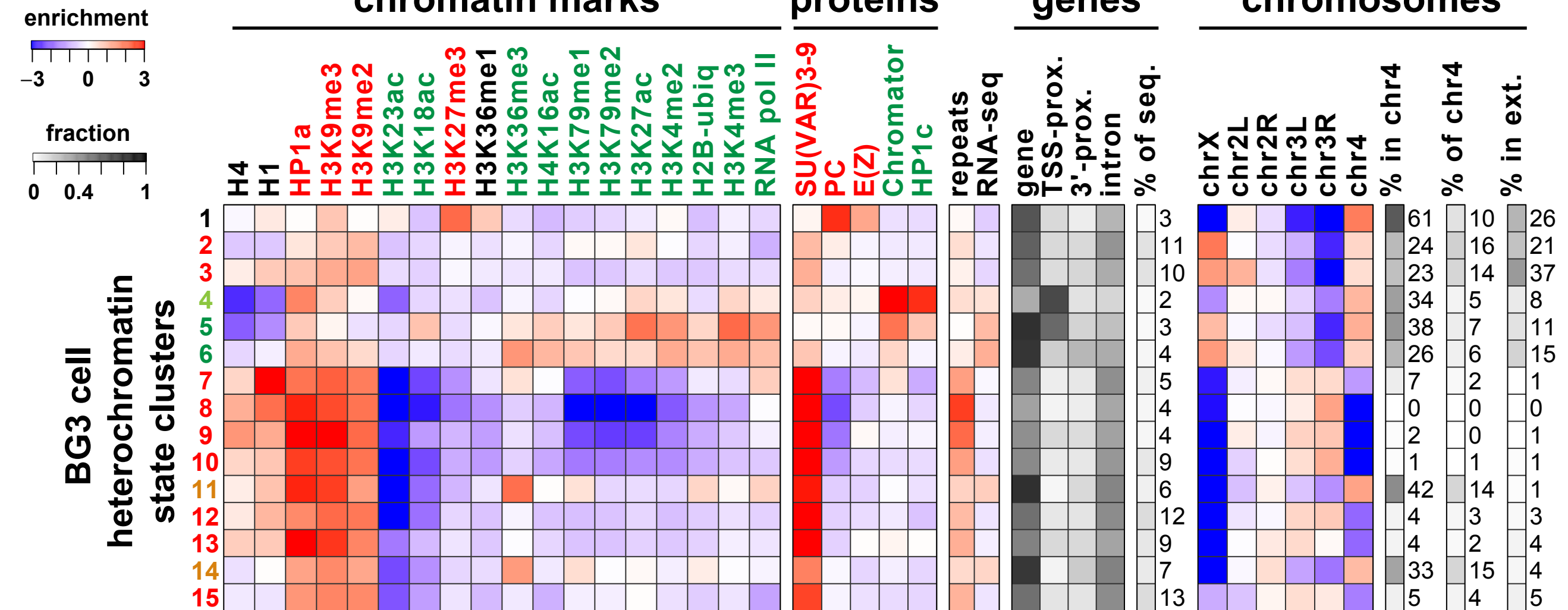
f



Supplemental Figure 3

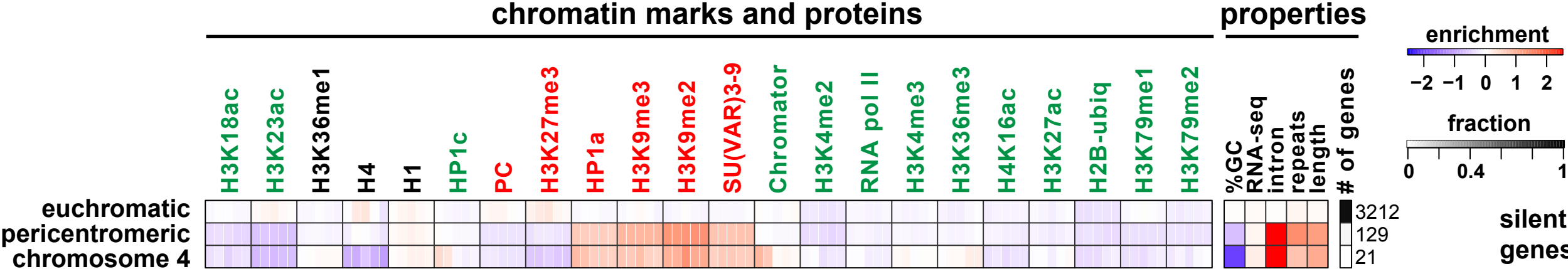


Supplemental Figure 4

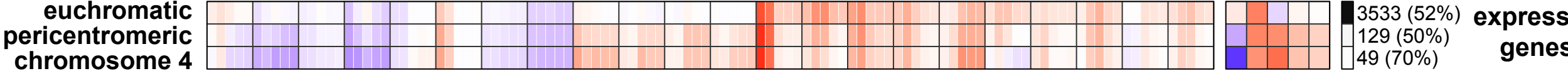


Supplemental Figure 5

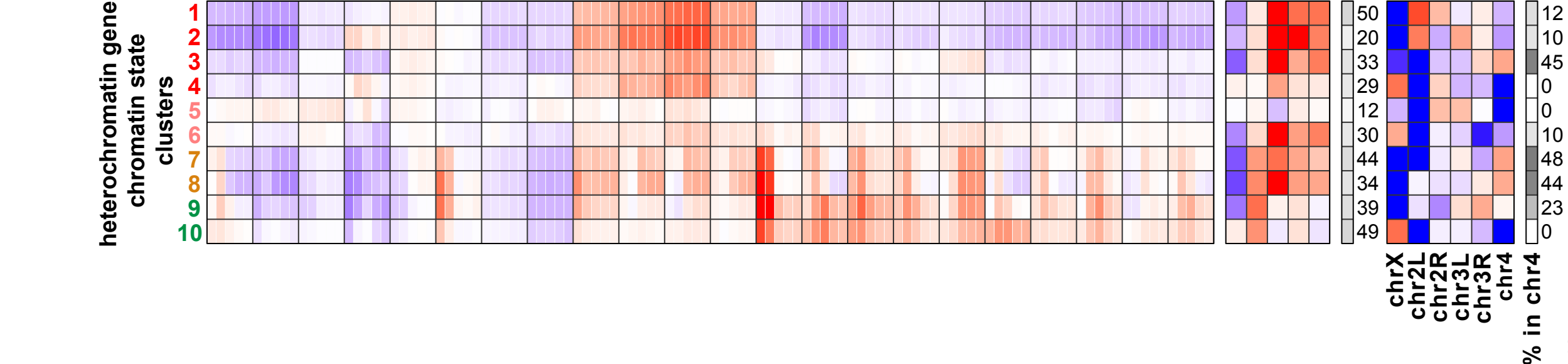
a



b

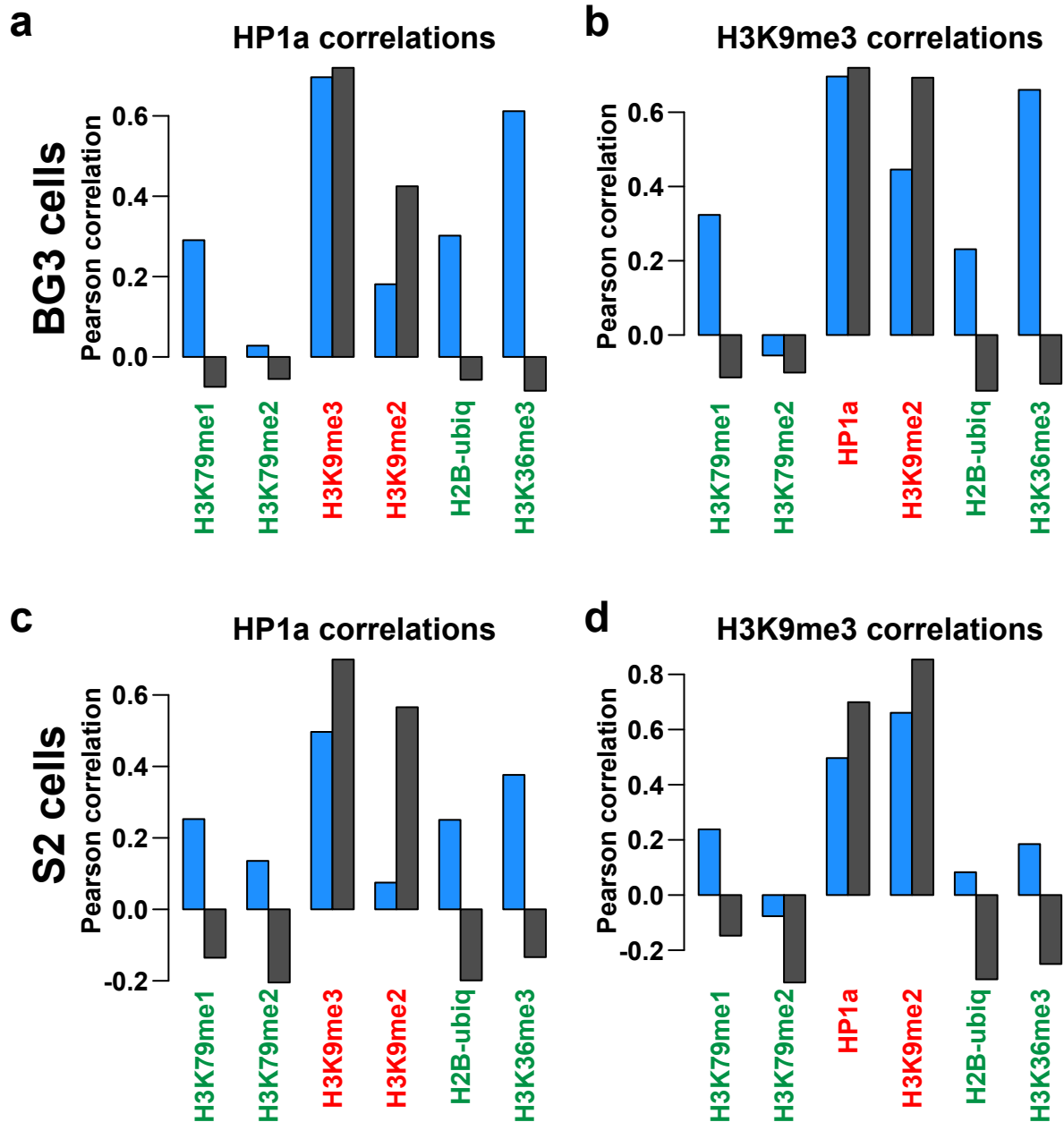


c



Supplemental Figure 6

■ chromosome 4 ■ pericentromeric

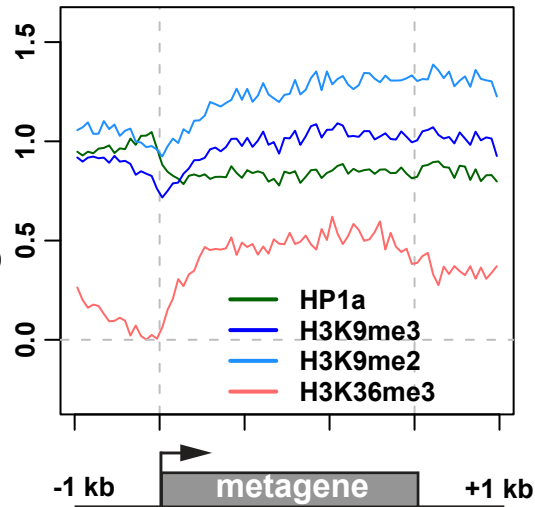


Supplemental Figure 7

a

all heterochromatic

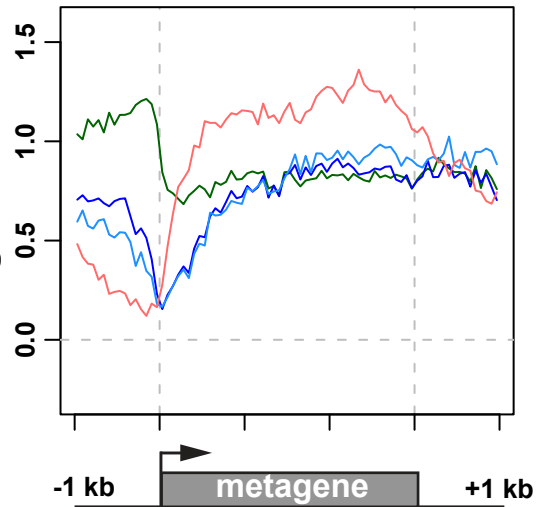
average enrichment



b

het. expressed

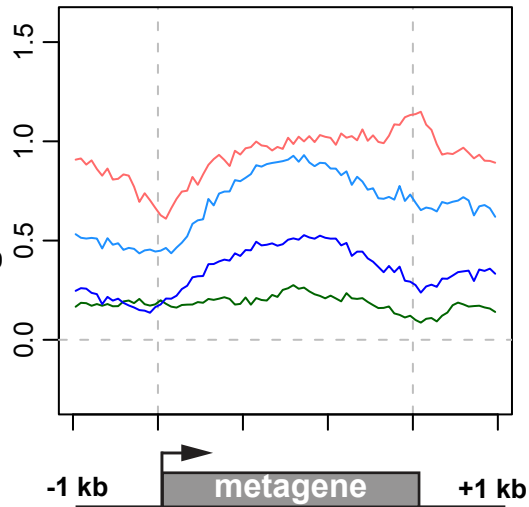
average enrichment



c

S2+Kc-unique

average enrichment



Supplemental Figure 8

a

cytogenomic
extensions

S2-BG3 fold difference

S2 enrichment

BG3 enrichment

b

