Island 150 gsea analysis

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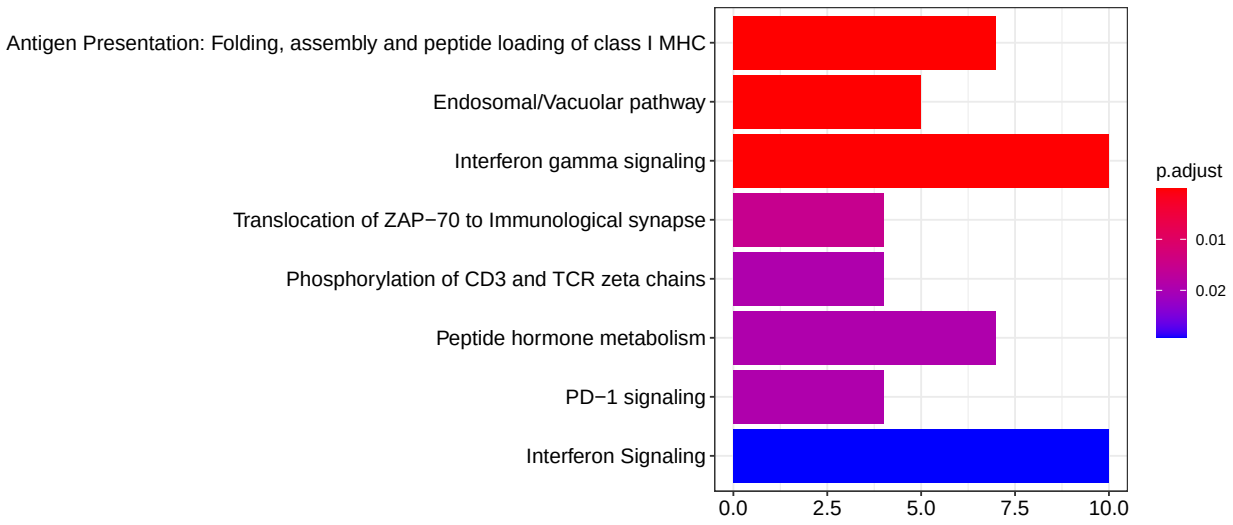
14 July, 2020

1000 genes that have high variability in tumor and normal

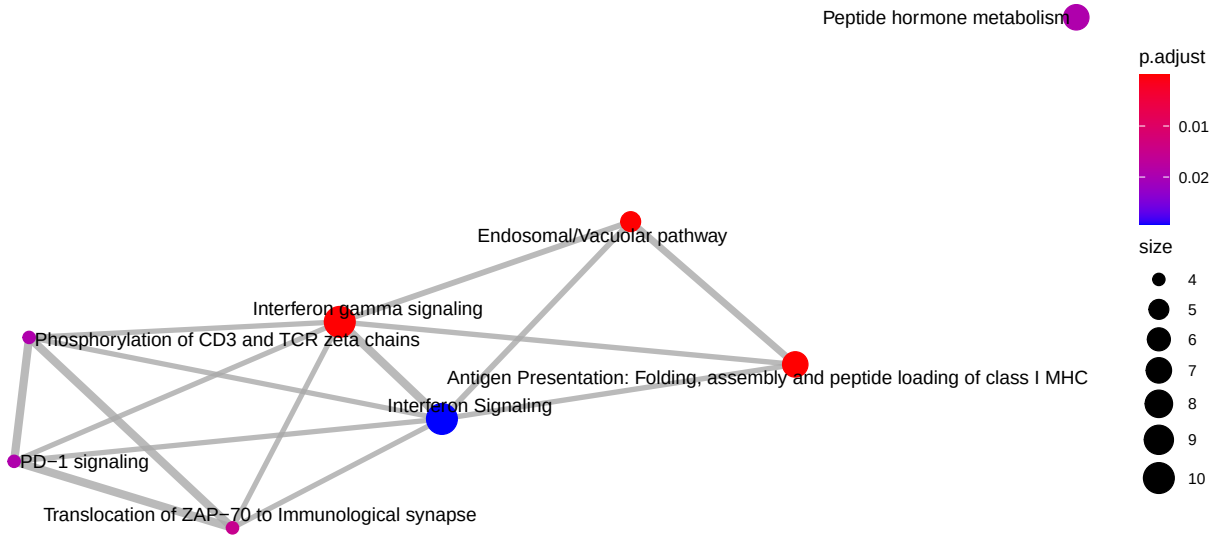
```
as.data.frame(island150_gsea_upper_right) %>%
  select(ID, Description) %>%
  as_tibble()
```

```
## # A tibble: 8 x 2
##   ID           Description
##   <chr>        <chr>
## 1 R-HSA-983170 Antigen Presentation: Folding, assembly and peptide loading of c~
## 2 R-HSA-12369~ Endosomal/Vacuolar pathway
## 3 R-HSA-877300 Interferon gamma signaling
## 4 R-HSA-202430 Translocation of ZAP-70 to Immunological synapse
## 5 R-HSA-202427 Phosphorylation of CD3 and TCR zeta chains
## 6 R-HSA-29807~ Peptide hormone metabolism
## 7 R-HSA-389948 PD-1 signaling
## 8 R-HSA-913531 Interferon Signaling
```

```
barplot(island150_gsea_upper_right)
```



```
emapplot(island150_gsea_upper_right)
```

