Drosophila ChIP-seq

update

Sílvia, Cecilia, Marina 11/07/2018

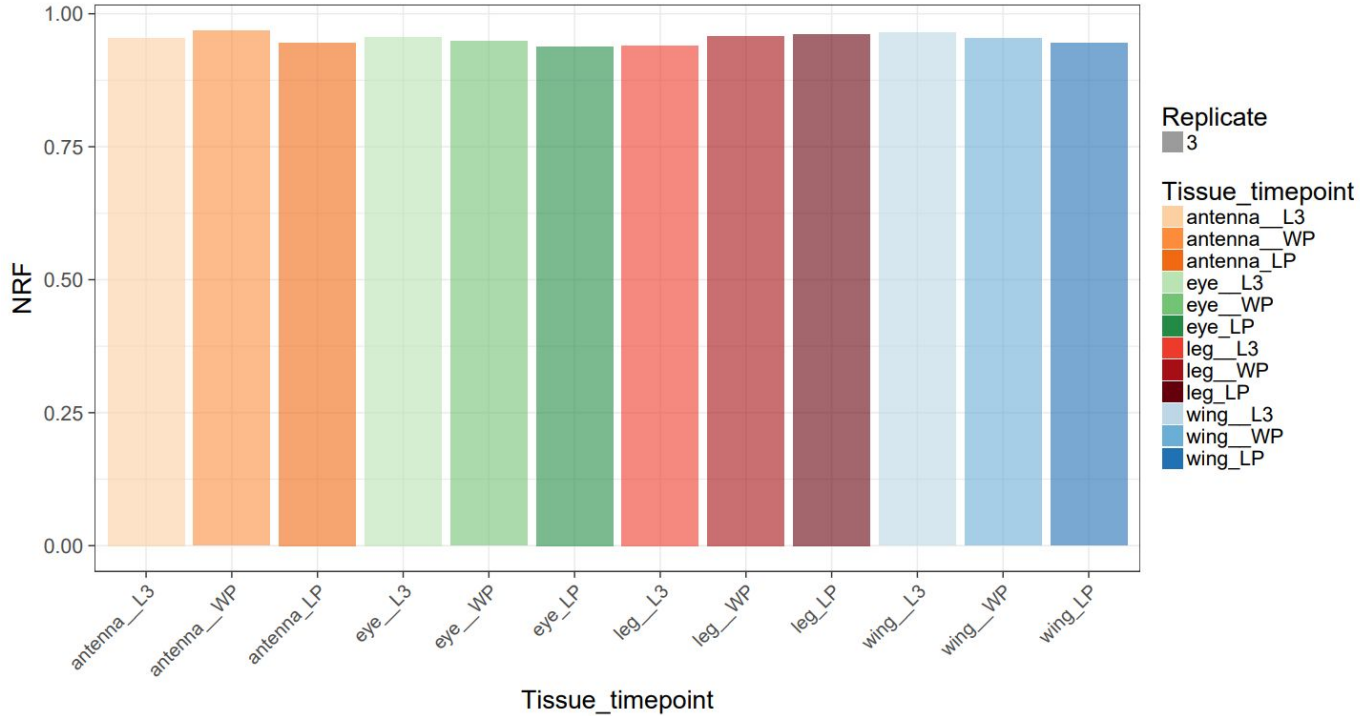
OVERVIEW

- H3K9me3: QC and results
- H4K20me1: QC and results
- Quantile normalization
- ChIP protocol trial in low input human cells:
  - Protocol
  - Trial
  - QC and results