extension
chromatin state
clusters

1
2
3
4
5
6
7
8
9
10

H4
H1
HP1a
H3K9me3
H3K9me2
H3K23ac
H3K18ac
H3K27me3
H3K36me1
H3K36me3
H4K16ac
H3K79me1
H3K79me2
H3K27ac
H3K4me2
H2B-ubiq
H3K4me3
RNA pol II

H4
H1
HP1a
H3K9me3
H3K9me2
H3K23ac
H3K18ac
H3K27me3
H3K36me1
H3K36me3
H4K16ac
H3K79me1
H3K79me2
H3K27ac
H3K4me2
H2B-ubiq
H3K4me3
RNA pol II

H4
H1
HP1a
H3K9me3
H3K9me2
H3K23ac
H3K18ac
H3K27me3
H3K36me1
H3K36me3
H4K16ac
H3K79me1
H3K79me2
H3K27ac
H3K4me2
H2B-ubiq
H3K4me3
RNA pol II

S2 RNA-seq
BG3 RNA-seq

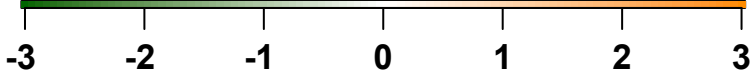
genes

gene
TSS-prox.
3'-prox.
intron

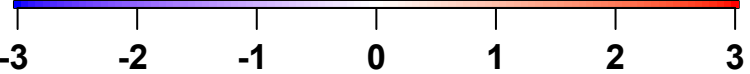
chromosomes

5
4
5
5
13
15
6
11
19
19
chrX
chr2L
chr2R
chr3L

S2 lower S2 higher



fold difference



