PPARG bound promoters

2023-11-16

```r
library(ggplot2)
library(dplyr)
```

```
##
## Attaching package: 'dplyr'
```

```
## The following objects are masked from 'package:stats':
##
##     filter, lag
```

```
## The following objects are masked from 'package:base':
##
##     intersect, setdiff, setequal, union
```

```r
library(tidyr)
library(here); i_am("R/Figure3/Fig3E_PPARG_bound_promoters.Rmd")
```

```
## here() starts at /projects/imb-pkbphil/sp/rnaseq/six_donor_trans/splicing_paper
```

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```

```r
figs = here("R/plots")
LEAF =  here("31_leafcutter/promoter_binding/intersects")
```

```r
pparg_perc = read.delim(here(LEAF, "summary.txt"), header=F, sep=" ", col.names= c("bound_TSSs","interse
pparg_perc = mutate(pparg_perc, tss_set=gsub("--.*", "", intersect), pparg_set = gsub(".*--","", gsub("
#head(pparg_perc)
total_tsss = read.delim(here(LEAF, "../line_summary.txt"), header=F, sep=" ", col.names= c("total_TSSs"
total_tsss$tss_set = gsub(".bed","",total_tsss$bed_file)
head(total_tsss)
```
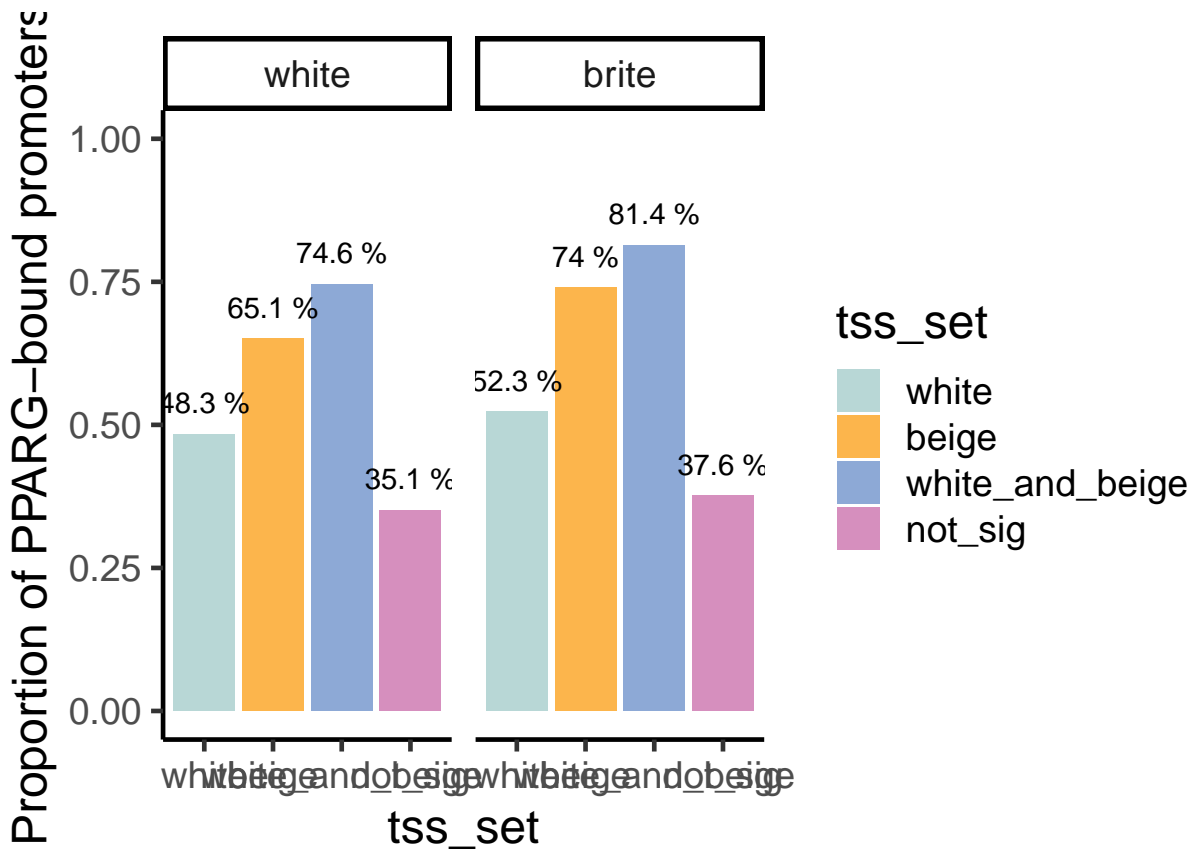
```
##   total_TSSs                          bed_file
## 1        146      lc_3db_beige_promoters.uniq.bed
## 2        151      lc_3db_white_promoters.uniq.bed
## 3      12326  lc_3db_not_sig_promoters.merged.bed
## 4         59 white_and_beige_promoters.merged.bed
## 5      12682                                total
##                            tss_set
## 1      lc_3db_beige_promoters.uniq
## 2      lc_3db_white_promoters.uniq
## 3  lc_3db_not_sig_promoters.merged
## 4 white_and_beige_promoters.merged
## 5                            total
```

```r
pparg_perc = merge(pparg_perc, total_tsss, by="tss_set")
pparg_perc = mutate(pparg_perc, fraction=bound_TSSs/total_TSSs,
                    tss_set = gsub("lc_3db_", "",gsub( "_promoters\\.(uniq|merged)", "",tss_set)),
