histone_stats_Fig_S5

```
library(tidyr)
library(dplyr)
library(ggplot2)
library(ggpubr)
library(ggrepel)
library(here); i_am("R/Figure3/FigS5_histone_stats.Rmd")
```

H3K27ac

```
histone = "H3K27ac"
window = "1000:1000"
tss_sets = c("beige","white","not_sig")

enrich_tables = list()
for (set in tss_sets){
  file = here("31_leafcutter/histone_profile", histone, paste0("window", window), paste0(set,".",window
  annot = read.delim(file, quote="'")
  colnames(annot)[grep("chr", colnames(annot))] = "chr"
  annot$tss_set = set
  enrich_tables[[set]] = annot
}
str(enrich_tables)
```

```
## List of 3
##  $ beige  :'data.frame': 209 obs. of  6 variables:
##   ..$ chr       : chr [1:209] "chr1" "chr1" "chr1" "chr1" ...
##   ..$ start     : int [1:209] 6613856 14923129 23799401 45338954 55214361 87128764 113757062 1137588
##   ..$ end       : int [1:209] 6615857 14925130 23801402 45340955 55216362 87130765 113759063 1137608
##   ..$ White_Adi.: num [1:209] 4.09 1.58 3.59 3.62 4.34 ...
##   ..$ Beige_Adi.: num [1:209] 4.6 1.21 3.62 3.86 4.46 ...
##   ..$ tss_set   : chr [1:209] "beige" "beige" "beige" "beige" ...
##  $ white  :'data.frame': 213 obs. of  6 variables:
##   ..$ chr       : chr [1:213] "chr1" "chr1" "chr1" "chr1" ...
##   ..$ start     : int [1:213] 6612730 11802676 14944918 17633256 23799780 26431281 33348884 55214363
##   ..$ end       : int [1:213] 6614731 11804677 14946919 17635257 23801781 26433282 33350885 55216364
##   ..$ White_Adi.: num [1:213] 4.56 3.96 4.24 1.38 3.7 ...
##   ..$ Beige_Adi.: num [1:213] 4.604 3.196 3.75 0.861 3.904 ...
##   ..$ tss_set   : chr [1:213] "white" "white" "white" "white" ...
##  $ not_sig:'data.frame': 23636 obs. of  6 variables:
##   ..$ chr       : chr [1:23636] "chr1" "chr1" "chr1" "chr1" ...
##   ..$ start     : int [1:23636] 28369 494475 497975 497975 498174 500606 501872 501872 513412 516251
##   ..$ end       : int [1:23636] 30370 496476 499976 499976 500175 502607 503873 503873 515413 518252
##   ..$ White_Adi.: num [1:23636] 0 0.000608 0 0 0 ...
```

```
##   ..$ Beige_Adi.: num [1:23636] 0 0 0 0 0 0 0 0 0 0 ...
##   ..$ tss_set   : chr [1:23636] "not_sig" "not_sig" "not_sig" "not_sig" ...
```

```
annot <- do.call(rbind, enrich_tables)
table(annot$tss_set)
```

```
##
##   beige not_sig   white
##     209   23636     213
```

```
head(annot); nrow(annot)
```

```
##          chr    start      end White_Adi. Beige_Adi. tss_set
## beige.1 chr1  6613856  6615857   4.092273   4.596609   beige
## beige.2 chr1 14923129 14925130   1.576263   1.207065   beige
## beige.3 chr1 23799401 23801402   3.594554   3.623050   beige
## beige.4 chr1 45338954 45340955   3.616605   3.855941   beige
## beige.5 chr1 55214361 55216362   4.344138   4.462454   beige
## beige.6 chr1 87128764 87130765   2.189834   2.507697   beige
```

```
## [1] 24058
```

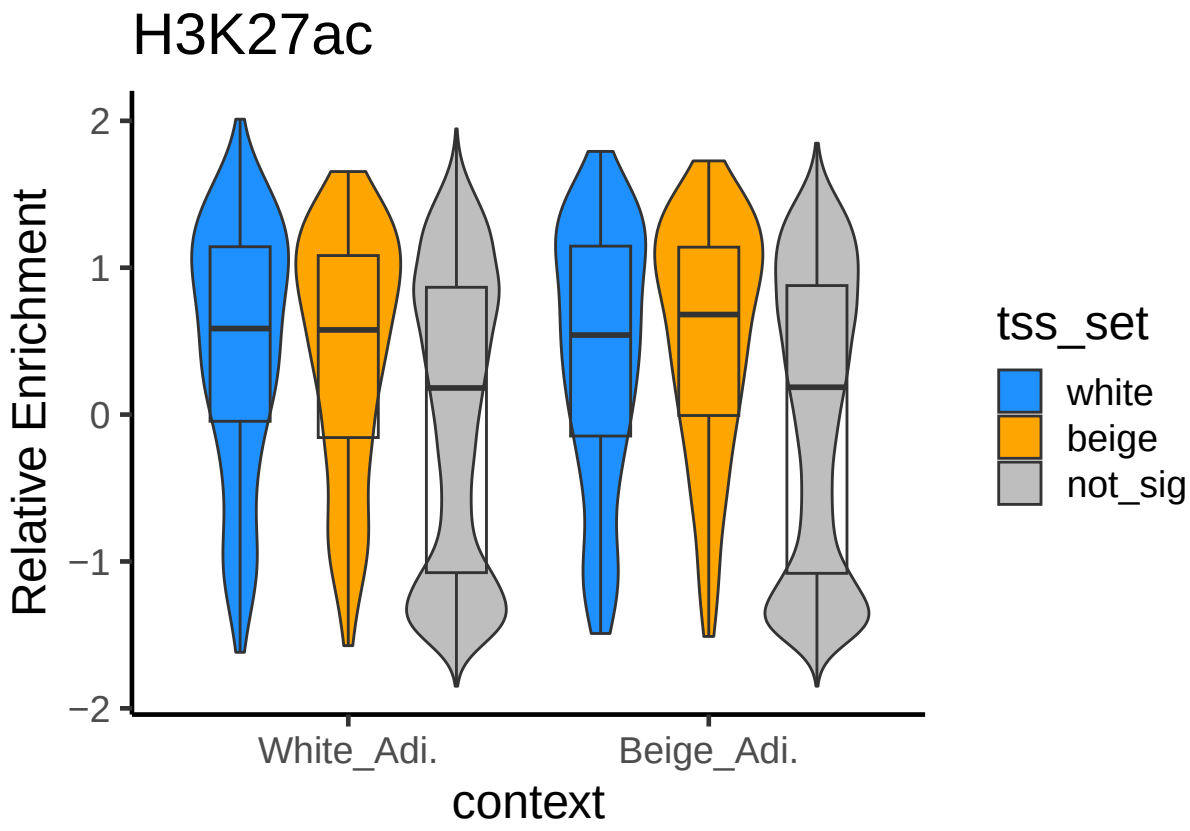
```
long = pivot_longer(annot, grep("Adi.",colnames(annot)), names_to = "context", values_to = "mean_enrichm
long$context = factor(long$context, levels=c("White_Adi.","Beige_Adi."))