fold enrichment

Supplemental Figure 9

a

S2-BG3 fold difference

S2 enrichment

BG3 enrichment

cytogenomic
extensions

silent

b

cytogenomic
extensions

expressed

c

extension gene
chromatin state
clusters

1
2
3
4
5
6
7
8
9
10

H3K9me3
H3K9me2
HP1a
SU(VAR)3-9
H2B-ubiq
H3K36me3
RNA pol II
H3K4me2
H3K18ac
H4K16ac
HP1c
H3K27ac
H3K79me2
H3K4me3
H3K79me1
Chromator
H3K23ac
PC
H3K27me3
H4
H1
H3K36me1

H3K9me3
H3K9me2
HP1a
SU(VAR)3-9
H2B-ubiq
H3K36me3
RNA pol II
H3K4me2
H3K18ac
H4K16ac
HP1c
H3K27ac
H3K79me2
H3K4me3
H3K79me1
Chromator
H3K23ac
PC
H3K27me3
H4
H1
H3K36me1

H3K9me3
H3K9me2
HP1a
SU(VAR)3-9
H2B-ubiq
H3K36me3
RNA pol II
H3K4me2
H3K18ac
H4K16ac
HP1c
H3K27ac
H3K79me2
H3K4me3
H3K79me1
Chromator
H3K23ac
PC
H3K27me3
H4
H1
H3K36me1

