

# main

September 22, 2021

## 1 Clustered dotplots

```
[1]: library(ggplot2)
library(tidyverse)
```

```
Attaching packages: tidyverse
1.3.1
```

```
tibble 3.1.4    dplyr 1.0.7
tidyr  1.1.3    stringr 1.4.0
readr  2.0.1    forcats 0.5.1
purrr  0.3.4
```

### Conflicts

```
tidyverse_conflicts()
dplyr::filter() masks stats::filter()
dplyr::lag()    masks stats::lag()
```

```
[2]: save_plot <- function(p, fn, w, h){
  for(ext in c(".pdf", ".png", ".svg")){
    ggsave(filename=paste0(fn,ext), plot=p, width=w, height=h)
  }
}
```

### 1.1 Get data

```
[3]: dt <- data.table::fread("../_m/
  ↳clincial_phenotypes_enrichment_analysis_3brainRegions.tsv")
dt %>% head(2)
```

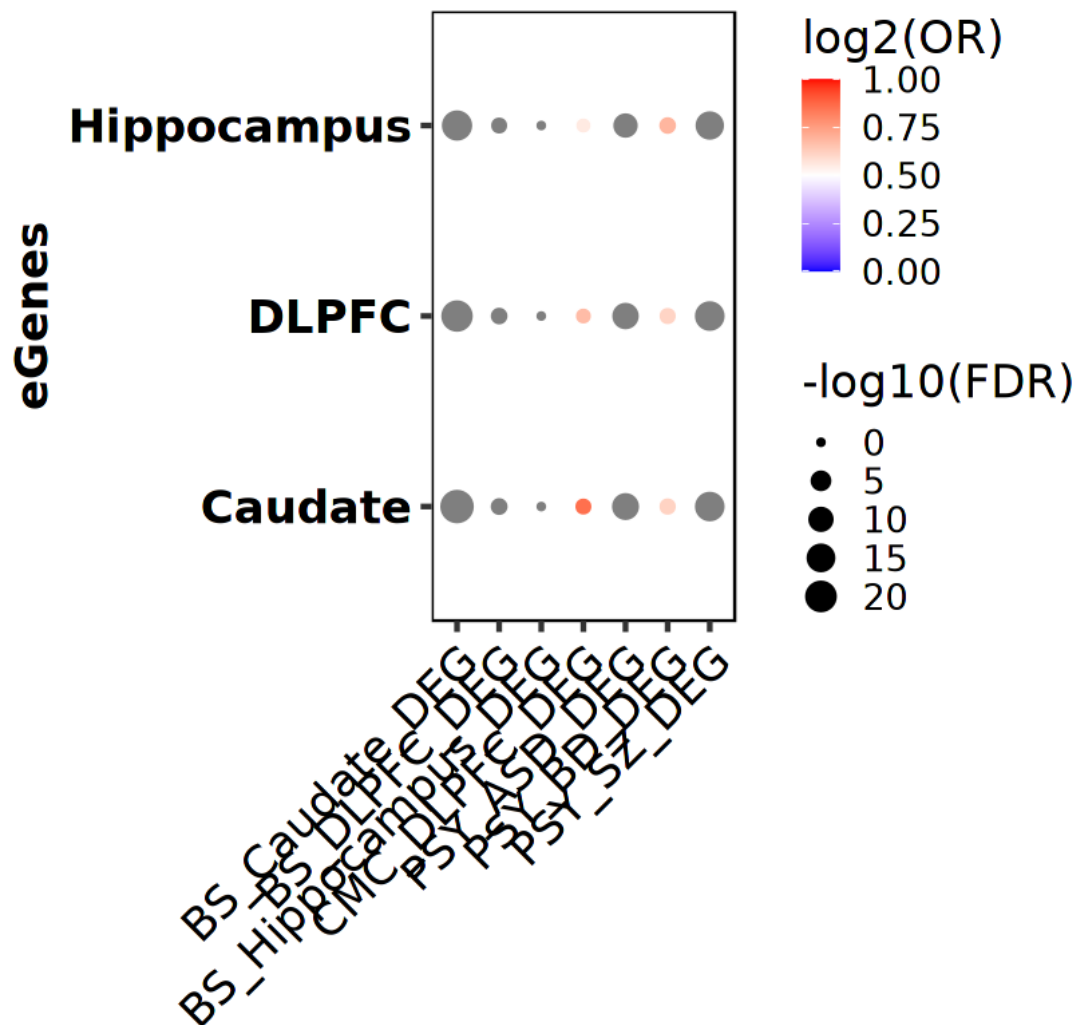
	Tissue	Comparison	OR	P-value	FDR
	<chr>	<chr>	<dbl>	<dbl>	<dbl>
A data.table: 2 × 5	Caudate	BS_Caudate_DEG	2.756170	1.392999e-25	5.432696e-24
	Caudate	BS_DLPFC_DEG	2.349303	4.310847e-03	8.848580e-03

```
[4]: dotplot <- dt %>% filter(str_detect(Comparison, "DEG")) %>%
  mutate(`-log10(FDR)` = -log10(FDR), `log2(OR)` = log2(OR)) %>%
```