long$tss_set = factor(long$tss_set, levels=c("white","beige","not_sig"))
```

```
relative = long %>% group_by(context) %>% mutate(zscore = scale(mean_enrichment), group=paste0(context,
relative$group = factor(relative$group, levels=paste0(rep(levels(relative$context),each=3), levels(rela

ggplot(relative,
       aes(fill=tss_set, y=zscore, x=context, group=group)) + geom_violin() +
    geom_boxplot(fill=NA, width=0.5, position= position_dodge(0.9)) + scale_fill_manual(values= c("dodg
    theme_classic(base_size=18) + ylab("Relative Enrichment") + ggtitle(histone)
```

```
## Warning: Removed 12 rows containing non-finite values (`stat_ydensity()`).
```

```
## Warning: Removed 12 rows containing non-finite values (`stat_boxplot()`).
```



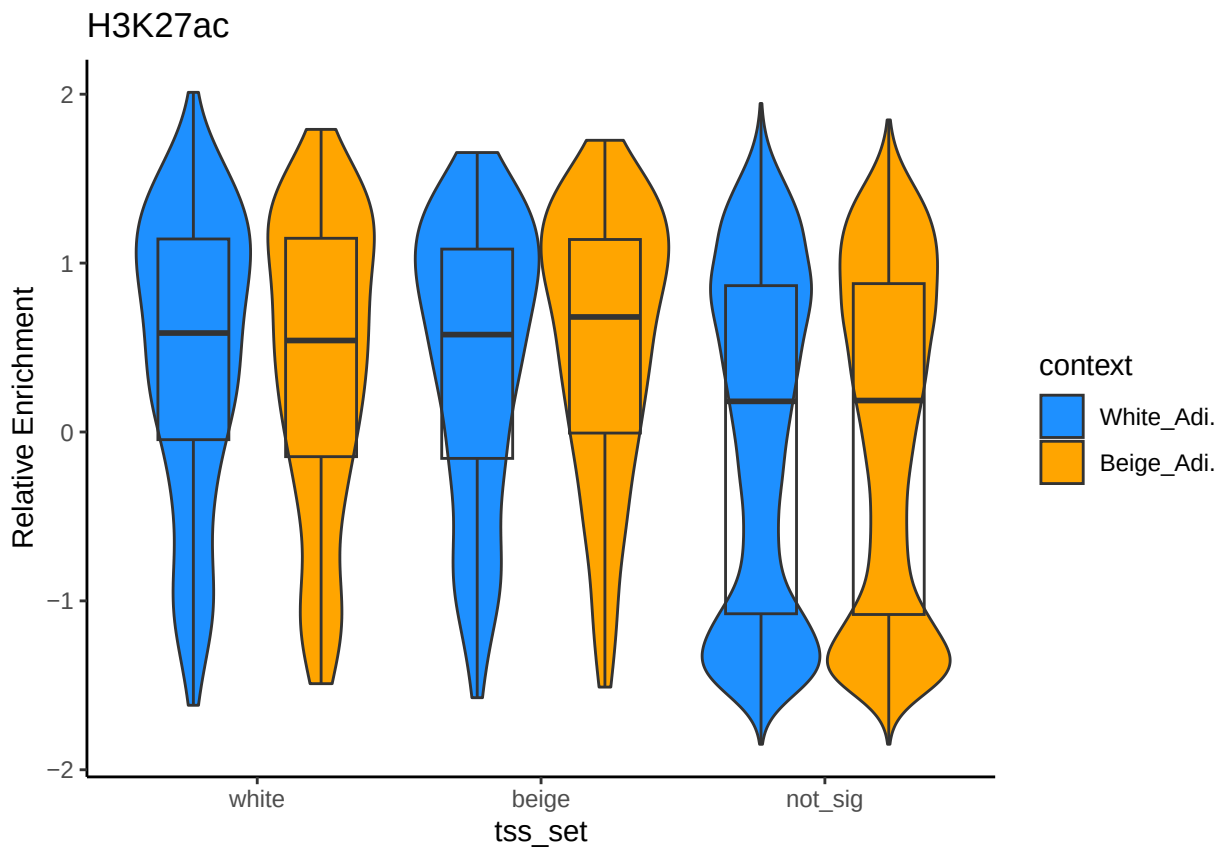

```
ggsave(here("31_leafcutter/histone_profile", histone, paste0(histone, "_violin_plot.pdf")))
```

```
## Saving 6.5 x 4.5 in image
```

```
## Warning: Removed 12 rows containing non-finite values (`stat_ydensity()`).
## Removed 12 rows containing non-finite values (`stat_boxplot()`).
```

```
ggplot(relative,
       aes(x=tss_set, y=zscore, fill=context, group=group)) + geom_violin() +
    geom_boxplot(fill=NA, width=0.5, position= position_dodge(0.9))+scale_fill_manual(values= c("dodgerb
  theme_classic() + ylab("Relative Enrichment")+ ggtitle(histone)
```

```
## Warning: Removed 12 rows containing non-finite values (`stat_ydensity()`).
## Removed 12 rows containing non-finite values (`stat_boxplot()`).
```




```
summary(aov(zscore ~tss_set*context, data=relative))
```

```
##                    Df Sum Sq Mean Sq F value Pr(>F)
## tss_set             2    176   87.97  88.284 <2e-16 ***
## context             1      0    0.00   0.000  1.000
## tss_set:context     2      1    0.60   0.606  0.545
## Residuals       48098  47925    1.00
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
## 12 observations deleted due to missingness
```

```
compare_means(zscore ~ tss_set, data=relative, method="wilcox.test", group.by="context")
```

```
## # A tibble: 6 x 9
##   context    .y.    group1 group2         p    p.adj p.format p.signif method
##   <fct>      <chr>  <chr>  <chr>      <dbl>    <dbl> <chr>    <chr>    <chr>
## 1 White_Adi. zscore white  beige   7.39e- 1 7.4 e- 1 0.74     ns       Wilcoxon
## 2 White_Adi. zscore white  not_sig 2.38e-11 1.20e-10 2.4e-11  ****     Wilcoxon
## 3 White_Adi. zscore beige  not_sig 2.76e-10 1.10e- 9 2.8e-10  ****     Wilcoxon
## 4 Beige_Adi. zscore white  beige   2.37e- 1 4.7 e- 1 0.24     ns       Wilcoxon
## 5 Beige_Adi. zscore white  not_sig 2.48e- 9 7.4 e- 9 2.5e-09  ****     Wilcoxon
## 6 Beige_Adi. zscore beige  not_sig 4.47e-14 2.70e-13 4.5e-14  ****     Wilcoxon
```

upstream H3K4me1

```
histone = "H3K4me1"
window = "2000:-250"
tss_sets = c("beige","white","not_sig")

enrich_tables = list()
for (set in tss_sets){
  file = here("31_leafcutter/histone_profile", histone, paste0("window", window), paste0(set,".",window
  annot = read.delim(file, quote="'")
  colnames(annot)[grep("chr", colnames(annot))] = "chr"
  annot$tss_set = set
  enrich_tables[[set]] = annot
}
str(enrich_tables)
```