S2 RNA-seq
BG3 RNA-seq
of genes
chromosomes
chrX
chr2L
chr2R
chr3L

S2 lower

S2 higher

-2

-1

0

1

2

fold difference

-2

-1

0

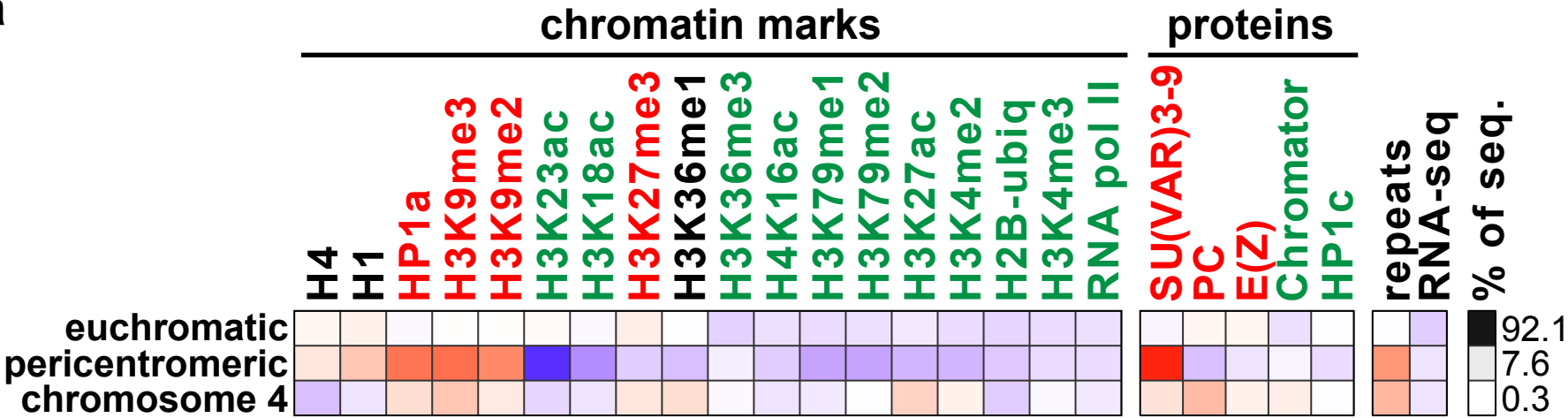
1

2

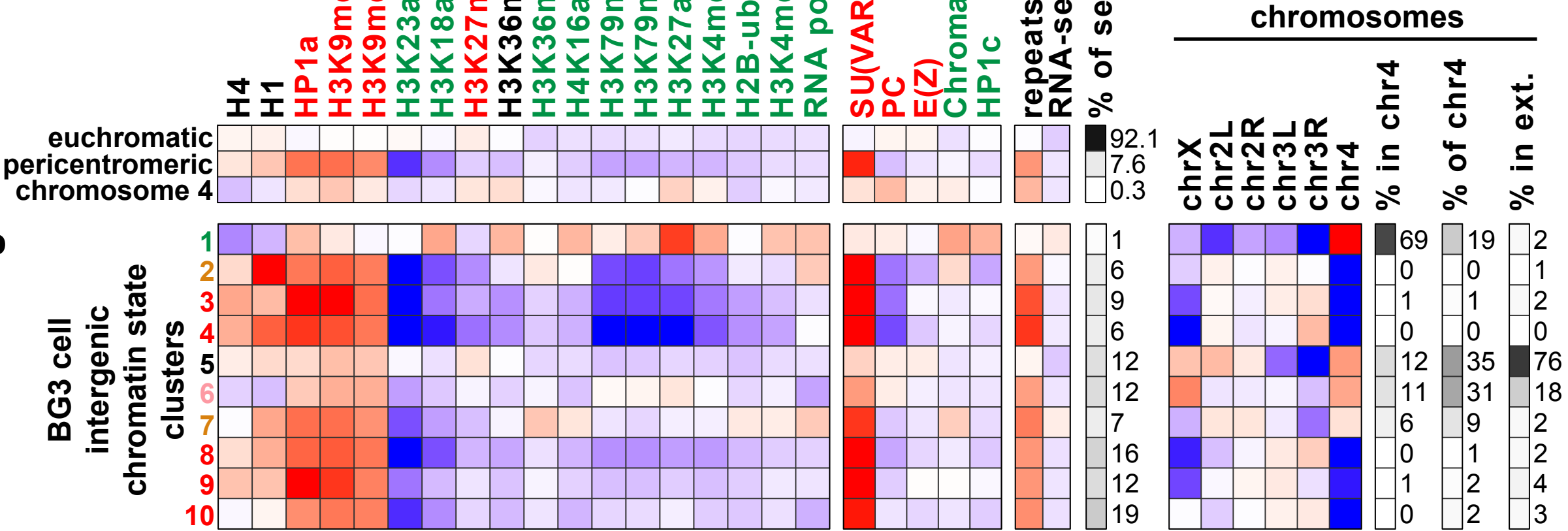
fold enrichment