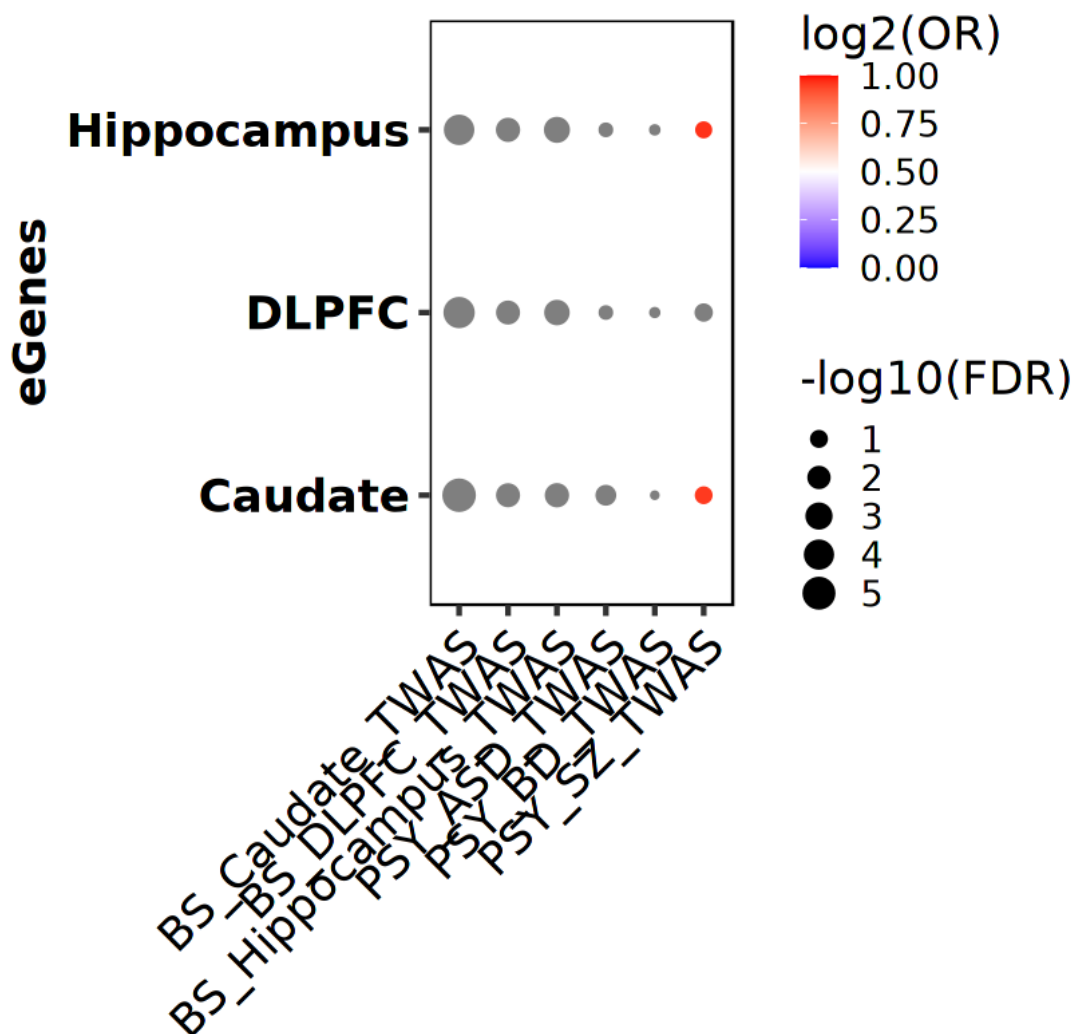
```

ggplot(aes(x=`Comparison`, y=Tissue, color=`log2(OR)`,
           size=`-log10(FDR)`)) +
geom_point() + ylab('eGenes') + xlab('') +
scale_color_gradient2(midpoint = 0.5, low = "blue", mid = "white",
                      high = "red", space = "Lab", limits=c(0,1)) +
ggpubr::theme_pubr(base_size=20, border=TRUE) +
theme(axis.text.x = element_text(angle = 45, hjust=1),
      legend.position="right",
      axis.title=element_text(face="bold"),
      axis.text.y=element_text(face="bold"))
save_plot(dotplot, "dotplot_enrichment_deg", 10, 7)
dotplot