НЗК9МЕЗ

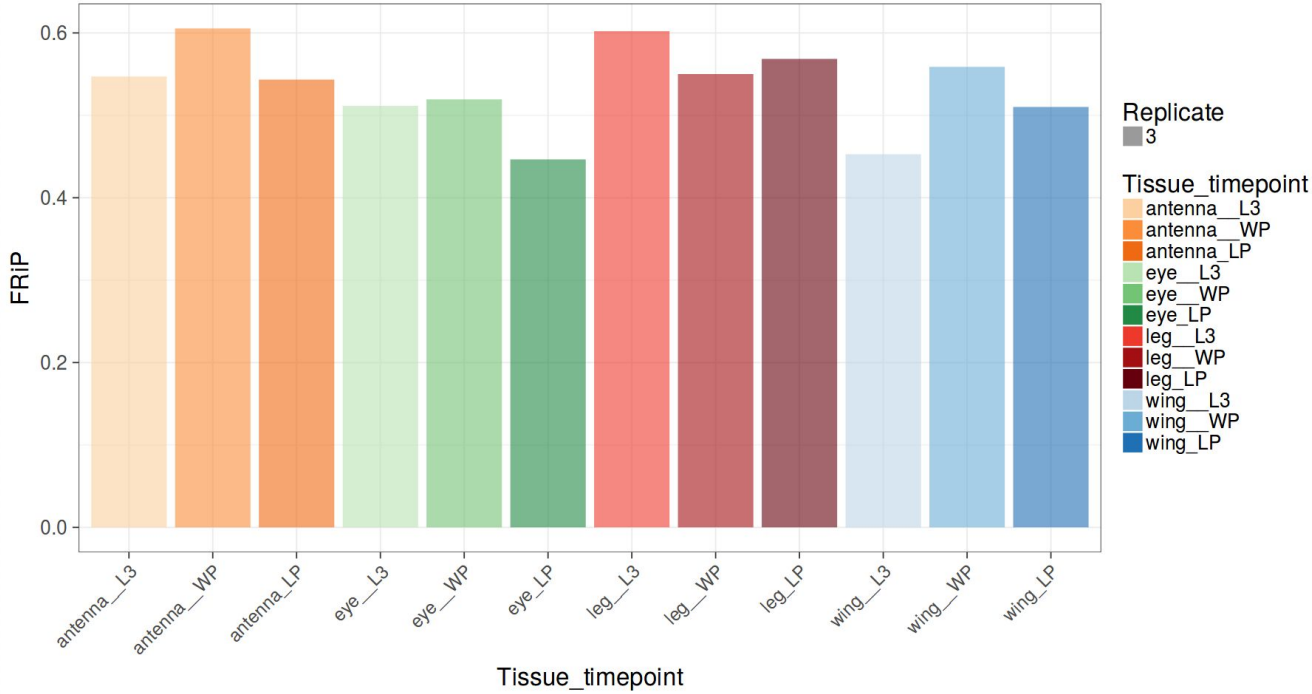
H3K9me3: QC & results

NRF(non redundancy fraction): >0.8



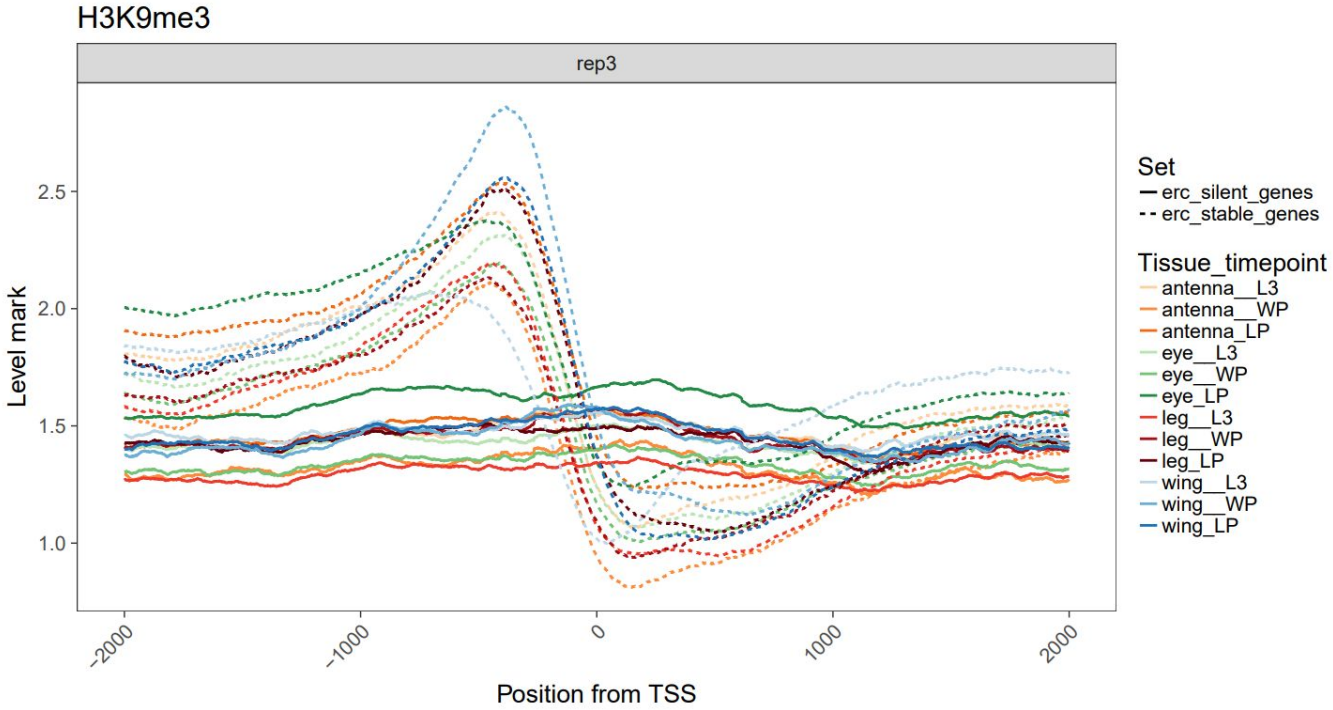
H3K9me3: QC & RESULTS

FRiP(fraction of reads in peaks): >0.8

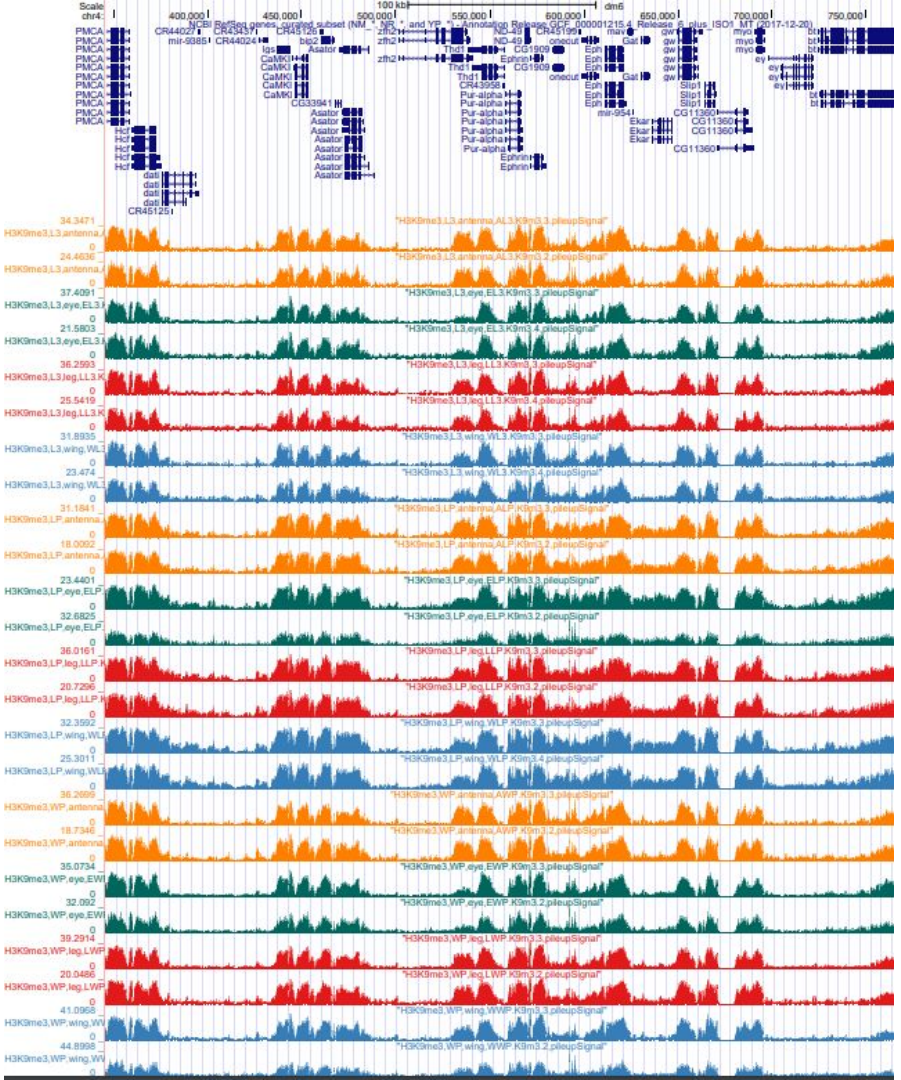


H3K9me3: QC & results