Supplemental Figure 10

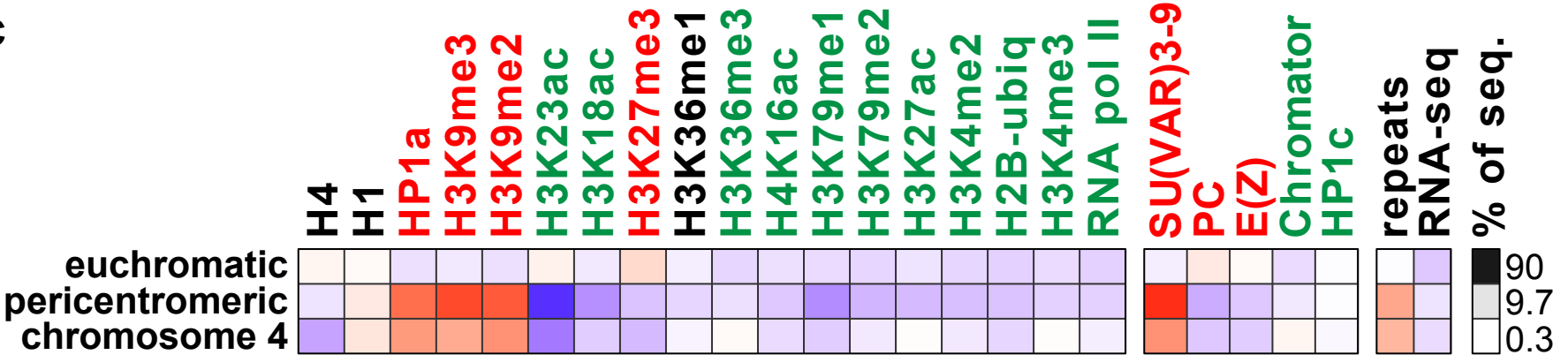
a



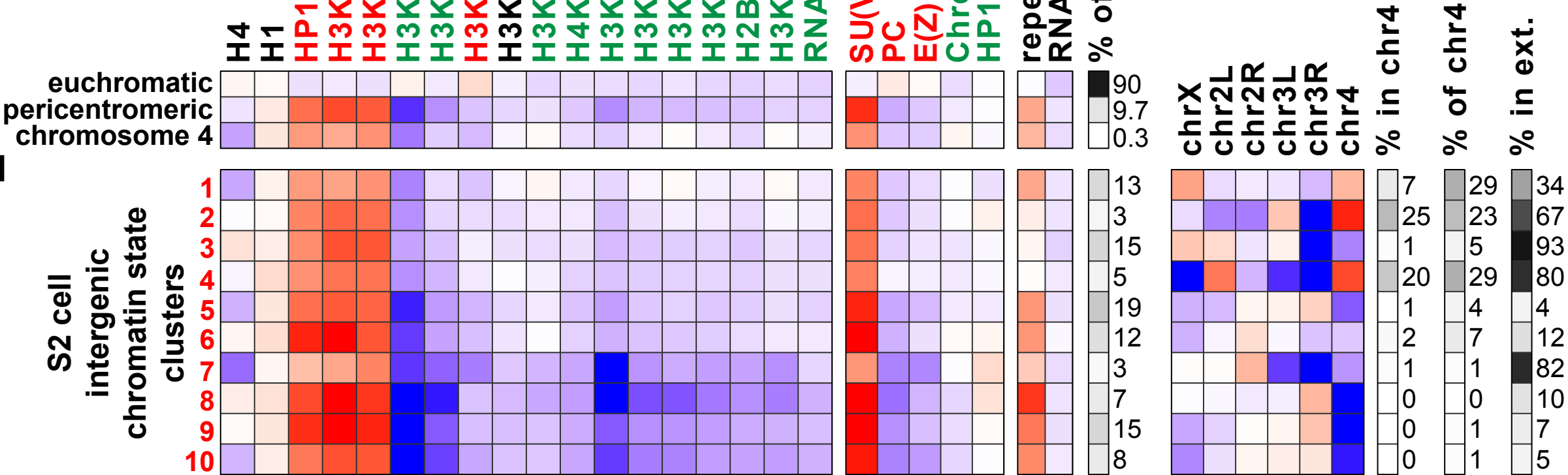
b



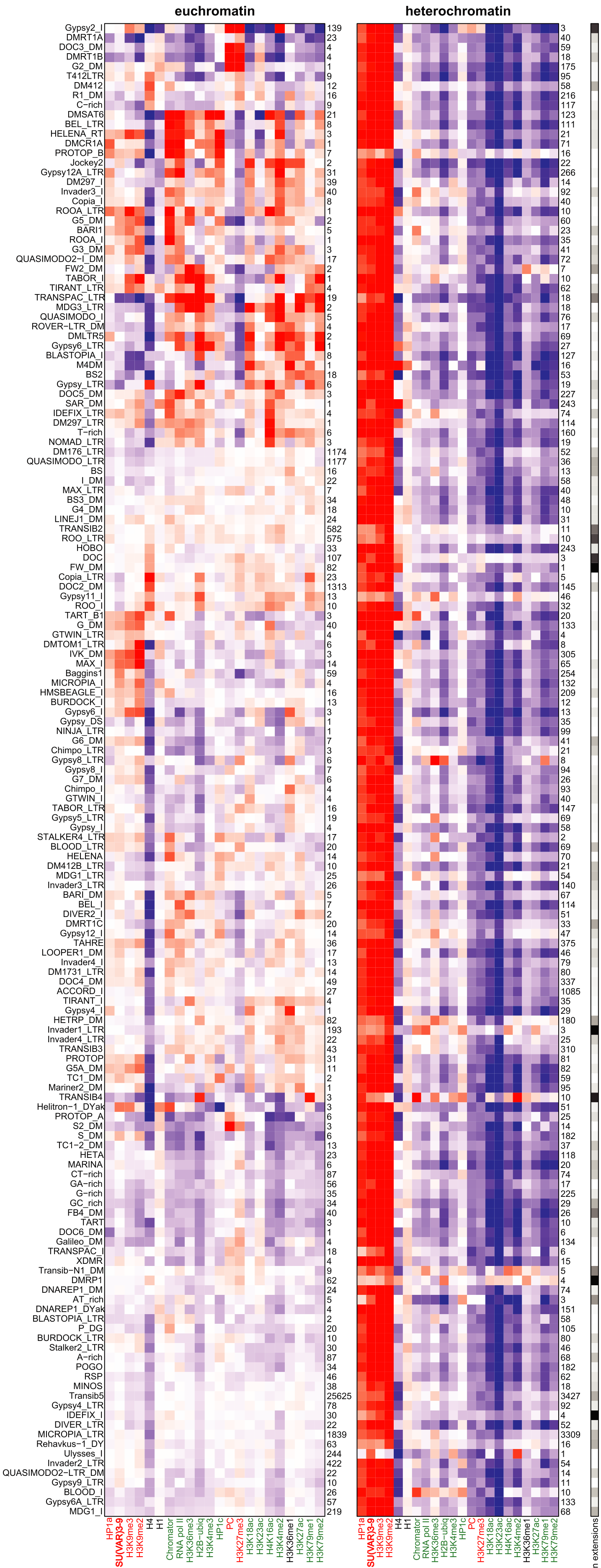
c



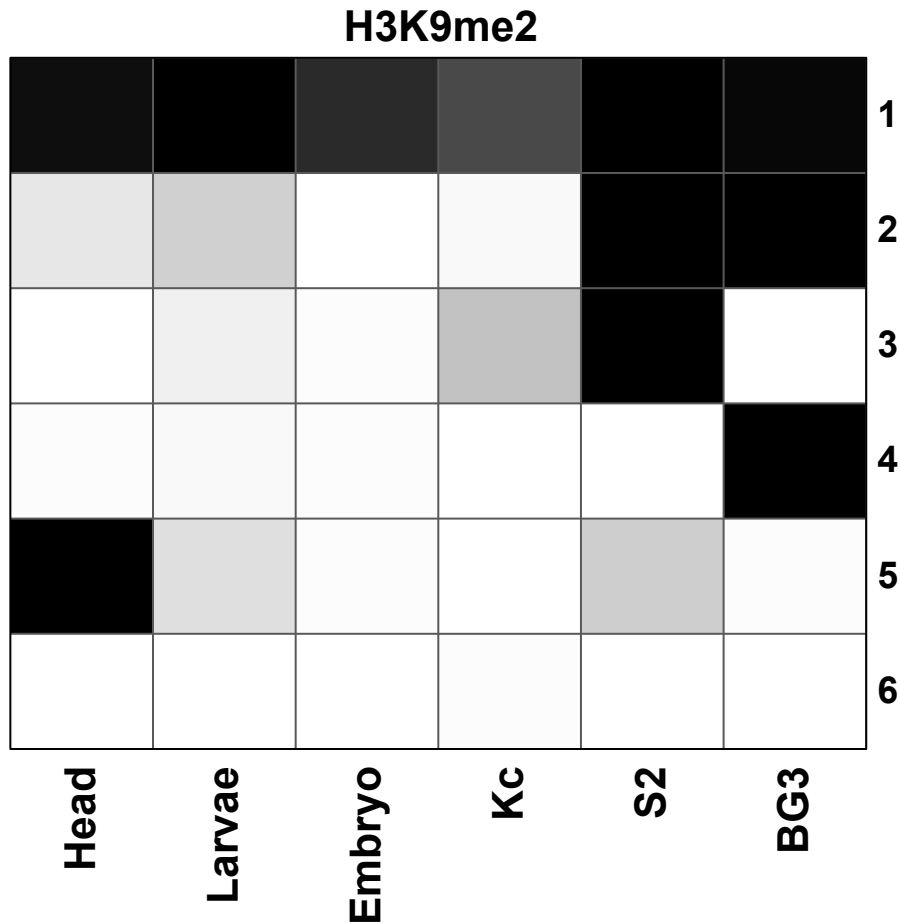
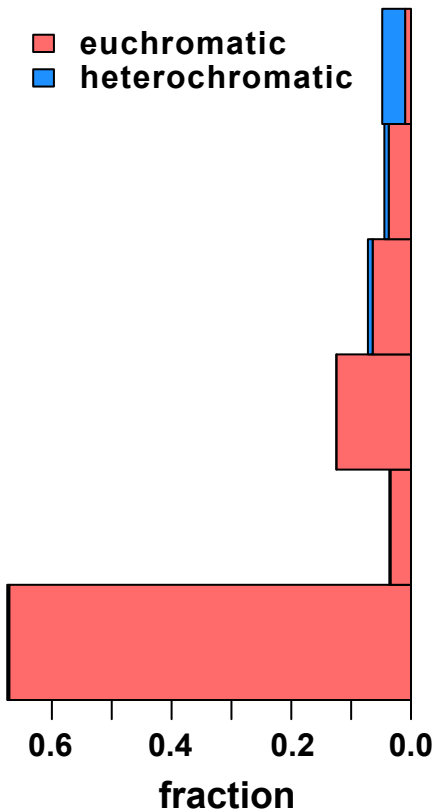
d