```
## List of 3
##  $ beige  :'data.frame': 209 obs. of  6 variables:
##   ..$ chr       : chr [1:209] "chr1" "chr1" "chr1" "chr1" ...
##   ..$ start     : int [1:209] 6612856 14922129 23800651 45340204 55215611 87127764 113758312 1137601
##   ..$ end       : int [1:209] 6614607 14923880 23802402 45341955 55217362 87129515 113760063 1137618
##   ..$ White_Adi.: num [1:209] -0.597 0.844 0.495 0.985 0.503 ...
##   ..$ Beige_Adi.: num [1:209] -0.234 0.311 0.835 1.127 0.555 ...
##   ..$ tss_set   : chr [1:209] "beige" "beige" "beige" "beige" ...
##  $ white  :'data.frame': 213 obs. of  6 variables:
##   ..$ chr       : chr [1:213] "chr1" "chr1" "chr1" "chr1" ...
##   ..$ start     : int [1:213] 6611730 11803926 14943918 17632256 23801030 26430281 33350134 55215613
##   ..$ end       : int [1:213] 6613481 11805677 14945669 17634007 23802781 26432032 33351885 55217364
##   ..$ White_Adi.: num [1:213] 0.452 1.379 1.636 1.622 0.928 ...
##   ..$ Beige_Adi.: num [1:213] 0.586 1.05 1.591 1.851 1.258 ...
##   ..$ tss_set   : chr [1:213] "white" "white" "white" "white" ...
##  $ not_sig:'data.frame': 23636 obs. of  6 variables:
##   ..$ chr       : chr [1:23636] "chr1" "chr1" "chr1" "chr1" ...
##   ..$ start     : int [1:23636] 29619 495725 499225 499225 499424 501856 503122 503122 514662 517501
##   ..$ end       : int [1:23636] 31370 497476 500976 500976 501175 503607 504873 504873 516413 519252
##   ..$ White_Adi.: num [1:23636] 0.0465 0 0 0 0 ...
##   ..$ Beige_Adi.: num [1:23636] 0.035 0 0 0 0 ...
##   ..$ tss_set   : chr [1:23636] "not_sig" "not_sig" "not_sig" "not_sig" ...
```

```
annot <- do.call(rbind, enrich_tables)
table(annot$tss_set)
```

```
##
##   beige not_sig   white
##     209   23636     213
```

```
head(annot); nrow(annot)
```

```
##          chr    start      end White_Adi. Beige_Adi. tss_set
## beige.1 chr1  6612856  6614607 -0.5965297 -0.2340625   beige
## beige.2 chr1 14922129 14923880  0.8442533  0.3109689   beige
```

```
## beige.3 chr1 23800651 23802402  0.4947430  0.8350845   beige
## beige.4 chr1 45340204 45341955  0.9852788  1.1270003   beige
## beige.5 chr1 55215611 55217362  0.5031132  0.5549283   beige
## beige.6 chr1 87127764 87129515  0.7427286  0.9335383   beige
```

```
## [1] 24058
```

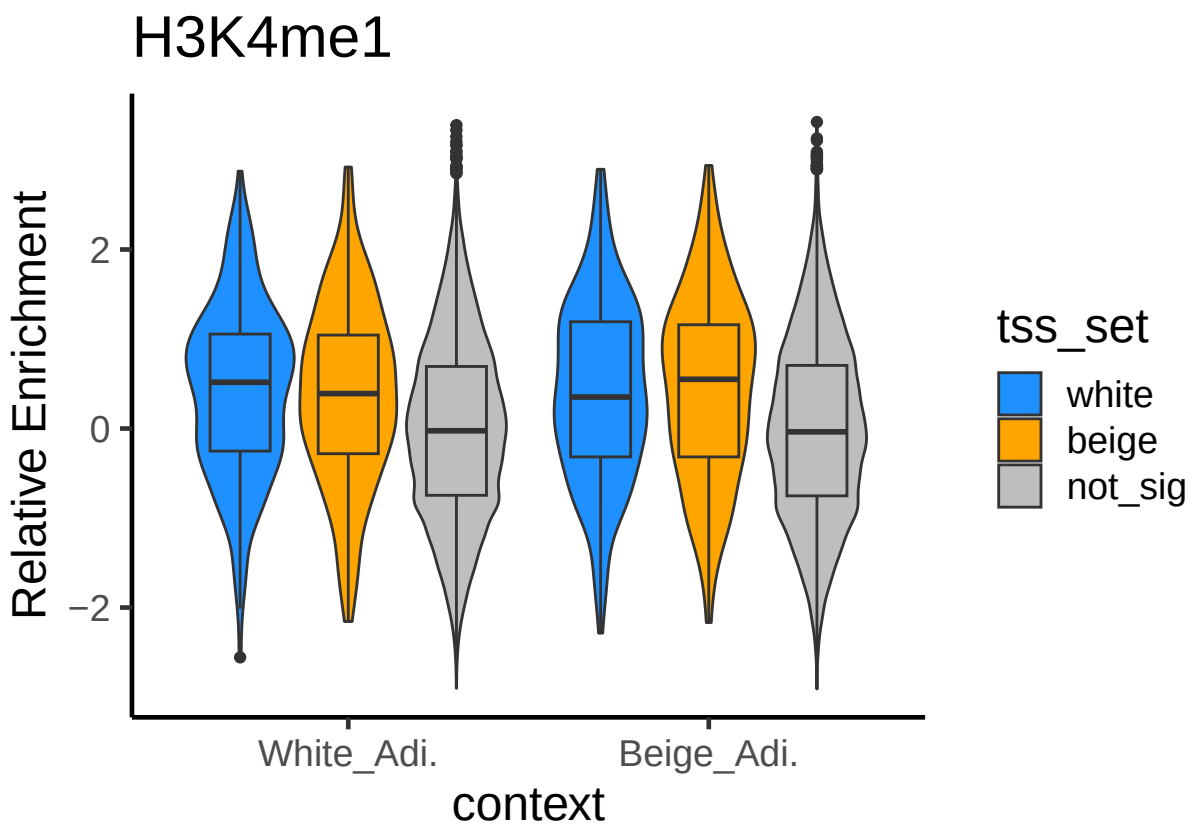
```
long = pivot_longer(annot, grep("Adi.",colnames(annot)), names_to = "context", values_to = "mean_enrichm
long$context = factor(long$context, levels=c("White_Adi.","Beige_Adi."))