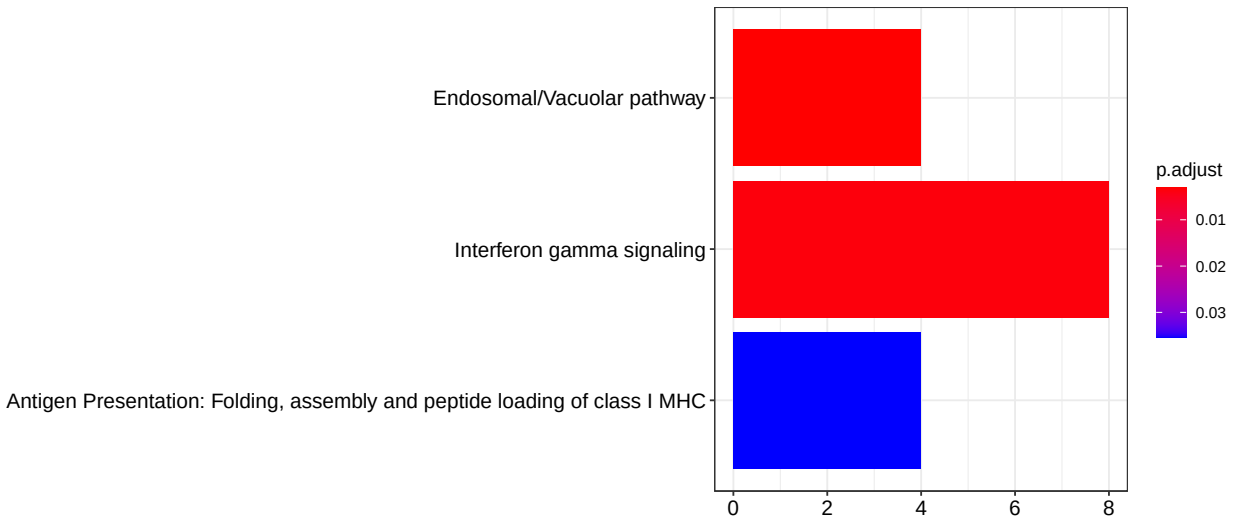


1000 genes that have low variability in tumor and normal

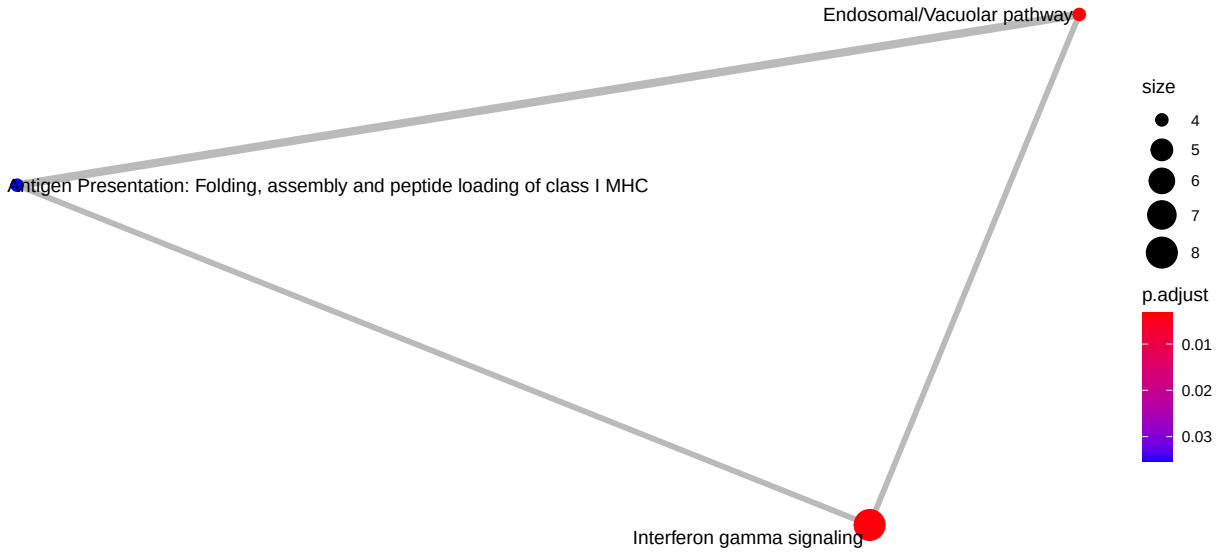
```
as.data.frame(island150_gsea_upper_left) %>%
  select(ID, Description) %>%
  as_tibble()
```

```
## # A tibble: 3 x 2
##   ID           Description
##   <chr>        <chr>
## 1 R-HSA-12369~ Endosomal/Vacuolar pathway
## 2 R-HSA-877300 Interferon gamma signaling
## 3 R-HSA-983170 Antigen Presentation: Folding, assembly and peptide loading of c~
```

```
barplot(island150_gsea_upper_left)
```




```
emapplot(island150_gsea_upper_left)
```