Aggregation plot



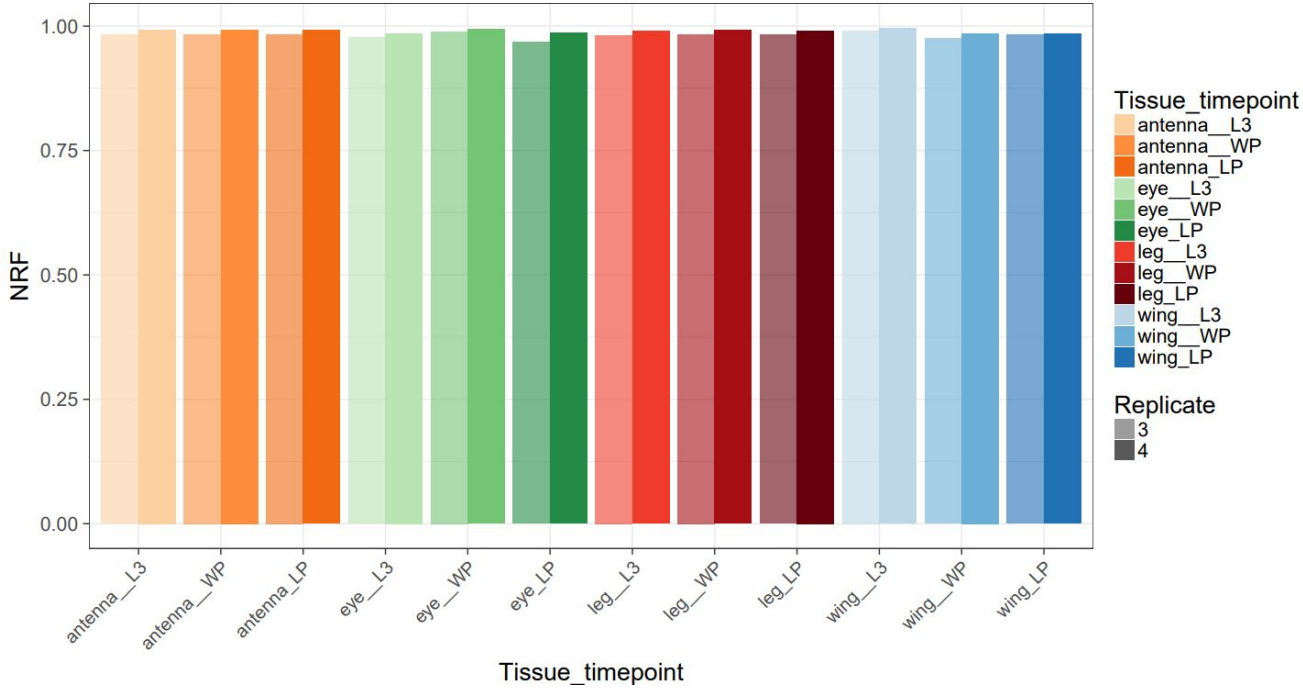
H3K9me3: QC & results



H4K20ME1

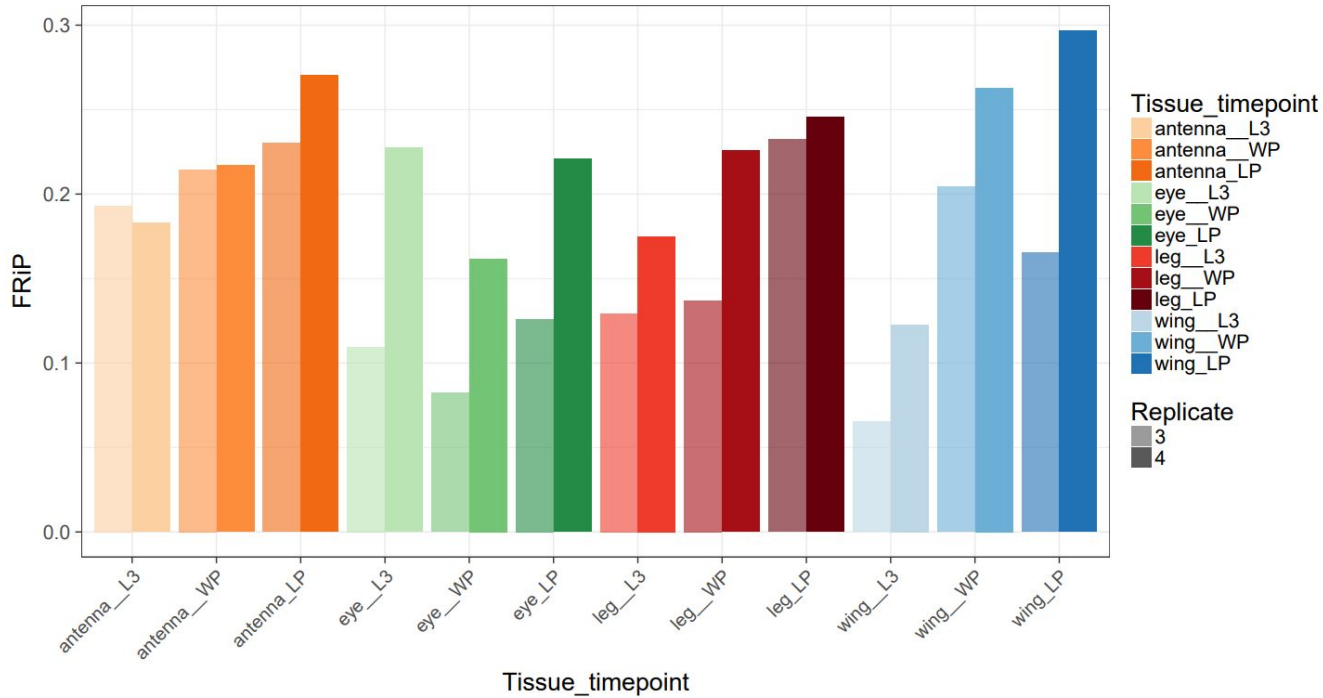
H4K20me1: QC & results

NRF(non redundancy fraction): >0.8



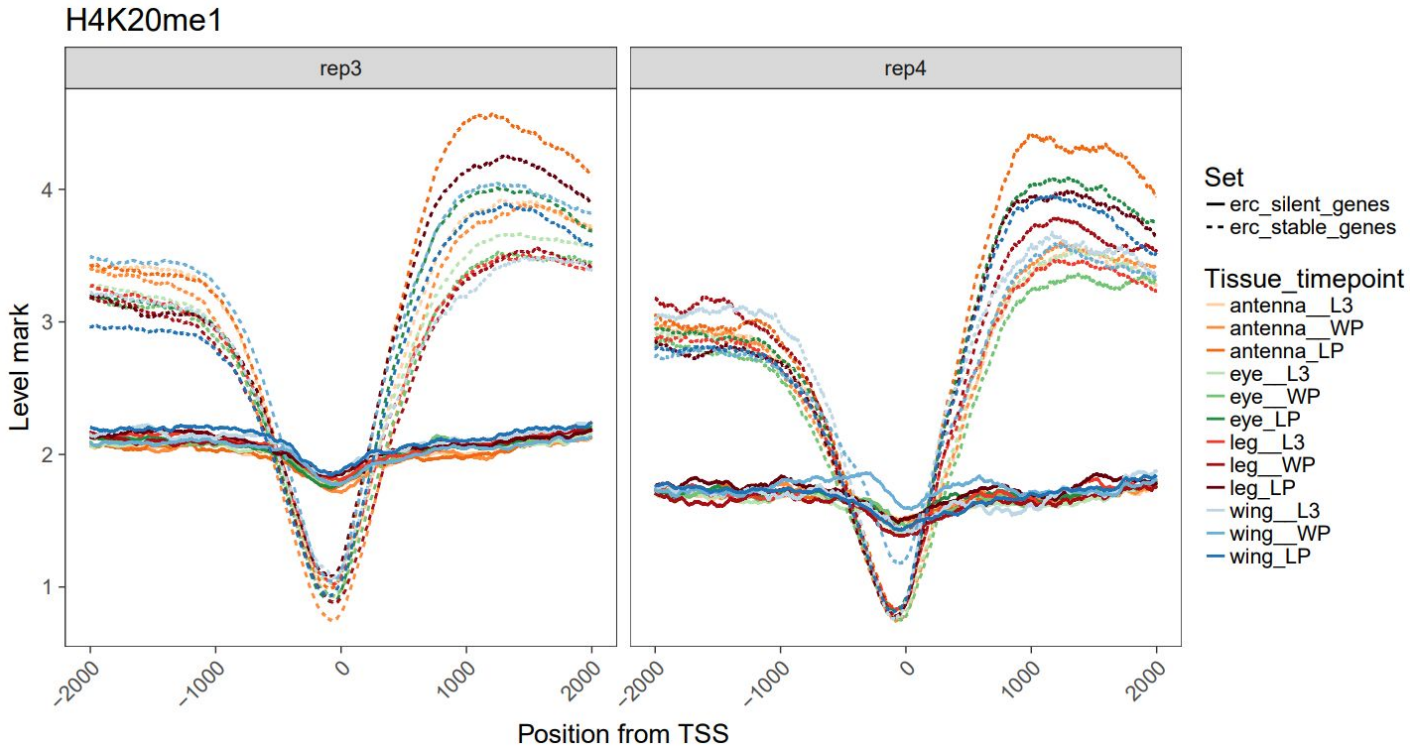
H4K20me1: QC & results

FRiP(fraction of reads in peaks): >0.8