```



```
[5]: dotplot <- dt %>% filter(str_detect(Comparison, "TWAS")) %>%
  mutate(`-log10(FDR)` = -log10(FDR), `log2(OR)` = log2(OR)) %>%
  ggplot(aes(x=`Comparison`, y=Tissue, color=`log2(OR)`,
    size=`-log10(FDR)`)) +
  geom_point() + ylab('eGenes') + xlab('') +
  scale_color_gradient2(midpoint = 0.5, low = "blue", mid = "white",
    high = "red", space = "Lab", limits=c(0,1)) +
  #scale_size_continuous(limits=c(0, 10)) +
  ggpubr::theme_pubr(base_size=20, border=TRUE) +
  theme(axis.text.x = element_text(angle = 45, hjust=1),
    legend.position="right",
    axis.title=element_text(face="bold"),
    axis.text.y=element_text(face="bold"))
save_plot(dotplot, "dotplot_enrichment_twas", 9, 7)
dotplot
```



## 1.2 Reproducibility Information

```
[6]: Sys.time()
proc.time()
options(width = 120)
sessioninfo::session_info()
```

```
[1] "2021-09-22 08:44:11 EDT"
```

```
      user system elapsed
4.992   0.158   5.545
```

Session info

setting value

version R version 4.0.3 (2020-10-10)

os Arch Linux

system x86\_64, linux-gnu

ui X11

language (EN)

collate en\_US.UTF-8

ctype en\_US.UTF-8

tz America/New\_York

date 2021-09-22

Packages

package	* version	date	lib	source
abind	1.4-5	2016-07-21	[1]	CRAN (R 4.0.2)
assertthat	0.2.1	2019-03-21	[1]	CRAN (R 4.0.2)
backports	1.2.1	2020-12-09	[1]	CRAN (R 4.0.2)
base64enc	0.1-3	2015-07-28	[1]	CRAN (R 4.0.2)
broom	0.7.9	2021-07-27	[1]	CRAN (R 4.0.3)
Cairo	1.5-12.2	2020-07-07	[1]	CRAN (R 4.0.2)
car	3.0-11	2021-06-27	[1]	CRAN (R 4.0.3)
carData	3.0-4	2020-05-22	[1]	CRAN (R 4.0.2)
cellranger	1.1.0	2016-07-27	[1]	CRAN (R 4.0.2)
cli	3.0.1	2021-07-17	[1]	CRAN (R 4.0.3)
colorspace	2.0-2	2021-06-24	[1]	CRAN (R 4.0.3)
crayon	1.4.1	2021-02-08	[1]	CRAN (R 4.0.3)
curl	4.3.2	2021-06-23	[1]	CRAN (R 4.0.3)
data.table	1.14.0	2021-02-21	[1]	CRAN (R 4.0.3)
DBI	1.1.1	2021-01-15	[1]	CRAN (R 4.0.2)
dbplyr	2.1.1	2021-04-06	[1]	CRAN (R 4.0.3)
digest	0.6.27	2020-10-24	[1]	CRAN (R 4.0.2)
dplyr	* 1.0.7	2021-06-18	[1]	CRAN (R 4.0.3)
ellipsis	0.3.2	2021-04-29	[1]	CRAN (R 4.0.3)
evaluate	0.14	2019-05-28	[1]	CRAN (R 4.0.2)

