Differential Expression Analysis: Volcano Plots

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June 10, 2019

## Volcano Plots

library(ggplot2)  
library(calibrate)  
library(scales)  
library(ggrepel)  
library(plyr)  
  
DE\_res <- read.delim("htseq\_cno\_vehicle\_dyp.txt", sep="\t", header=T)  
mutateddf <- mutate(DE\_res, sig=ifelse(DE\_res$P.Value<0.05, "P.Value<0.05", "Not Sig")) #Will have different colors depending on significance  
input <- cbind(gene=rownames(mutateddf), mutateddf) #convert the rownames to a column  
inputs <- input[order(input$P.Value),]   
  
tiff("Volcano\_DEGs\_H2O(CNO).tiff", units="px", width=8000, height=8000, res=500)  
  
par(mar = c(9, 9, 9, 5))  
volc = ggplot(input, aes(logFC, -log10(P.Value))) + #volcanoplot with log2Foldchange versus pvalue  
 geom\_point(aes(col=sig)) + #add points colored by significance  
 scale\_color\_manual(values=c("black", "blue")) +   
 theme\_bw() +  
 xlim(-4,4) +  
 ylim(0,5.5) +  
 theme(plot.title=element\_text(size=30, face="bold"),  
 axis.text=element\_text(size=20, face="bold"),  
 axis.title=element\_text(size=25, face="bold"),  
 axis.title.y=element\_text(margin = margin(t = 0, r = 20, b = 0, l = 0)),  
 axis.title.x=element\_text(margin = margin(t = 20, r = 20, b = 20, l = 20)),  
 legend.text=element\_text(size=20),  
 legend.title=element\_text( size=20)) +  
 ggtitle("DEGs H2O(CNO) vs H2O(VEH)") #e.g. 'Volcanoplot DESeq2'  
volc + geom\_text\_repel(data=head(inputs, 20), aes(label=gene), size=10) #adding text for the top 20 genes  
  
ggsave("Volcanoplot.jpeg", device="jpeg") #In case you want to easily save to disk  
  
dev.off()