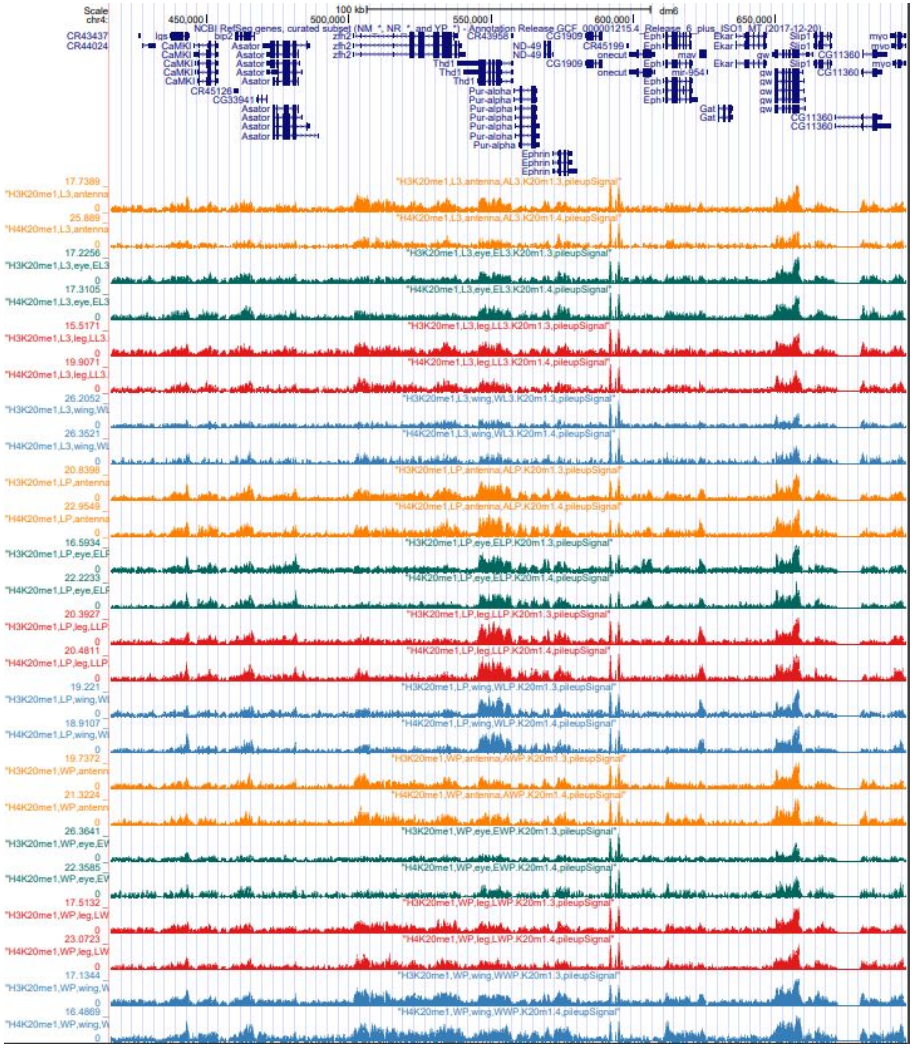


H4K20me1: QC & results

Aggregation plot

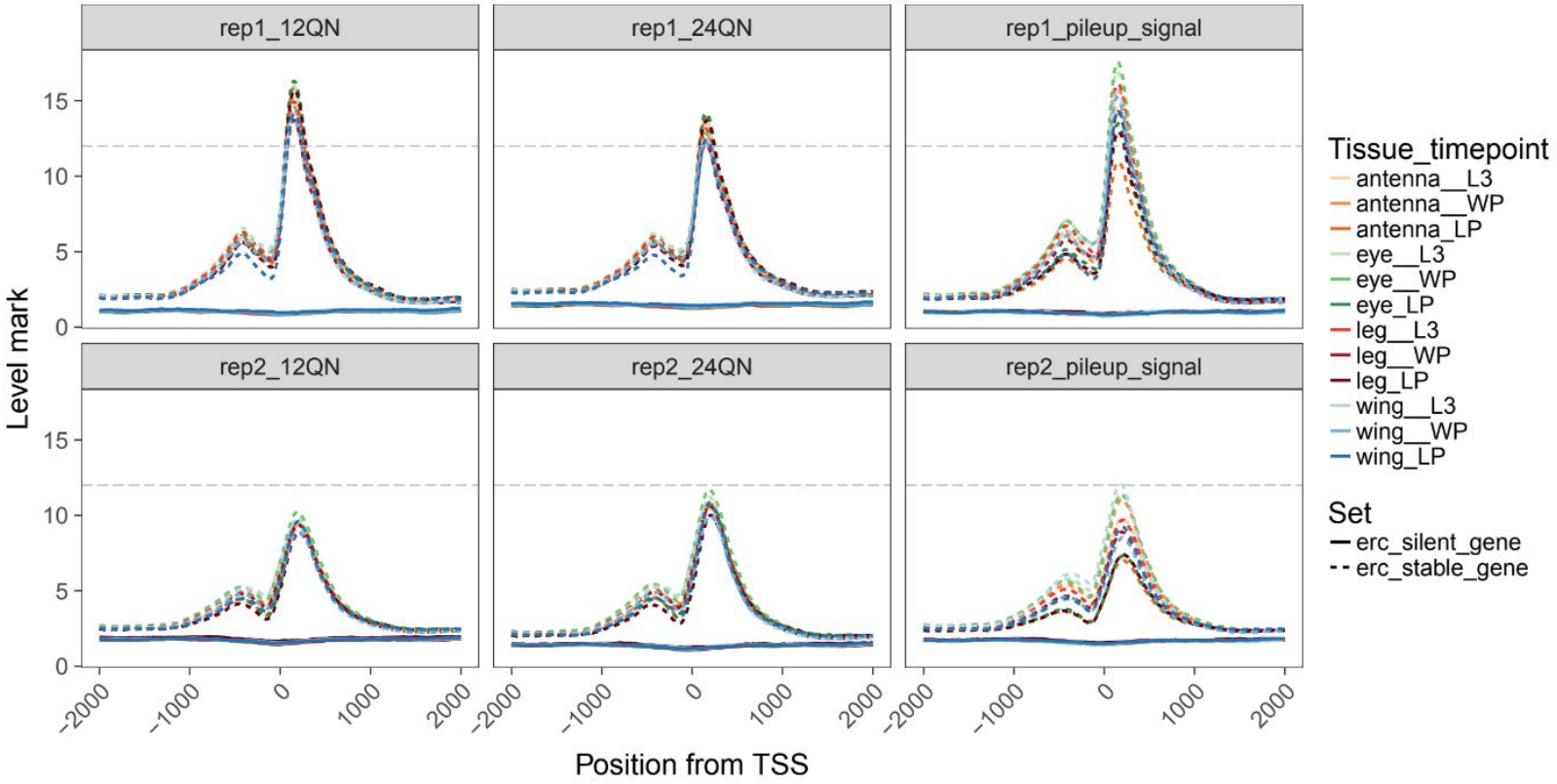


H4K20me1: QC & results



Quantile normalization test

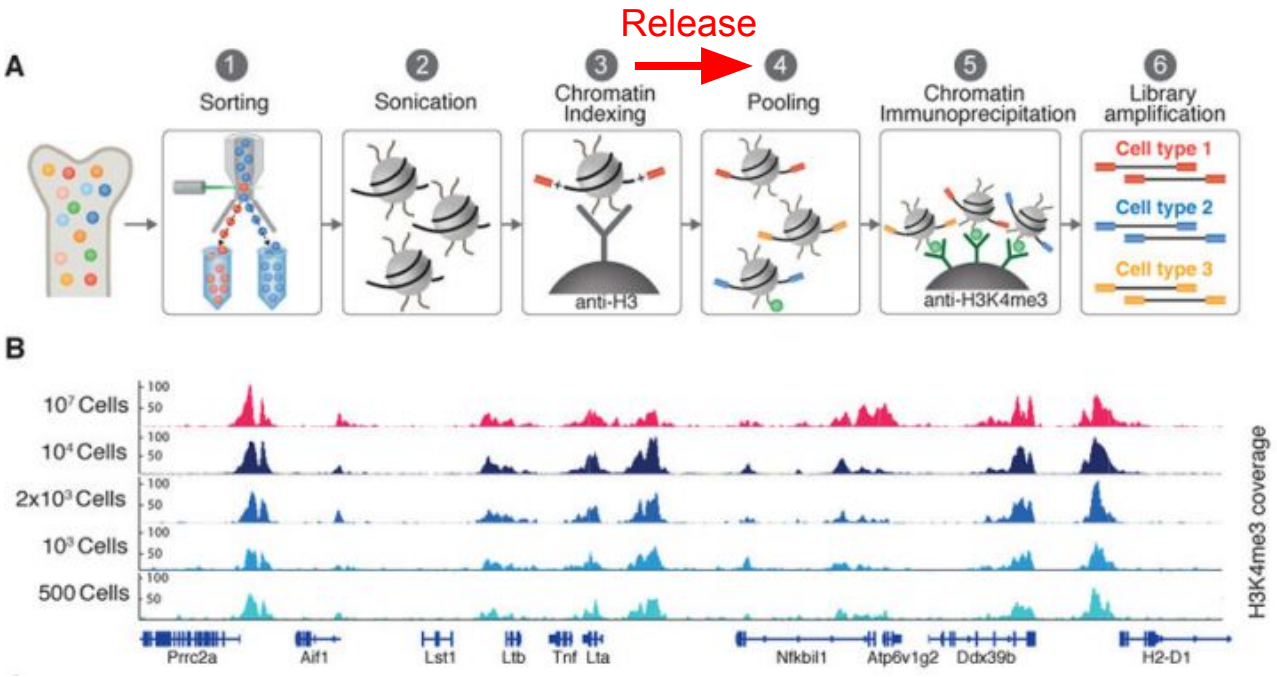
Quantile normalization test: H3K27ac



Chip protocol trial:

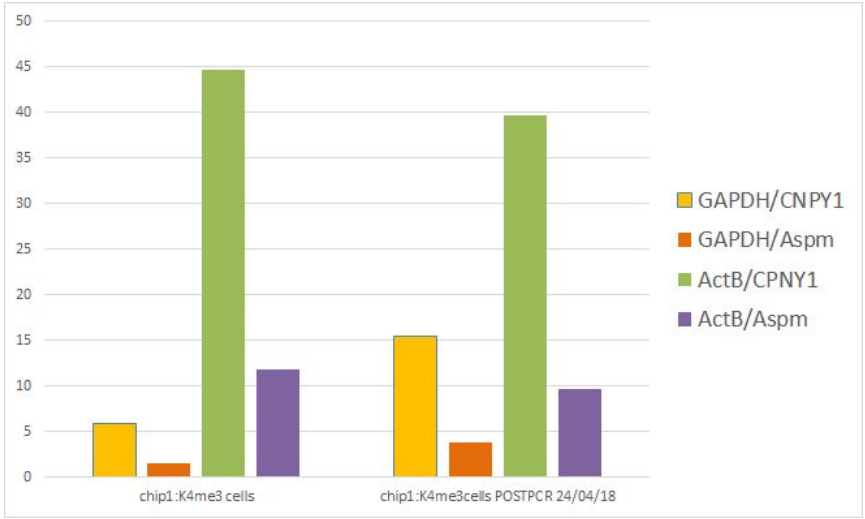
low input human cells

iChIP protocol from Lara-Astiaso et al. 2014



iChIP PROTOCOL IN HUMAN CELLS: TRIAL

qPCR: Chip against H3K4me3 in a pool of 100.000, 10.000, 2.000 and 500 cells

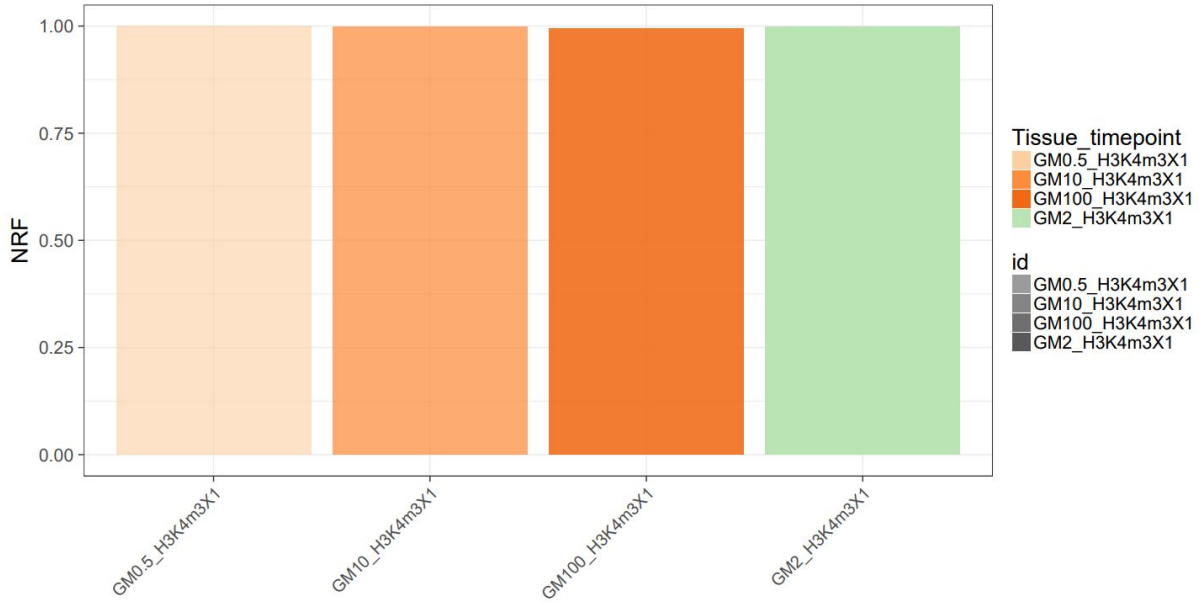


Pre-PCR Post-PCR

Positive regions: GAPDH and ActB
Negative regions: CPNY1 and Aspm

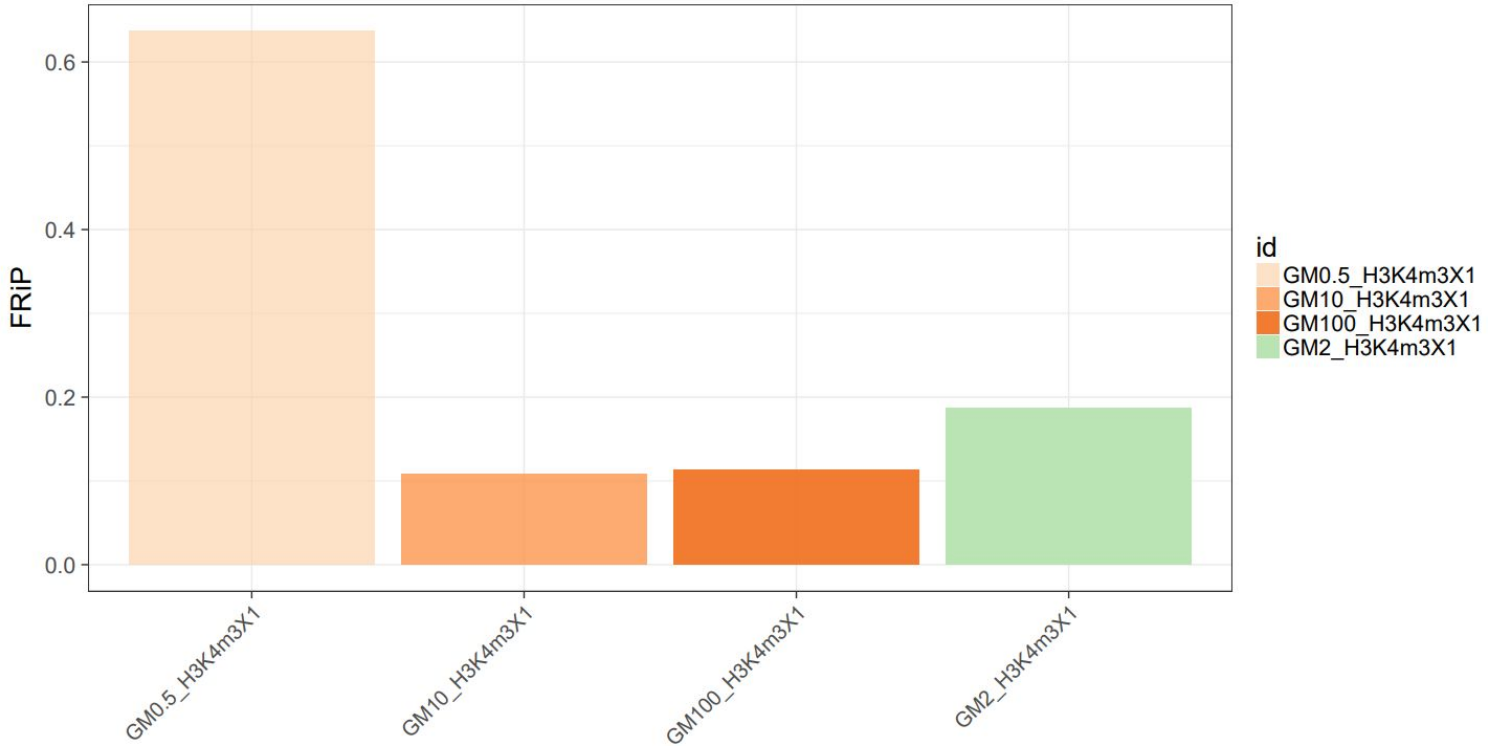
iChIP protocol in human cells: QC & Results

NRF(non redundancy fraction): >0.8



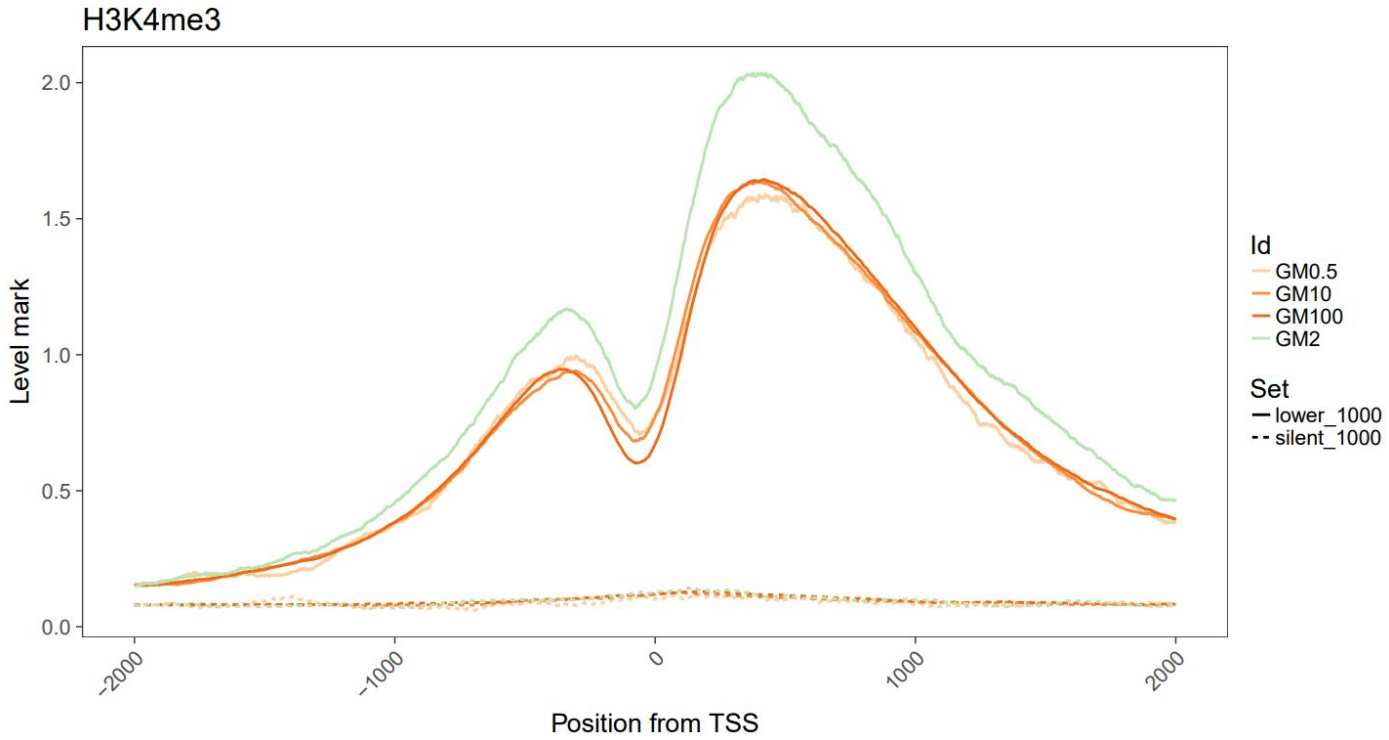
iChIP protocol in human cells: QC & Results