long$tss_set = factor(long$tss_set, levels=c("white","beige","not_sig"))
```

```
relative = long %>% group_by(context) %>% mutate(zscore = scale(mean_enrichment), group=paste0(context,
relative$group = factor(relative$group, levels=paste0(rep(levels(relative$context),each=3), levels(rela

ggplot(relative,
       aes(fill=tss_set, y=zscore, x=context, group=group)) + geom_violin() +
    geom_boxplot(fill=NA, width=0.5, position= position_dodge(0.9)) + scale_fill_manual(values= c("dodg
    theme_classic(base_size=18) + ylab("Relative Enrichment") + ggtitle(histone)
```

```
## Warning: Removed 12 rows containing non-finite values (`stat_ydensity()`).
```

```
## Warning: Removed 12 rows containing non-finite values (`stat_boxplot()`).
```



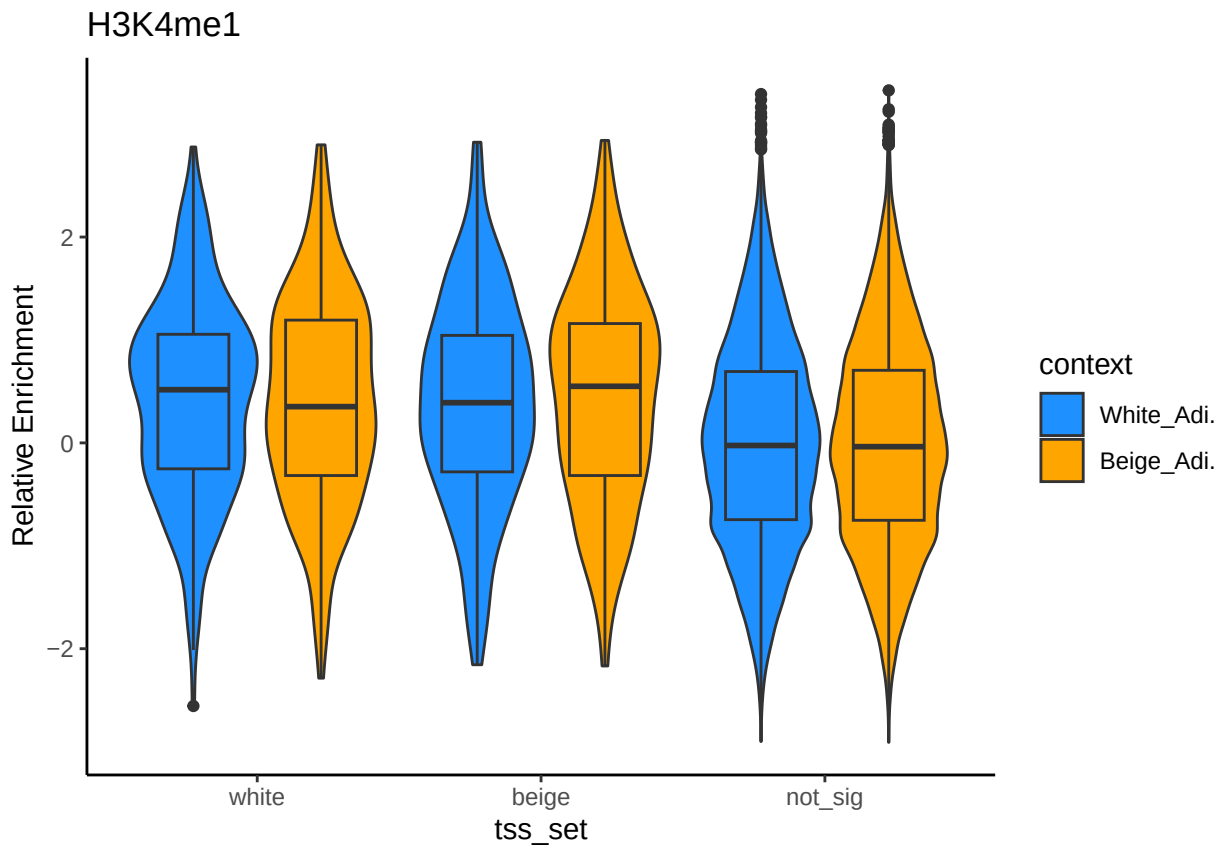
```
ggsave(here("31_leafcutter/histone_profile", histone, paste0(histone, "_upstream_violin_plot.pdf")))
```

```
## Saving 6.5 x 4.5 in image
```

```
## Warning: Removed 12 rows containing non-finite values (‘stat_ydensity()‘).
## Removed 12 rows containing non-finite values (‘stat_boxplot()‘).
```

```
ggplot(relative,
       aes(x=tss_set, y=zscore, fill=context, group=group)) + geom_violin() +
    geom_boxplot(fill=NA, width=0.5, position= position_dodge(0.9))+scale_fill_manual(values= c("dodgerb
  theme_classic() + ylab("Relative Enrichment")+ ggtitle(histone)
```

```
## Warning: Removed 12 rows containing non-finite values (‘stat_ydensity()‘).
## Removed 12 rows containing non-finite values (‘stat_boxplot()‘).
```




```
summary(aov(zscore ~tss_set*context, data=relative))
```

```
##                    Df Sum Sq Mean Sq F value Pr(>F)
## tss_set             2    152   75.81  76.049 <2e-16 ***
## context             1      0    0.00   0.000  1.000
## tss_set:context     2      1    0.30   0.297  0.743
## Residuals       48098  47950    1.00
## ---
## Signif. codes:  0 ’***’ 0.001 ’**’ 0.01 ’*’ 0.05 ’.’ 0.1 ’ ’ 1
## 12 observations deleted due to missingness
```

```
compare_means(zscore ~ tss_set, data=relative, method="wilcox.test", group.by="context")
```

```
## # A tibble: 6 x 9
##   context    .y.    group1 group2         p       p.adj p.format p.signif method
##   <fct>      <chr>  <chr>  <chr>      <dbl>       <dbl> <chr>    <chr>    <chr>
## 1 White_Adi. zscore white  beige   6.91e- 1    1   e+ 0 0.69     ns       Wilco~
## 2 White_Adi. zscore white  not_sig 2.54e-10    1.3 e- 9 2.5e-10  ****     Wilco~
## 3 White_Adi. zscore beige  not_sig 2.89e- 8    8.70e- 8 2.9e-08  ****     Wilco~
## 4 Beige_Adi. zscore white  beige   6.59e- 1    1   e+ 0 0.66     ns       Wilco~
## 5 Beige_Adi. zscore white  not_sig 2.73e- 9    1.10e- 8 2.7e-09  ****     Wilco~
## 6 Beige_Adi. zscore beige  not_sig 1.60e-10    9.60e-10 1.6e-10  ****     Wilco~
```

downstream H3K4me1

```
histone = "H3K4me1"
window = "-500:4000"
tss_sets = c("beige","white","not_sig")

enrich_tables = list()
for (set in tss_sets){
  file = here("31_leafcutter/histone_profile", histone, paste0("window", window), paste0(set,".",window
  annot = read.delim(file, quote="'")
  colnames(annot)[grep("chr", colnames(annot))] = "chr"
  annot$tss_set = set
  enrich_tables[[set]] = annot
}
str(enrich_tables)
```

