A
Embryos
12-25 blastulae (50K-100K cells)
Dissociate
Single cells
Extract
Nuclei
CUT&RUN
Nuclei bound to ConA beads
Antibody / pAG-MNase
Chromatin
DNA footprints
B
% DNA recovery
Nuclear extraction:
Gentle wash
Pipet mixing
Vortex
Cell dissociated
Whole embryo
C
Correlation (r)
D
H3K27ac
H3K4me3
No Antibody
Promoters (N=44,477)
+/- 2Kb
Coverage
Low
High
E
TSS region
Upstream
St. 8 H3K4me3
St. 9 H3K4me3
St. 8 H3K27ac
MZ
Z
log2 L/S coverage
Homeolog activation
F
St. 8 H3K4me3
St. 9 H3K4me3
log2 L/S CUT&RUN coverage
log2 L/S RNA-seq activation
P = 3.7x10-18
P = 1.2x10-73
St. 8 H3K27ac TSS
St. 8 H3K27ac upstream
P = 5.4x10-39
P = 1.6x10-15
G
St. 8 H3K27ac
St. 8 H3K4me3
RNA-seq
Homeologous genes
L>S
L≈S
S>L
TSS -3Kb/+0.5Kb
TSS -0.5Kb/+3Kb
RPM
Avg. Coverage (RPM)
log2 activation