FRiP(fraction of reads in peaks): >0.8



iChIP protocol in human cells: QC & Results

Aggregation plot



iChIP PROTOCOL IN HUMAN CELLS: QC & RESULTS

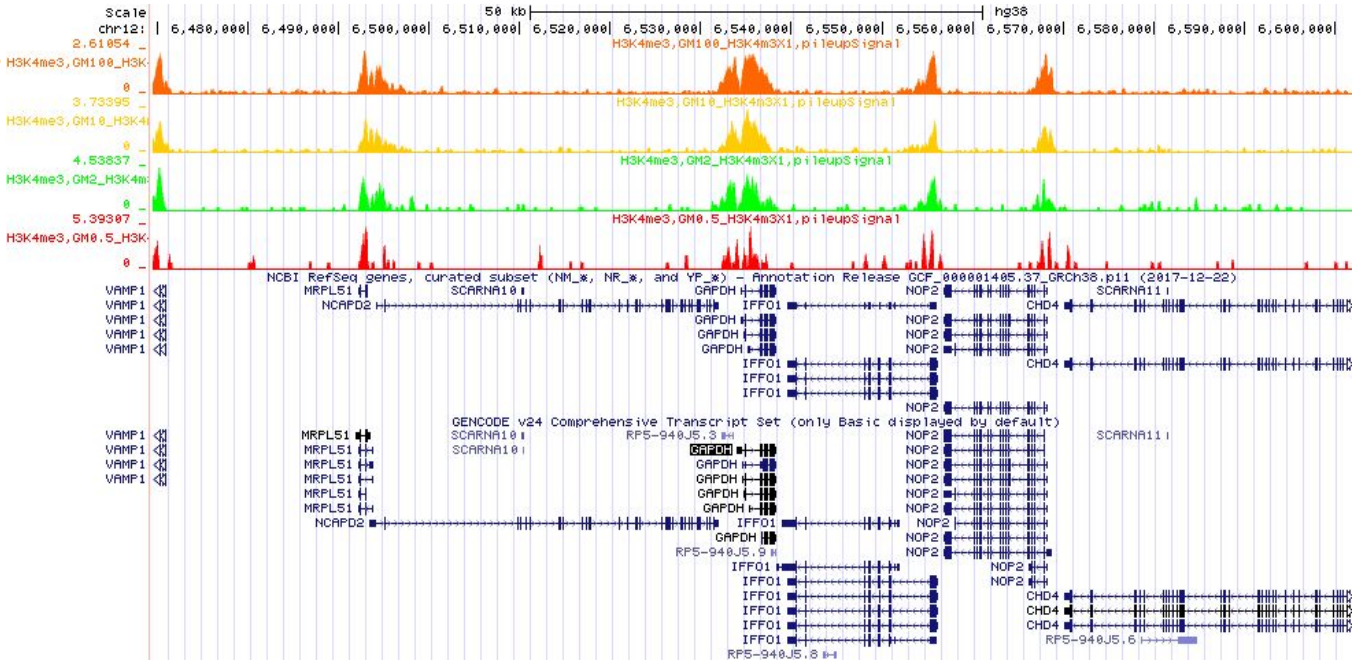
Chip against H3K4me3 in 100.000, 10.000, 2.000 and 500 cells
Run in 1 lane (200 million reads)