Supplemental Figure 12



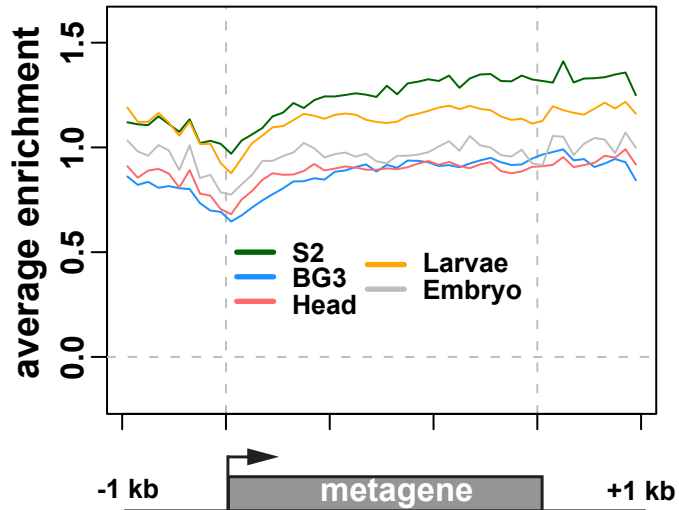
Supplemental Figure 13



Supplemental Figure 14

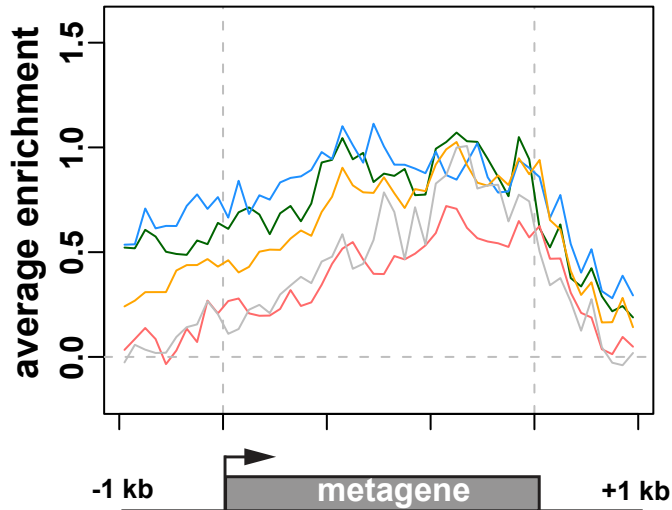
a

heterochromatic