```
## List of 3
##  $ beige  :'data.frame': 209 obs. of  6 variables:
##   ..$ chr       : chr [1:209] "chr1" "chr1" "chr1" "chr1" ...
##   ..$ start     : int [1:209] 6615356 14924629 23796401 45335954 55211361 87130264 113754062 1137558
##   ..$ end       : int [1:209] 6618857 14928130 23799902 45339455 55214862 87133765 113757563 1137593
##   ..$ White_Adi.: num [1:209] 0.688 1.139 0.495 0.947 0.451 ...
##   ..$ Beige_Adi.: num [1:209] 0.9 0.7 0.759 0.742 0.509 ...
##   ..$ tss_set   : chr [1:209] "beige" "beige" "beige" "beige" ...
##  $ white  :'data.frame': 213 obs. of  6 variables:
##   ..$ chr       : chr [1:213] "chr1" "chr1" "chr1" "chr1" ...
##   ..$ start     : int [1:213] 6614230 11799676 14946418 17634756 23796780 26432781 33345884 55211363
##   ..$ end       : int [1:213] 6617731 11803177 14949919 17638257 23800281 26436282 33349385 55214864
##   ..$ White_Adi.: num [1:213] 0.333 0.826 1.153 0.659 0.518 ...
##   ..$ Beige_Adi.: num [1:213] 0.641 0.696 0.834 0.334 0.786 ...
##   ..$ tss_set   : chr [1:213] "white" "white" "white" "white" ...
##  $ not_sig:'data.frame': 23636 obs. of  6 variables:
##   ..$ chr       : chr [1:23636] "chr1" "chr1" "chr1" "chr1" ...
##   ..$ start     : int [1:23636] 25369 491475 494975 494975 495174 497606 498872 498872 510412 513251
##   ..$ end       : int [1:23636] 28870 494976 498476 498476 498675 501107 502373 502373 513913 516752
##   ..$ White_Adi.: num [1:23636] 0 -0.01584 -0.00101 -0.00101 0 ...
##   ..$ Beige_Adi.: num [1:23636] 0 0.05138 0.00326 0.00326 0 ...
##   ..$ tss_set   : chr [1:23636] "not_sig" "not_sig" "not_sig" "not_sig" ...
```

```
annot <- do.call(rbind, enrich_tables)
table(annot$tss_set)
```

```
##
##   beige not_sig   white
##     209   23636     213
```

```
head(annot); nrow(annot)
```

```
##          chr    start      end White_Adi. Beige_Adi. tss_set
## beige.1 chr1  6615356  6618857  0.6881688  0.8996818   beige
## beige.2 chr1 14924629 14928130  1.1391123  0.6997367   beige
## beige.3 chr1 23796401 23799902  0.4951422  0.7586833   beige
## beige.4 chr1 45335954 45339455  0.9467275  0.7422740   beige
## beige.5 chr1 55211361 55214862  0.4513143  0.5086166   beige
## beige.6 chr1 87130264 87133765  1.0641341  1.0418659   beige
```

```
## [1] 24058
```

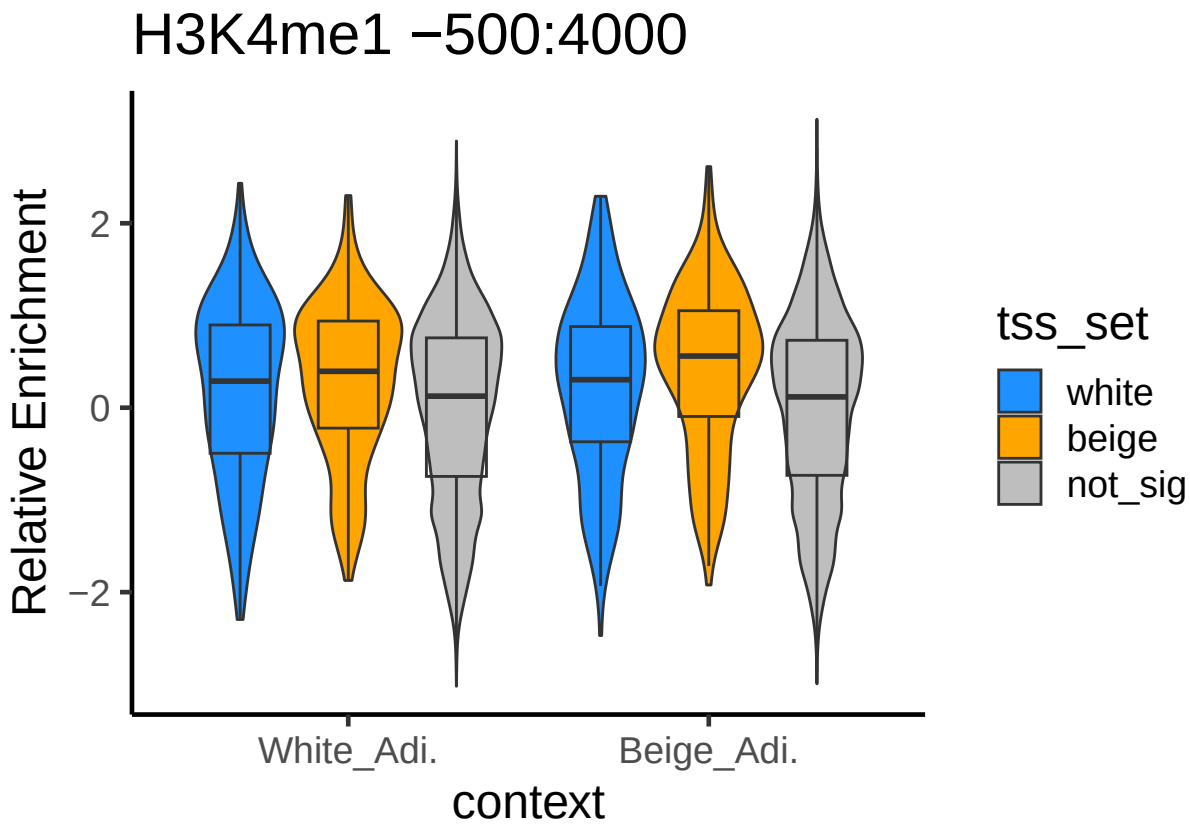
```
long = pivot_longer(annot, grep("Adi.",colnames(annot)), names_to = "context", values_to = "mean_enrichm
long$context = factor(long$context, levels=c("White_Adi.","Beige_Adi."))