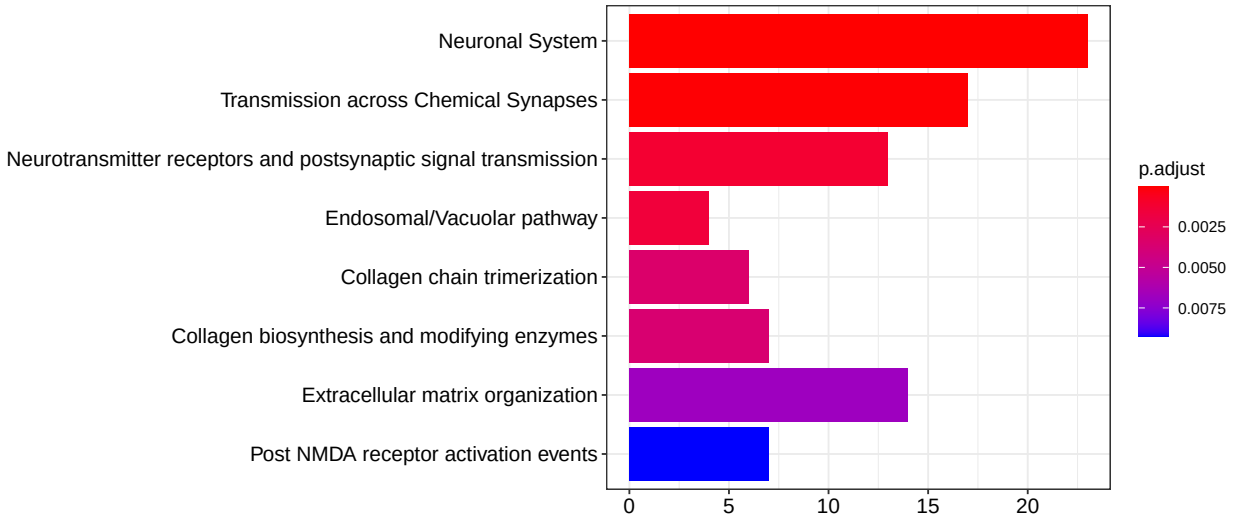
1000 where variability is higher for tumor than in normal

```
as.data.frame(island150_gsea_lower_right) %>%
  select(ID, Description) %>%
  as_tibble()
```