100.000 cells — 123M reads

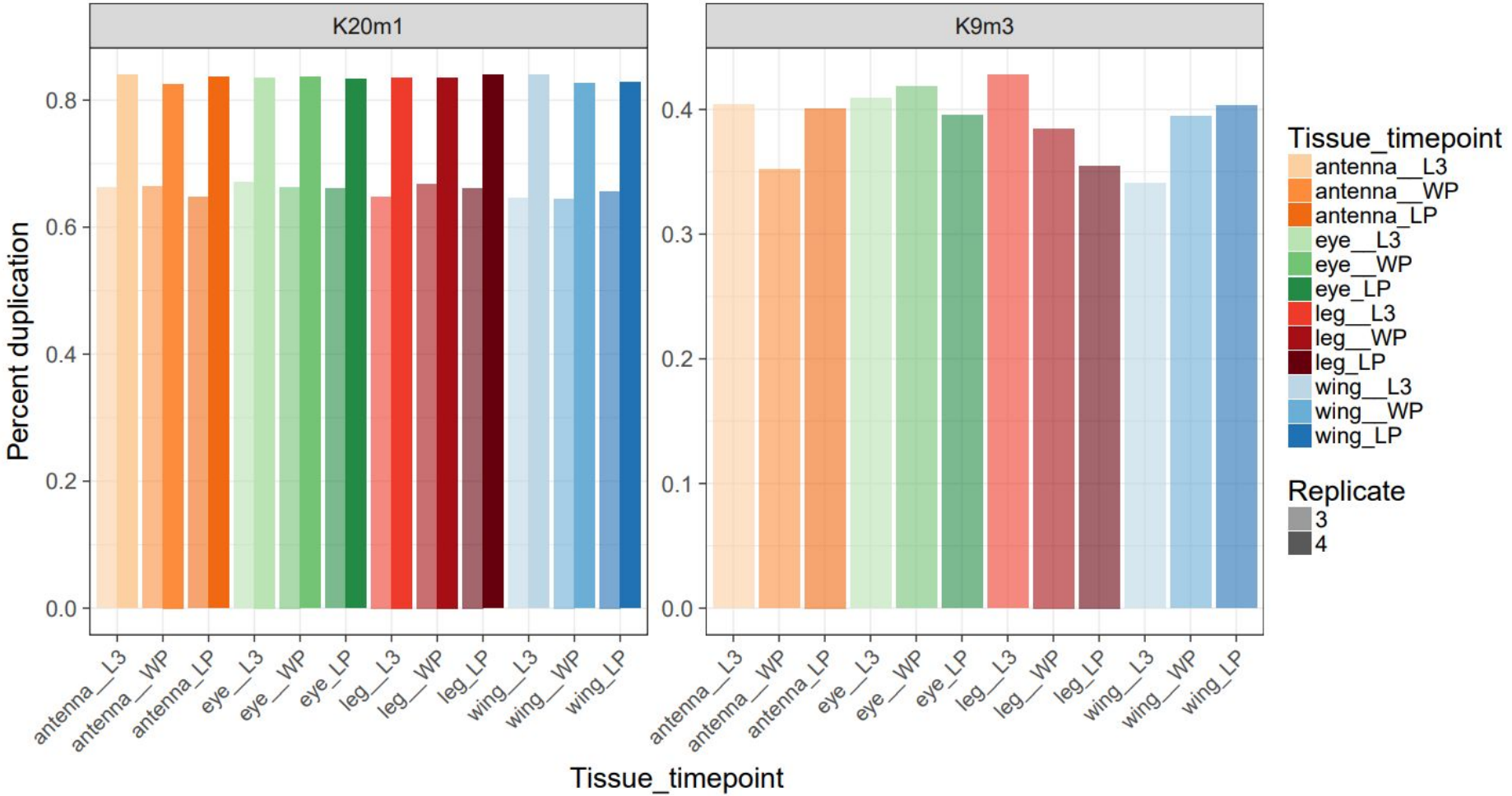
10.000 cells — 60M reads

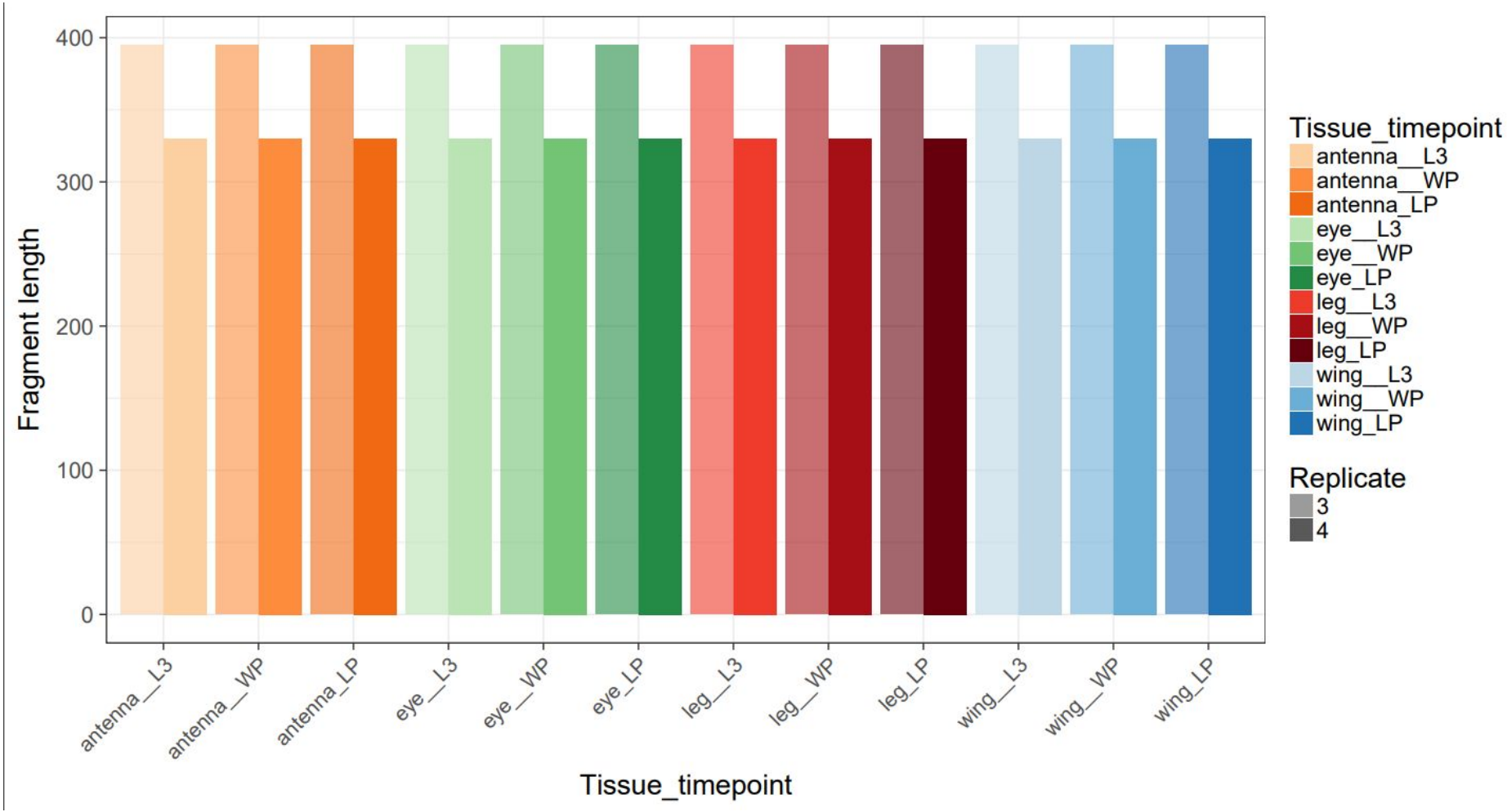
2.000 cells — 18M reads

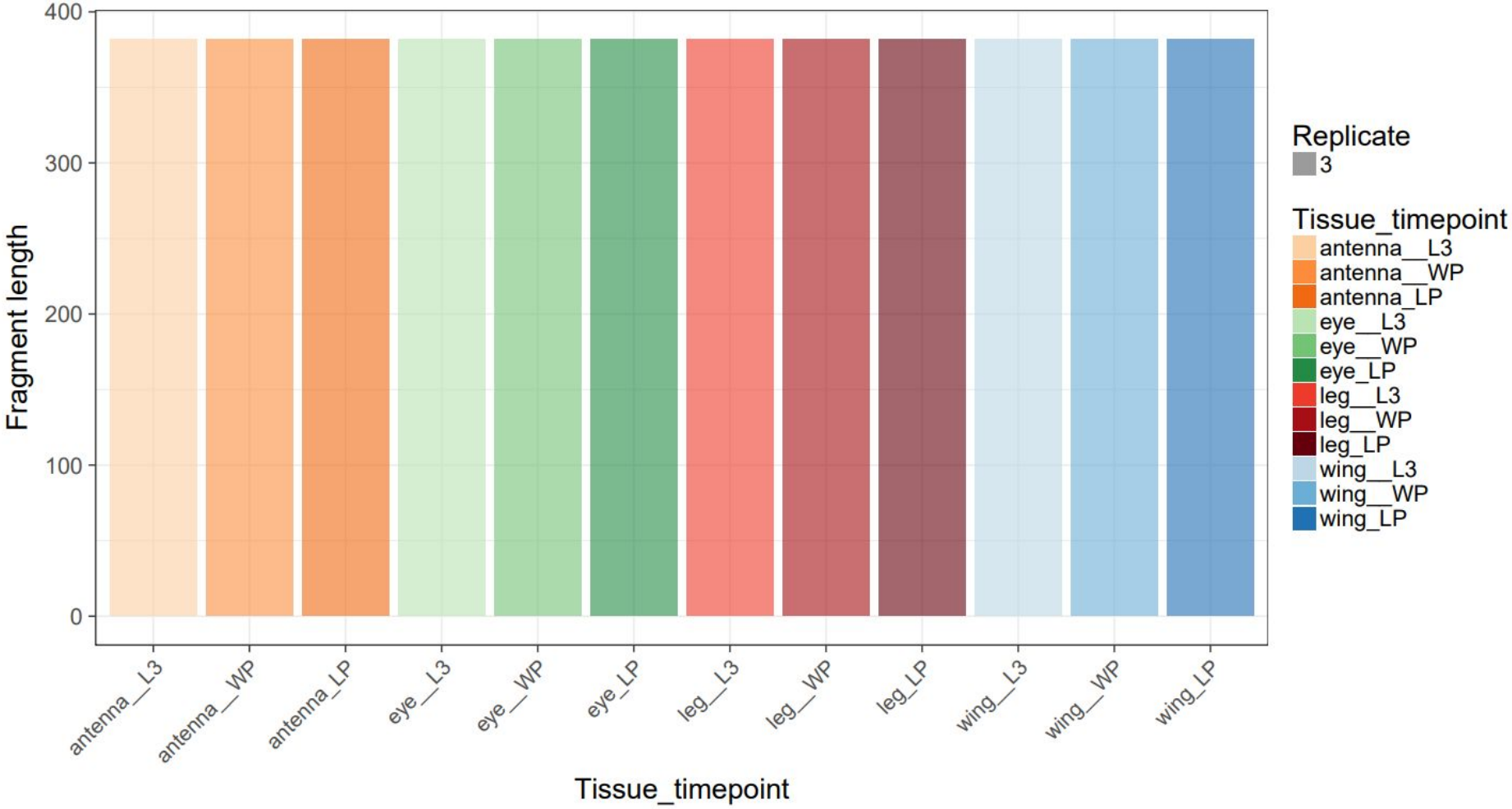
500 cells — 6.5M reads

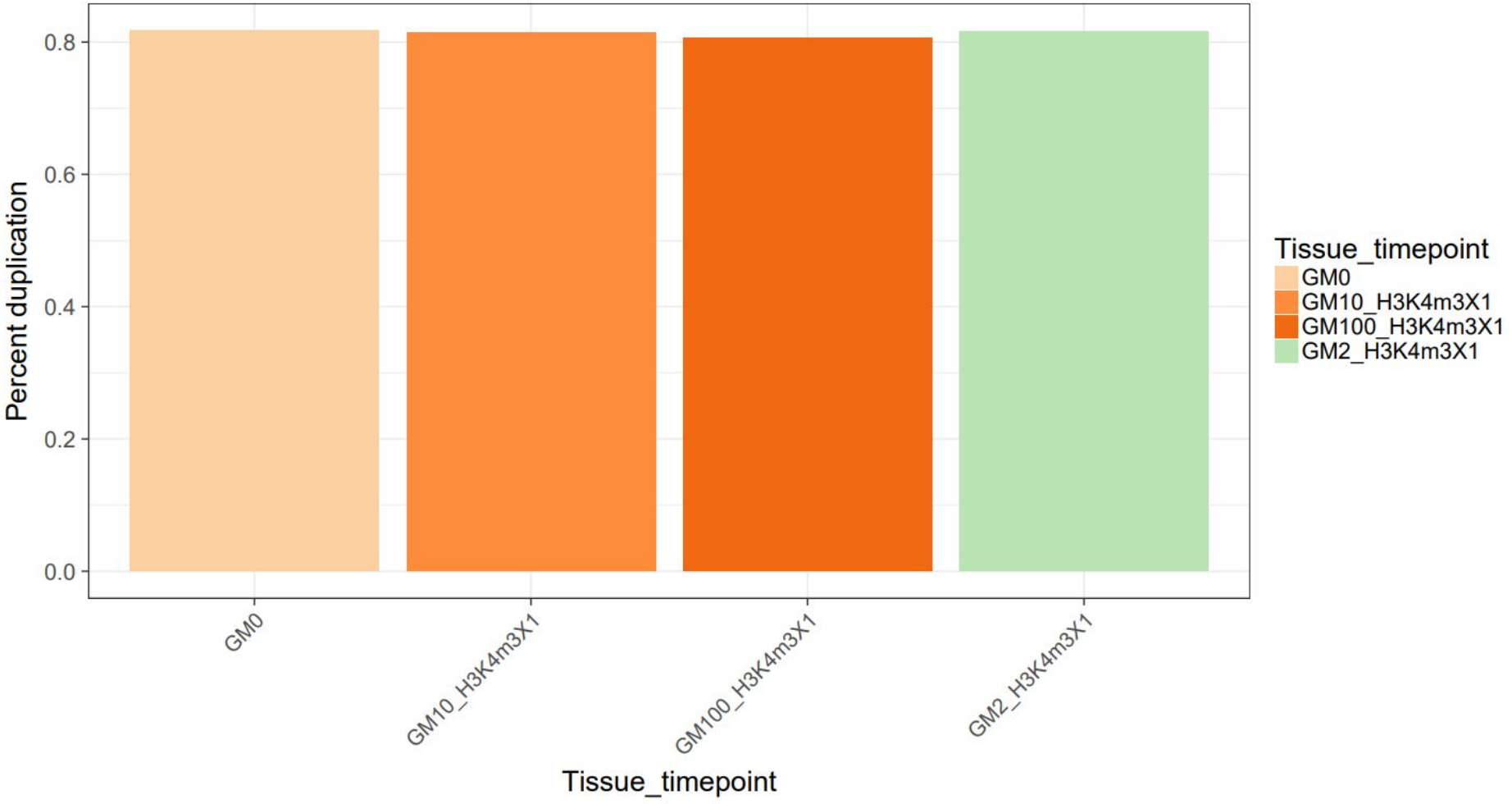


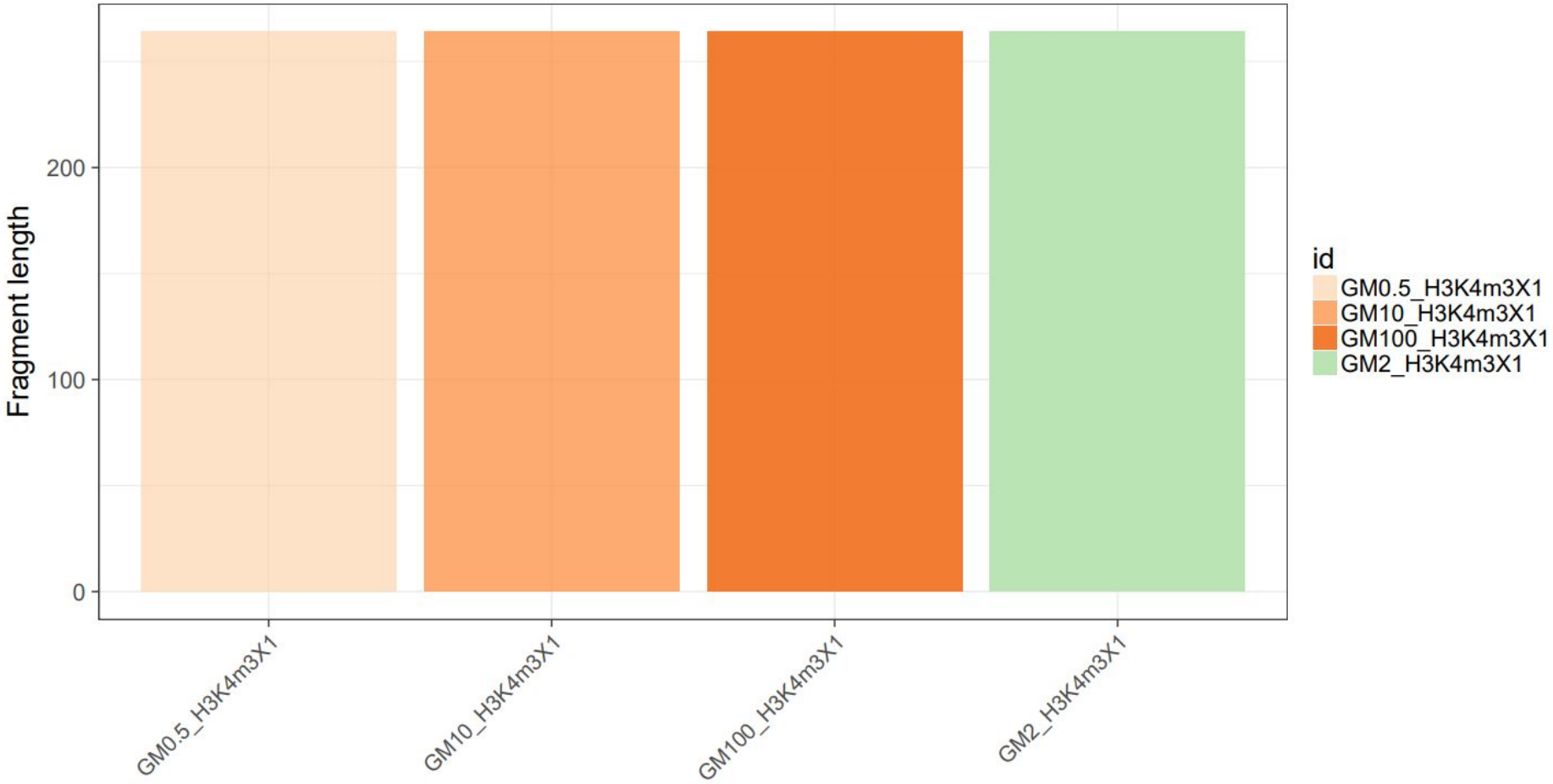
Extra slides


K20m1
K9m3
Percent duplication
0.0
0.2
0.4
0.6
0.8
0.1
0.3
antenna__L3
antenna__WP
antenna_LP
eye__L3
eye__WP
eye_LP
leg__L3
leg__WP
leg_LP
wing__L3
wing__WP
wing_LP
Tissue_timepoint
Tissue_timepoint
antenna__L3
antenna__WP
antenna_LP
eye__L3
eye__WP
eye_LP
leg__L3
leg__WP
leg_LP
wing__L3
wing__WP
wing_LP
Replicate
3
4


Fragment length
400
300
200
100
0
antenna__L3
antenna__WP
antenna_LP
eye__L3
eye__WP
eye_LP
leg__L3
leg__WP
leg_LP
wing__L3