long$tss_set = factor(long$tss_set, levels=c("white","beige","not_sig"))
```

```
relative = long %>% group_by(context) %>% mutate(zscore = scale(mean_enrichment), group=paste0(context,
relative$group = factor(relative$group, levels=paste0(rep(levels(relative$context),each=3), levels(rela

ggplot(relative,
       aes(fill=tss_set, y=zscore, x=context, group=group)) + geom_violin() +
    geom_boxplot(fill=NA, width=0.5, position= position_dodge(0.9), outlier.shape = NA) + scale_fill_ma
    theme_classic(base_size=18) + ylab("Relative Enrichment") + ggtitle(paste(histone,window))
```

```
## Warning: Removed 12 rows containing non-finite values (`stat_ydensity()`).
```

```
## Warning: Removed 12 rows containing non-finite values (`stat_boxplot()`).
```



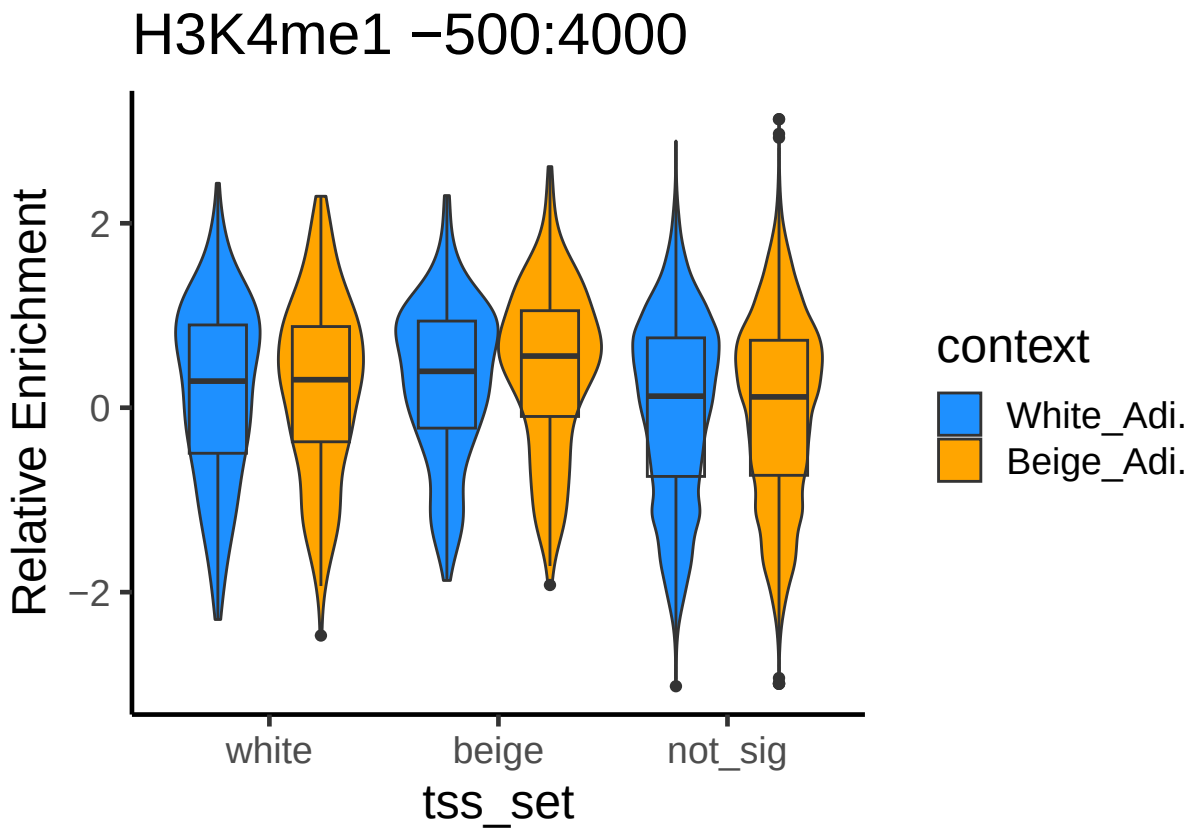

```
ggsave(here("31_leafcutter/histone_profile", histone, paste0(histone, "_downstream_violin_plot.pdf")))
```

```
## Saving 6.5 x 4.5 in image
```

```
## Warning: Removed 12 rows containing non-finite values (`stat_ydensity()`).
## Removed 12 rows containing non-finite values (`stat_boxplot()`).
```

```
ggplot(relative,
       aes(x=tss_set, y=zscore, fill=context, group=group)) + geom_violin() +
    geom_boxplot(fill=NA, width=0.5, position= position_dodge(0.9))+scale_fill_manual(values= c("dodgerb
  theme_classic(base_size=18) + ylab("Relative Enrichment")+ ggtitle(paste(histone, window))
```

```
## Warning: Removed 12 rows containing non-finite values (`stat_ydensity()`).
## Removed 12 rows containing non-finite values (`stat_boxplot()`).
```




```
summary(aov(zscore ~tss_set*context, data=relative))
```

```
##                    Df Sum Sq Mean Sq F value   Pr(>F)
## tss_set             2     71   35.66  35.713 3.17e-16 ***
## context             1      0    0.00   0.000    1.000
## tss_set:context     2      2    1.02   1.023    0.359
## Residuals       48098  48029    1.00
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
## 12 observations deleted due to missingness
```

```
compare_means(zscore ~ tss_set, data=relative, method="wilcox.test", group.by="context")
```

```
## # A tibble: 6 x 9
##   context    .y.    group1 group2         p       p.adj p.format p.signif method
##   <fct>      <chr>  <chr>  <chr>      <dbl>       <dbl> <chr>    <chr>    <chr>
## 1 White_Adi. zscore white  beige   3.59e- 1     3.6 e-1 0.3588   ns       Wilco~
## 2 White_Adi. zscore white  not_sig 7.03e- 3     2.1 e-2 0.0070   **       Wilco~
## 3 White_Adi. zscore beige  not_sig 3.76e- 5     1.9 e-4 3.8e-05  ****     Wilco~
## 4 Beige_Adi. zscore white  beige   3.41e- 2     6.8 e-2 0.0341   *        Wilco~
## 5 Beige_Adi. zscore white  not_sig 1.23e- 3     4.9 e-3 0.0012   **       Wilco~
## 6 Beige_Adi. zscore beige  not_sig 7.52e-10     4.50e-9 7.5e-10  ****     Wilco~
```

H3K27me3

```
histone = "H3K27me3"
window = "2000:2000"
tss_sets = c("beige","white","not_sig")

enrich_tables = list()
for (set in tss_sets){
  file = here("31_leafcutter/histone_profile", histone, paste0("window", window), paste0(set,".",window
  annot = read.delim(file, quote="'")
  colnames(annot)[grep("chr", colnames(annot))] = "chr"
  annot$tss_set = set
  enrich_tables[[set]] = annot
}
str(enrich_tables)
```