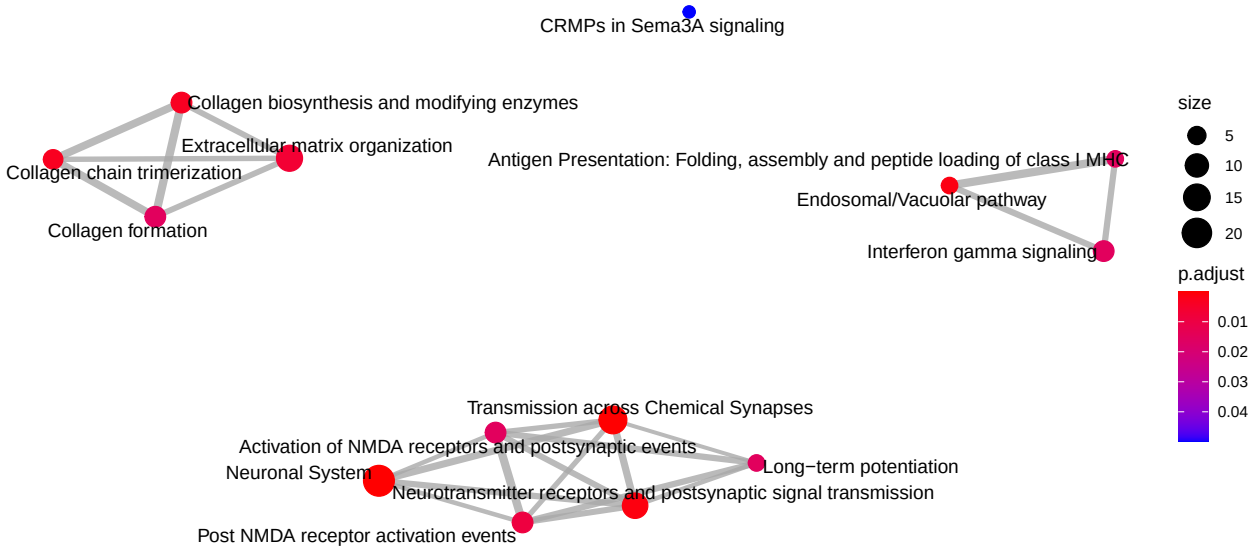
```
## # A tibble: 14 x 2
##    ID           Description
##    <chr>        <chr>
##  1 R-HSA-112316 Neuronal System
##  2 R-HSA-112315 Transmission across Chemical Synapses
```

```
##  3 R-HSA-112314 Neurotransmitter receptors and postsynaptic signal transmission
##  4 R-HSA-12369~ Endosomal/Vacuolar pathway
##  5 R-HSA-89482~ Collagen chain trimerization
##  6 R-HSA-16508~ Collagen biosynthesis and modifying enzymes
##  7 R-HSA-14742~ Extracellular matrix organization
##  8 R-HSA-438064 Post NMDA receptor activation events
##  9 R-HSA-14742~ Collagen formation
## 10 R-HSA-877300 Interferon gamma signaling
## 11 R-HSA-442755 Activation of NMDA receptors and postsynaptic events
## 12 R-HSA-96202~ Long-term potentiation
## 13 R-HSA-983170 Antigen Presentation: Folding, assembly and peptide loading of ~
## 14 R-HSA-399956 CRMPs in Sema3A signaling
```

```
barplot(island150_gsea_lower_right)
```




```
emapplot(island150_gsea_lower_right)
```