fansi	0.5.0	2021-05-25	[1]	CRAN	(R 4.0.3)
farver	2.1.0	2021-02-28	[1]	CRAN	(R 4.0.3)
fastmap	1.1.0	2021-01-25	[1]	CRAN	(R 4.0.2)
forcats	* 0.5.1	2021-01-27	[1]	CRAN	(R 4.0.2)
foreign	0.8-80	2020-05-24	[2]	CRAN	(R 4.0.3)
fs	1.5.0	2020-07-31	[1]	CRAN	(R 4.0.2)
generics	0.1.0	2020-10-31	[1]	CRAN	(R 4.0.2)
ggplot2	* 3.3.5	2021-06-25	[1]	CRAN	(R 4.0.3)
ggpubr	0.4.0	2020-06-27	[1]	CRAN	(R 4.0.2)
ggsignif	0.6.2	2021-06-14	[1]	CRAN	(R 4.0.3)
glue	1.4.2	2020-08-27	[1]	CRAN	(R 4.0.2)
gtable	0.3.0	2019-03-25	[1]	CRAN	(R 4.0.2)
haven	2.4.3	2021-08-04	[1]	CRAN	(R 4.0.3)
hms	1.1.0	2021-05-17	[1]	CRAN	(R 4.0.3)
htmltools	0.5.2	2021-08-25	[1]	CRAN	(R 4.0.3)
httr	1.4.2	2020-07-20	[1]	CRAN	(R 4.0.2)
IRdisplay	1.0	2021-01-20	[1]	CRAN	(R 4.0.2)
IRkernel	1.2	2021-05-11	[1]	CRAN	(R 4.0.3)
jsonlite	1.7.2	2020-12-09	[1]	CRAN	(R 4.0.2)
labeling	0.4.2	2020-10-20	[1]	CRAN	(R 4.0.2)
lifecycle	1.0.0	2021-02-15	[1]	CRAN	(R 4.0.3)
lubridate	1.7.10	2021-02-26	[1]	CRAN	(R 4.0.3)
magrittr	2.0.1	2020-11-17	[1]	CRAN	(R 4.0.2)
modelr	0.1.8	2020-05-19	[1]	CRAN	(R 4.0.2)
munsell	0.5.0	2018-06-12	[1]	CRAN	(R 4.0.2)
openxlsx	4.2.4	2021-06-16	[1]	CRAN	(R 4.0.3)
pbdZMQ	0.3-5	2021-02-10	[1]	CRAN	(R 4.0.3)
pillar	1.6.2	2021-07-29	[1]	CRAN	(R 4.0.3)
pkgconfig	2.0.3	2019-09-22	[1]	CRAN	(R 4.0.2)
purrr	* 0.3.4	2020-04-17	[1]	CRAN	(R 4.0.2)
R6	2.5.1	2021-08-19	[1]	CRAN	(R 4.0.3)
Rcpp	1.0.7	2021-07-07	[1]	CRAN	(R 4.0.3)
readr	* 2.0.1	2021-08-10	[1]	CRAN	(R 4.0.3)
readxl	1.3.1	2019-03-13	[1]	CRAN	(R 4.0.2)
repr	1.1.3	2021-01-21	[1]	CRAN	(R 4.0.2)
reprex	2.0.1	2021-08-05	[1]	CRAN	(R 4.0.3)
rio	0.5.27	2021-06-21	[1]	CRAN	(R 4.0.3)
rlang	0.4.11	2021-04-30	[1]	CRAN	(R 4.0.3)
rstatix	0.7.0	2021-02-13	[1]	CRAN	(R 4.0.3)
rstudioapi	0.13	2020-11-12	[1]	CRAN	(R 4.0.2)
rvest	1.0.1	2021-07-26	[1]	CRAN	(R 4.0.3)
scales	1.1.1	2020-05-11	[1]	CRAN	(R 4.0.2)
sessioninfo	1.1.1	2018-11-05	[1]	CRAN	(R 4.0.2)
stringi	1.7.4	2021-08-25	[1]	CRAN	(R 4.0.3)
stringr	* 1.4.0	2019-02-10	[1]	CRAN	(R 4.0.2)
svglite	2.0.0	2021-02-20	[1]	CRAN	(R 4.0.3)
systemfonts	1.0.2	2021-05-11	[1]	CRAN	(R 4.0.3)
tibble	* 3.1.4	2021-08-25	[1]	CRAN	(R 4.0.3)

tidyr	* 1.1.3	2021-03-03	[1]	CRAN	(R 4.0.3)
tidyselect	1.1.1	2021-04-30	[1]	CRAN	(R 4.0.3)
tidyverse	* 1.3.1	2021-04-15	[1]	CRAN	(R 4.0.3)
tzdb	0.1.2	2021-07-20	[1]	CRAN	(R 4.0.3)
utf8	1.2.2	2021-07-24	[1]	CRAN	(R 4.0.3)
uuid	0.1-4	2020-02-26	[1]	CRAN	(R 4.0.2)
vctrs	0.3.8	2021-04-29	[1]	CRAN	(R 4.0.3)
withr	2.4.2	2021-04-18	[1]	CRAN	(R 4.0.3)
xml2	1.3.2	2020-04-23	[1]	CRAN	(R 4.0.2)
zip	2.2.0	2021-05-31	[1]	CRAN	(R 4.0.3)

[1] /home/jbenja13/R/x86\_64-pc-linux-gnu-library/4.0

[2] /usr/lib/R/library