```
## List of 3
##  $ beige  :'data.frame': 209 obs. of  6 variables:
##   ..$ chr       : chr [1:209] "chr1" "chr1" "chr1" "chr1" ...
##   ..$ start     : int [1:209] 6612856 14922129 23798401 45337954 55213361 87127764 113756062 1137578
##   ..$ end       : int [1:209] 6616857 14926130 23802402 45341955 55217362 87131765 113760063 1137618
##   ..$ White_Adi.: num [1:209] -0.916 -0.425 -0.891 -0.97 -1.11 ...
##   ..$ Beige_Adi.: num [1:209] -0.737 -0.452 -0.821 -0.881 -0.887 ...
##   ..$ tss_set   : chr [1:209] "beige" "beige" "beige" "beige" ...
##  $ white  :'data.frame': 213 obs. of  6 variables:
##   ..$ chr       : chr [1:213] "chr1" "chr1" "chr1" "chr1" ...
##   ..$ start     : int [1:213] 6611730 11801676 14943918 17632256 23798780 26430281 33347884 55213363
##   ..$ end       : int [1:213] 6615731 11805677 14947919 17636257 23802781 26434282 33351885 55217364
##   ..$ White_Adi.: num [1:213] -0.807 -0.839 -0.577 -0.531 -0.854 ...
##   ..$ Beige_Adi.: num [1:213] -0.713 -1.331 -0.685 -0.478 -0.821 ...
##   ..$ tss_set   : chr [1:213] "white" "white" "white" "white" ...
##  $ not_sig:'data.frame': 23636 obs. of  6 variables:
##   ..$ chr       : chr [1:23636] "chr1" "chr1" "chr1" "chr1" ...
##   ..$ start     : int [1:23636] 27369 493475 496975 496975 497174 499606 500872 500872 512412 515251
##   ..$ end       : int [1:23636] 31370 497476 500976 500976 501175 503607 504873 504873 516413 519252
##   ..$ White_Adi.: num [1:23636] 0 -0.0147 0 0 0 ...
##   ..$ Beige_Adi.: num [1:23636] -0.00309 0 0 0 0 ...
##   ..$ tss_set   : chr [1:23636] "not_sig" "not_sig" "not_sig" "not_sig" ...
```

```
annot <- do.call(rbind, enrich_tables)
table(annot$tss_set)
```

```
##
##   beige not_sig   white
##     209   23636     213
```

```
head(annot); nrow(annot)
```

```
##          chr    start      end White_Adi. Beige_Adi. tss_set
## beige.1 chr1  6612856  6616857 -0.9155564 -0.7369399   beige
## beige.2 chr1 14922129 14926130 -0.4250593 -0.4520405   beige
```

```
## beige.3 chr1 23798401 23802402 -0.8911719 -0.8212295   beige
## beige.4 chr1 45337954 45341955 -0.9700809 -0.8805992   beige
## beige.5 chr1 55213361 55217362 -1.1103718 -0.8866640   beige
## beige.6 chr1 87127764 87131765 -0.6904183 -0.5758283   beige
```

```
## [1] 24058
```

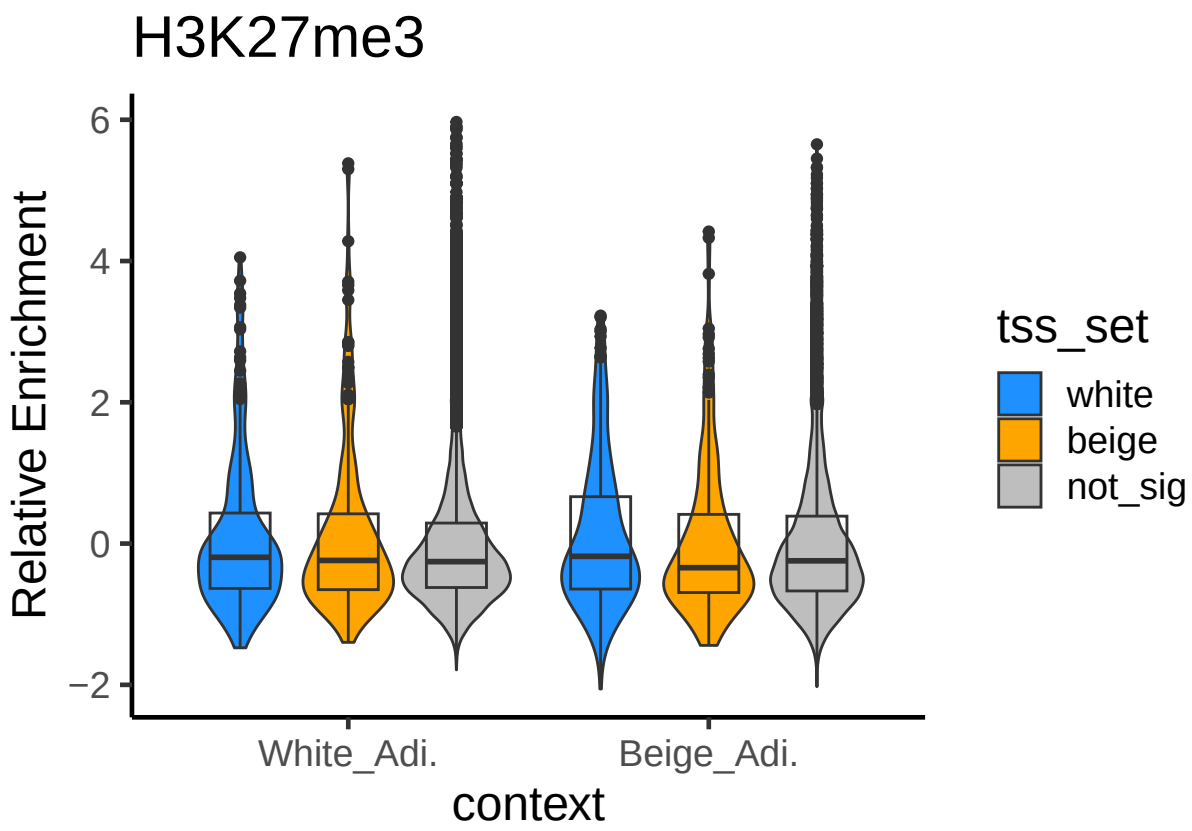
```
long = pivot_longer(annot, grep("Adi.",colnames(annot)), names_to = "context", values_to = "mean_enrichm
long$context = factor(long$context, levels=c("White_Adi.","Beige_Adi."))