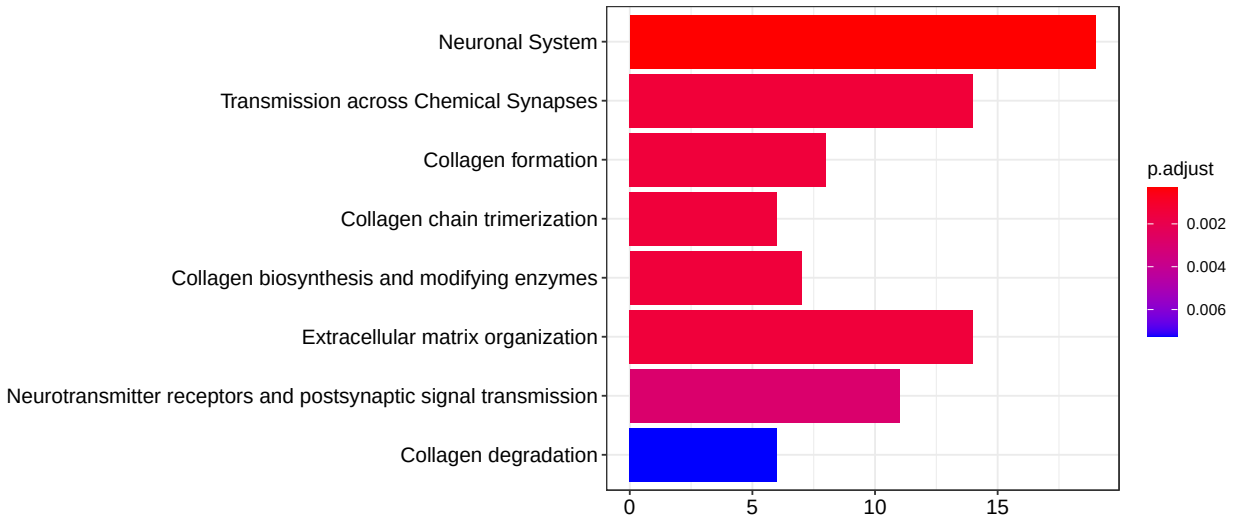


1000 where variability is higher for normal than in tumor

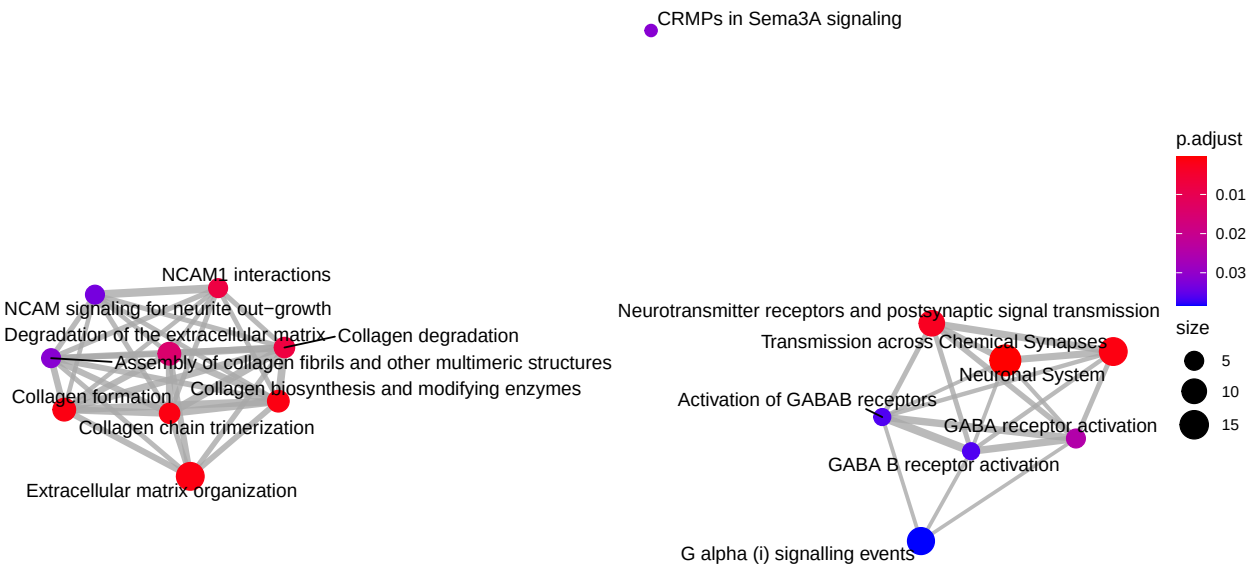
```
as.data.frame(island150_gsea_lower_left) %>%
  select(ID, Description) %>%
  as_tibble()
```

```
## # A tibble: 17 x 2
##    ID            Description
##    <chr>         <chr>
##  1 R-HSA-112316  Neuronal System
##  2 R-HSA-112315  Transmission across Chemical Synapses
##  3 R-HSA-1474290 Collagen formation
##  4 R-HSA-8948216 Collagen chain trimerization
##  5 R-HSA-1650814 Collagen biosynthesis and modifying enzymes
##  6 R-HSA-1474244 Extracellular matrix organization
##  7 R-HSA-112314  Neurotransmitter receptors and postsynaptic signal transmission
##  8 R-HSA-1442490 Collagen degradation
##  9 R-HSA-419037  NCAM1 interactions
## 10 R-HSA-1474228 Degradation of the extracellular matrix
## 11 R-HSA-977443  GABA receptor activation
## 12 R-HSA-2022090 Assembly of collagen fibrils and other multimeric structures
## 13 R-HSA-399956  CRMPs in Sema3A signaling
## 14 R-HSA-375165  NCAM signaling for neurite out-growth
## 15 R-HSA-977444  GABA B receptor activation
## 16 R-HSA-991365  Activation of GABAB receptors
## 17 R-HSA-418594  G alpha (i) signalling events
```

```
barplot(island150_gsea_lower_left)
```




```
emapplot(island150_gsea_lower_left)
```


CRMPs in Sema3A signaling
NCAM1 interactions
NCAM signaling for neurite out−growth
Degradation of the extracellular matrix
Collagen degradation
Assembly of collagen fibrils and other multimeric structures
Collagen formation
Collagen biosynthesis and modifying enzymes
Collagen chain trimerization
Extracellular matrix organization
Neurotransmitter receptors and postsynaptic signal transmission
Transmission across Chemical Synapses
Neuronal System
Activation of GABAB receptors
GABA receptor activation
GABA B receptor activation
G alpha (i) signalling events
p.adjust
0.01
0.02
0.03
size
5
10
15