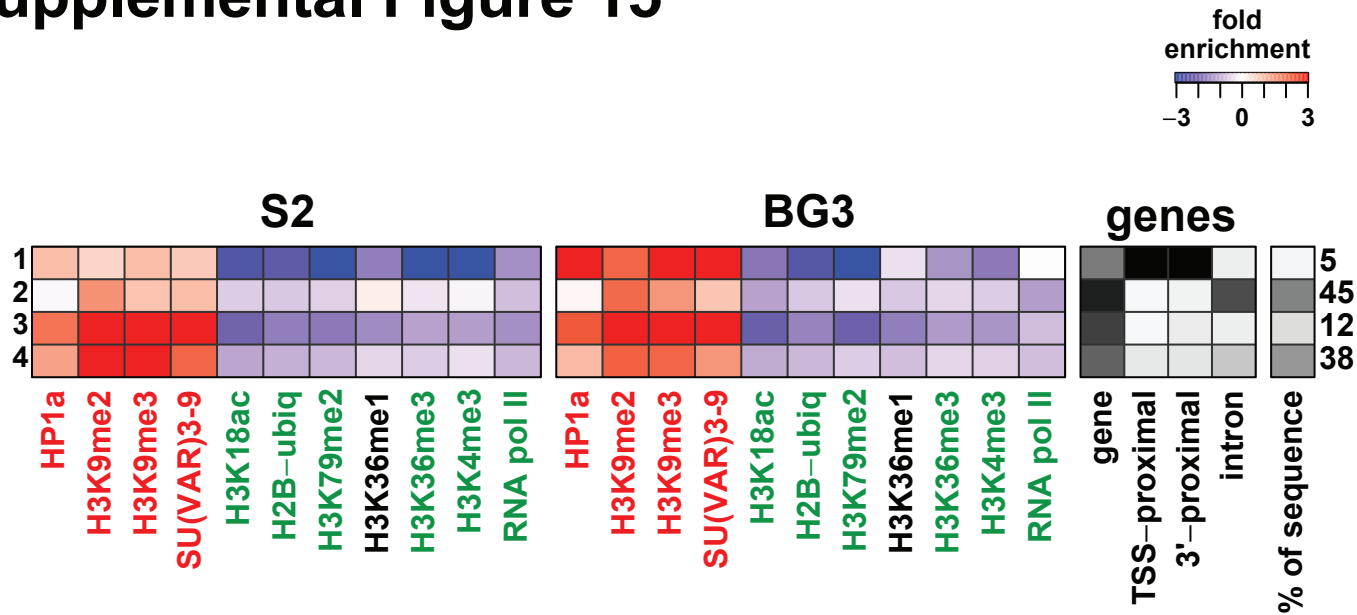


b

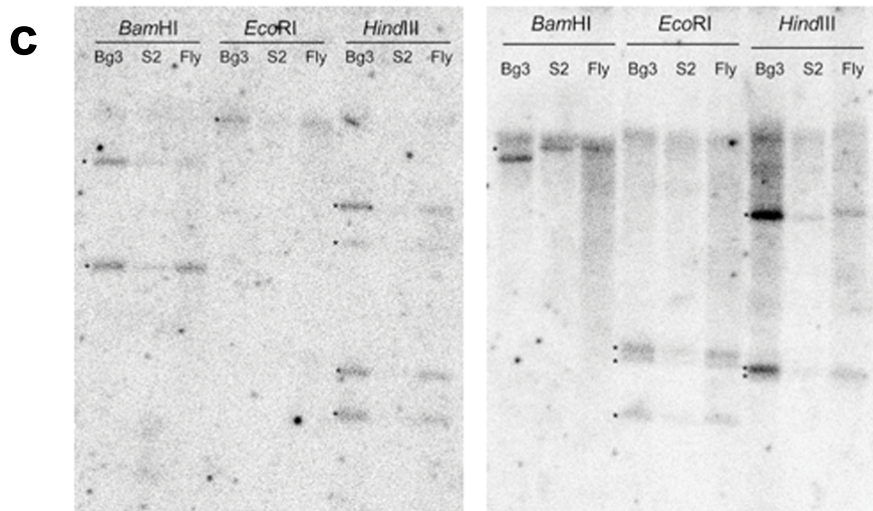
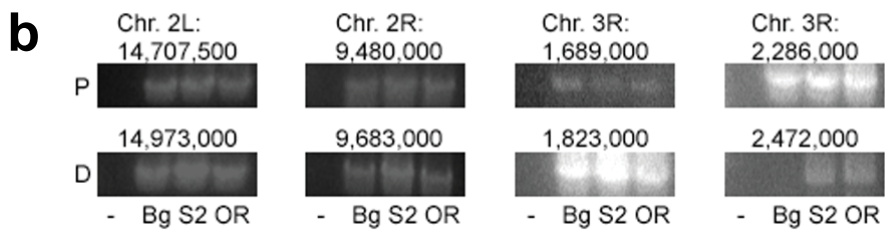
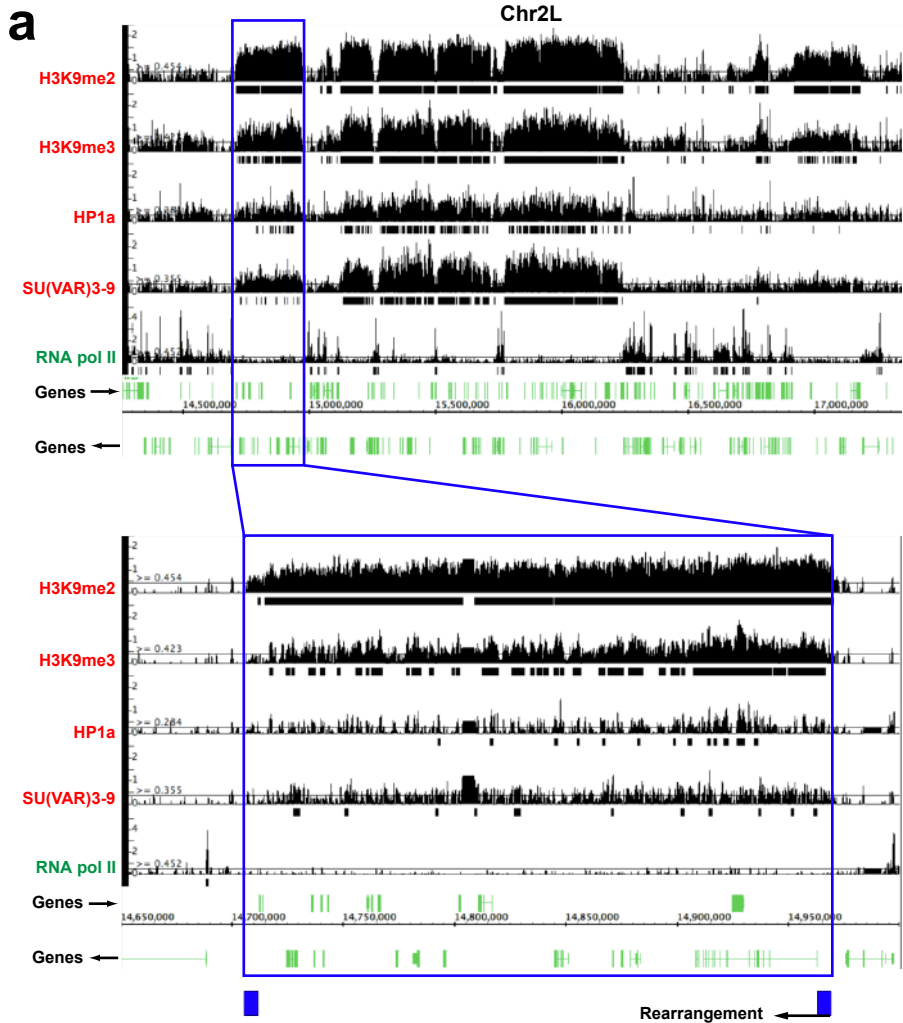
“common” euchromatic chrX