                    pparg_set = gsub("PPARgamma_hMADS_", "", pparg_set))
head(pparg_perc)
```

```
##   tss_set bound_TSSs                                              intersect
## 1   beige        108      lc_3db_beige_promoters.uniq--PPARgamma_hMADS_brite.bed
## 2   beige         95      lc_3db_beige_promoters.uniq--PPARgamma_hMADS_white.bed
## 3 not_sig       4640 lc_3db_not_sig_promoters.merged--PPARgamma_hMADS_brite.bed
## 4 not_sig       4330 lc_3db_not_sig_promoters.merged--PPARgamma_hMADS_white.bed
## 5   white         79      lc_3db_white_promoters.uniq--PPARgamma_hMADS_brite.bed
## 6   white         73      lc_3db_white_promoters.uniq--PPARgamma_hMADS_white.bed
##   pparg_set total_TSSs                          bed_file  fraction
## 1     brite        146      lc_3db_beige_promoters.uniq.bed 0.7397260
## 2     white        146      lc_3db_beige_promoters.uniq.bed 0.6506849
## 3     brite      12326 lc_3db_not_sig_promoters.merged.bed 0.3764400
## 4     white      12326 lc_3db_not_sig_promoters.merged.bed 0.3512900
## 5     brite        151      lc_3db_white_promoters.uniq.bed 0.5231788
## 6     white        151      lc_3db_white_promoters.uniq.bed 0.4834437
```

```r
pparg_perc$tss_set = factor(pparg_perc$tss_set, levels=c("white","beige","white_and_beige","not_sig"))
pparg_perc$pparg_set = factor(pparg_perc$pparg_set, levels=c("white","brite"))
ggplot(filter(pparg_perc,pparg_set!="total"), aes(x=tss_set, y=fraction, fill=tss_set)) + geom_bar(stat
  coord_cartesian(ylim=c(0,1)) + theme_classic(base_size=18) +
  geom_text(aes(label=paste(round(fraction*100, 1), "%")),
            vjust=-1) + scale_fill_manual(values=c("#B8D7D6","#FCB54C","#8DA9D6","#D68FBE")) +
  labs(y="Proportion of PPARG-bound promoters") + facet_wrap(~pparg_set)
```

```
ggsave(file.path(figs,"PPARG_promoter_fraction.pdf"), width = 10, height=5)
```