long$tss_set = factor(long$tss_set, levels=c("white","beige","not_sig"))
```

```
relative = long %>% group_by(context) %>% mutate(zscore = scale(mean_enrichment), group=paste0(context,
relative$group = factor(relative$group, levels=paste0(rep(levels(relative$context),each=3), levels(rela

ggplot(relative,
       aes(fill=tss_set, y=zscore, x=context, group=group)) + geom_violin() +
    geom_boxplot(fill=NA, width=0.5, position= position_dodge(0.9)) + scale_fill_manual(values= c("dodg
    theme_classic(base_size=18) + ylab("Relative Enrichment") + ggtitle(histone)
```

```
## Warning: Removed 12 rows containing non-finite values (`stat_ydensity()`).
```

```
## Warning: Removed 12 rows containing non-finite values (`stat_boxplot()`).
```



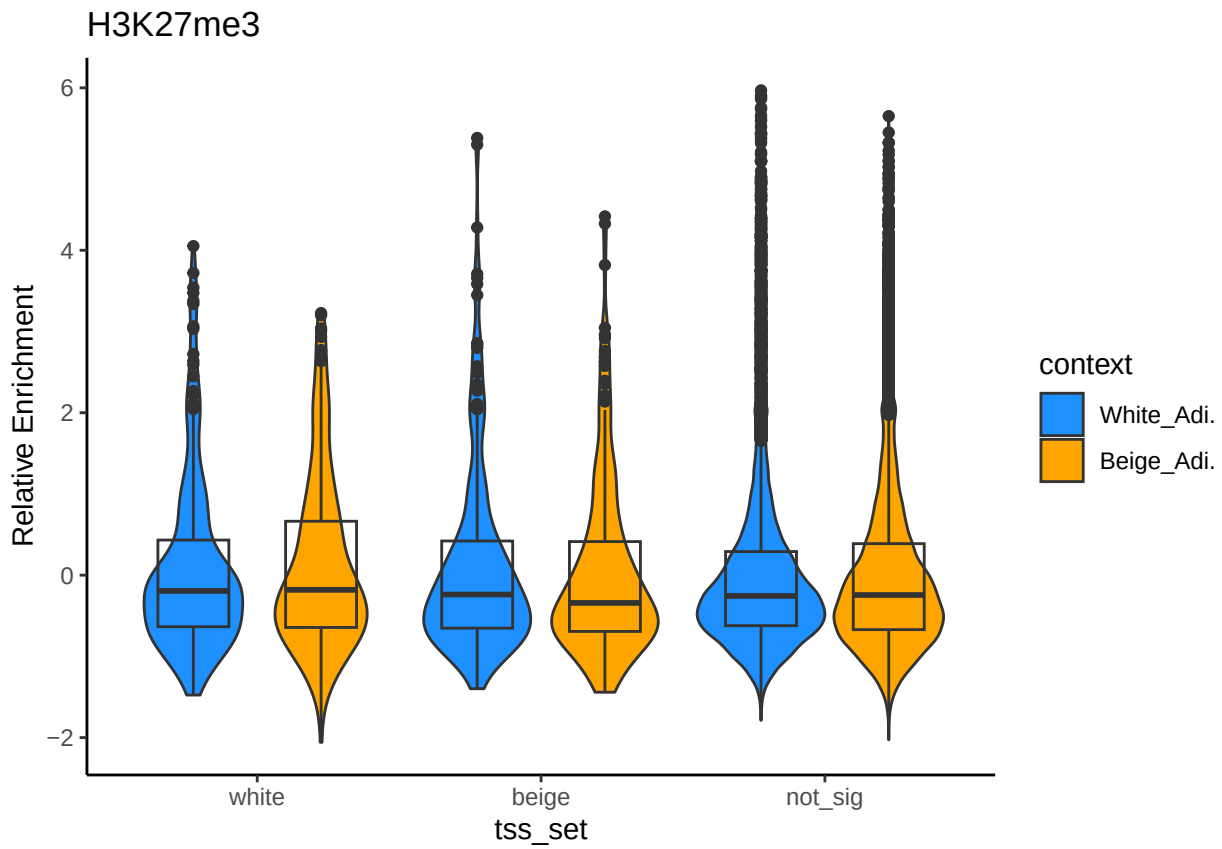
```
ggsave(here("31_leafcutter/histone_profile", histone, paste0(histone, "_violin_plot.pdf")))
```

```
## Saving 6.5 x 4.5 in image
```

```
## Warning: Removed 12 rows containing non-finite values (‘stat_ydensity()‘).
## Removed 12 rows containing non-finite values (‘stat_boxplot()‘).
```

```
ggplot(relative,
       aes(x=tss_set, y=zscore, fill=context, group=group)) + geom_violin() +
    geom_boxplot(fill=NA, width=0.5, position= position_dodge(0.9))+scale_fill_manual(values= c("dodgerb
  theme_classic() + ylab("Relative Enrichment")+ ggtitle(histone)
```

```
## Warning: Removed 12 rows containing non-finite values (‘stat_ydensity()‘).
## Removed 12 rows containing non-finite values (‘stat_boxplot()‘).
```




```
summary(aov(zscore ~tss_set*context, data=relative))
```

```
##                    Df Sum Sq Mean Sq F value Pr(>F)
## tss_set             2      9   4.321   4.321 0.0133 *
## context             1      0   0.000   0.000 1.0000
## tss_set:context     2      1   0.521   0.521 0.5940
## Residuals       48098  48092   1.000
## ---
## Signif. codes:  0 ’***’ 0.001 ’**’ 0.01 ’*’ 0.05 ’.’ 0.1 ’ ’ 1
## 12 observations deleted due to missingness
```

```
compare_means(zscore ~ tss_set, data=relative, method="wilcox.test", group.by="context")
```

```
## # A tibble: 6 x 9
##   context    .y.    group1 group2      p p.adj p.format p.signif method
##   <fct>      <chr>  <chr>  <chr>   <dbl> <dbl> <chr>    <chr>    <chr>
## 1 White_Adi. zscore white  beige   0.916  1    0.92     ns       Wilcoxon
## 2 White_Adi. zscore white  not_sig 0.361  1    0.36     ns       Wilcoxon
## 3 White_Adi. zscore beige  not_sig 0.511  1    0.51     ns       Wilcoxon
## 4 Beige_Adi. zscore white  beige   0.213  1    0.21     ns       Wilcoxon
## 5 Beige_Adi. zscore white  not_sig 0.112  0.67 0.11     ns       Wilcoxon
## 6 Beige_Adi. zscore beige  not_sig 0.801  1    0.80     ns       Wilcoxon
```