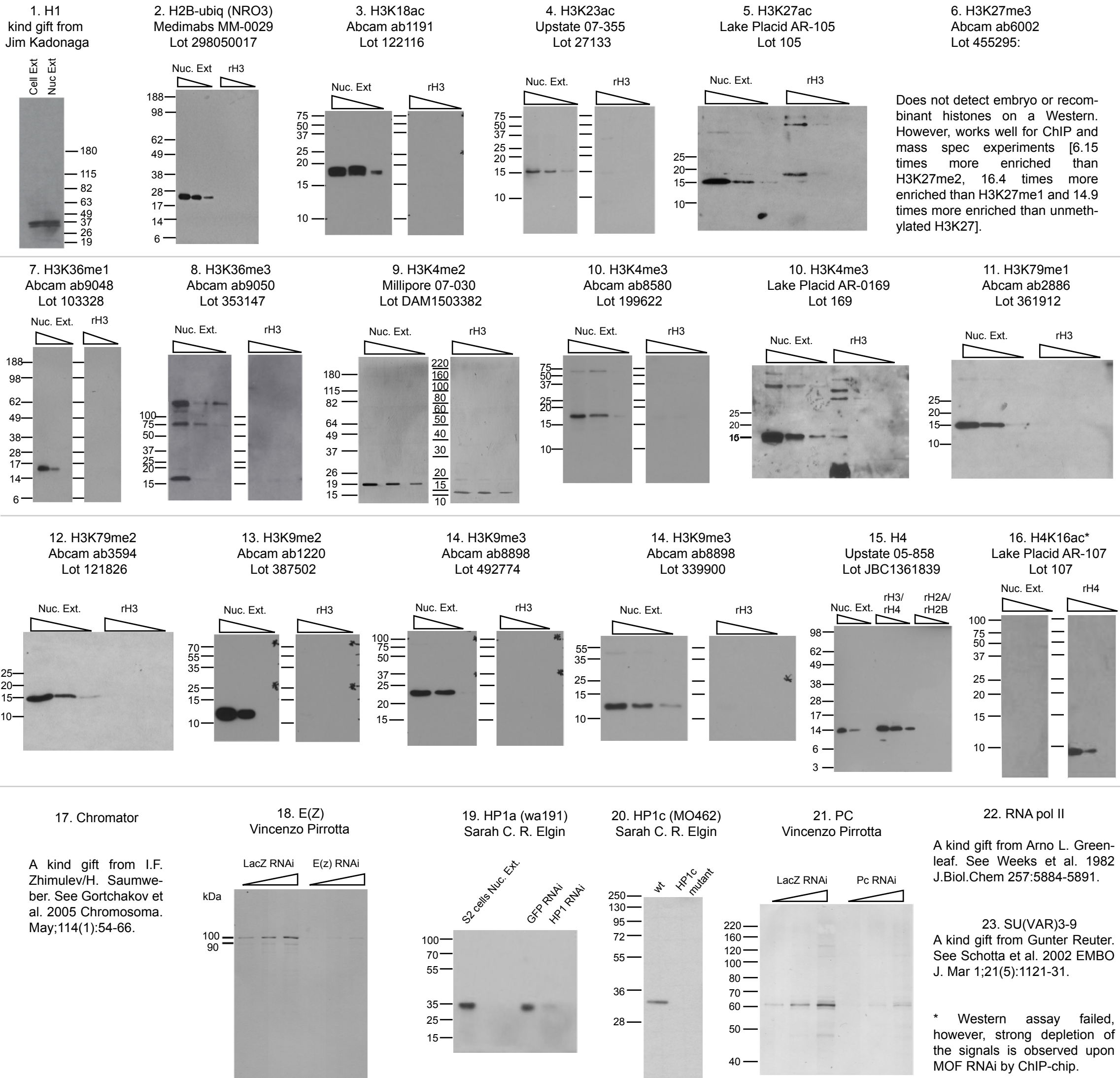
Supplemental Figure 15



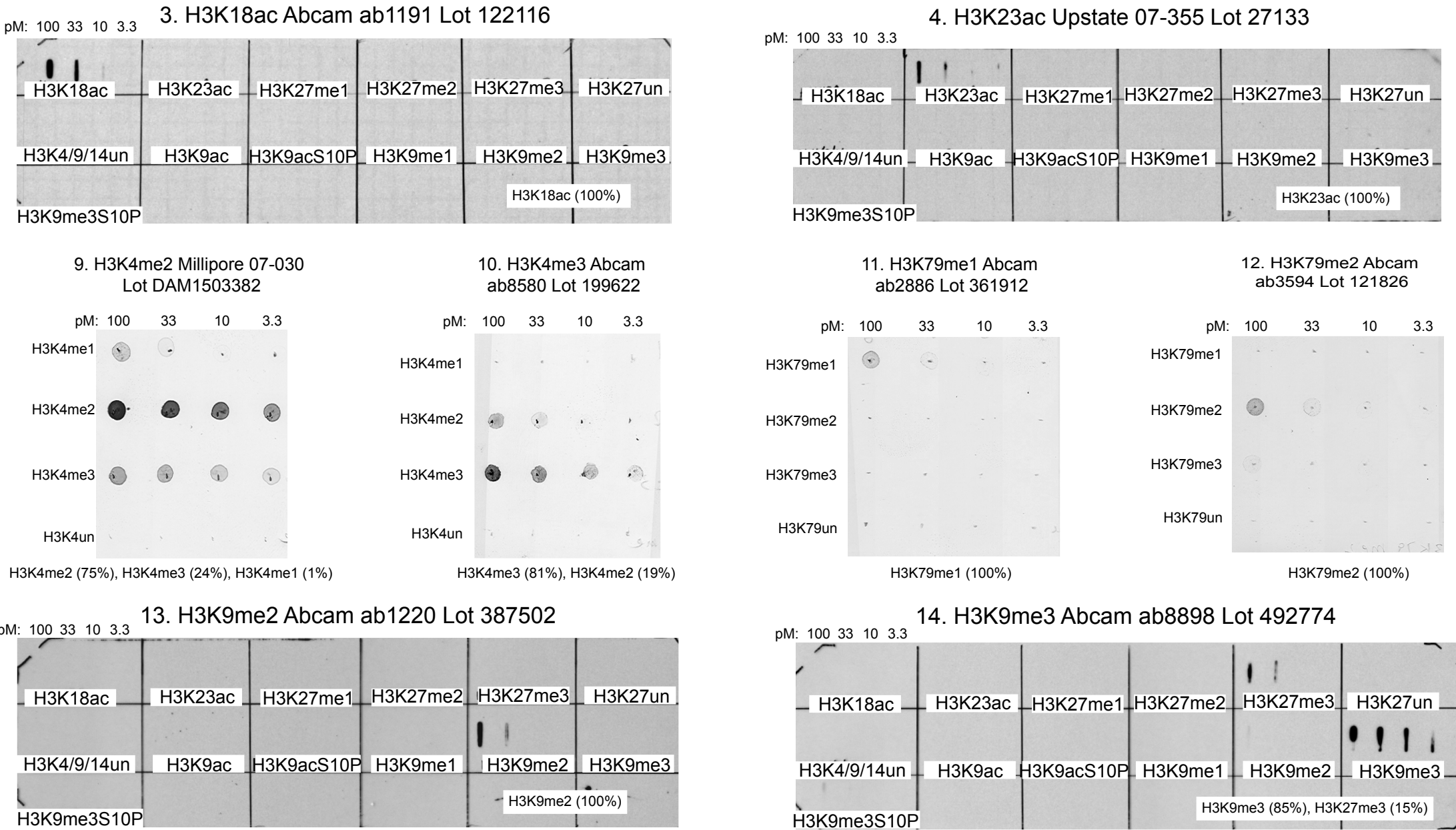
Supplemental Figure 16



Supplementary Figure 17 - Western Blots



Peptide Blots



9. H3K4me2 Millipore 07-030
Lot DAM1503382

10. H3K4me3 Abcam ab8580 Lot 199622

11. H3K79me1 Abcam ab2886 Lot 361912

12. H3K79me2 Abcam ab3594 Lot 121826

13. H3K9me2 Abcam ab1220 Lot 387502

14. H3K9me3 Abcam ab8898 Lot 492774