wing__WP
wing_LP
Tissue_timepoint
Tissue_timepoint
antenna__L3
antenna__WP
antenna_LP
eye__L3
eye__WP
eye_LP
leg__L3
leg__WP
leg_LP
wing__L3
wing__WP
wing_LP
Replicate
3
4


400
300
200
100
0
Fragment length
antenna__L3
antenna__WP
antenna_LP
eye__L3
eye__WP
eye_LP
leg__L3
leg__WP
leg_LP
wing__L3
wing__WP
wing_LP
Tissue_timepoint
Replicate
3
Tissue_timepoint
antenna__L3
antenna__WP
antenna_LP
eye__L3
eye__WP
eye_LP
leg__L3
leg__WP
leg_LP
wing__L3
wing__WP
wing_LP


Percent duplication
0.0
0.2
0.4
0.6
0.8
GM0
GM10_H3K4m3X1
GM100_H3K4m3X1
GM2_H3K4m3X1
Tissue_timepoint
Tissue_timepoint
GM0
GM10_H3K4m3X1
GM100_H3K4m3X1
GM2_H3K4m3X1


Fragment length
200
100
0
GM0.5_H3K4m3X1
GM10_H3K4m3X1
GM100_H3K4m3X1
GM2_H3K4m3X1
id
GM0.5_H3K4m3X1
GM10_H3K4m3X1
GM100_H3K4m3X1
GM2_H3K4m3X1