main

April 4, 2023

1 Venn diagram comparing female and male SZ differential expression results

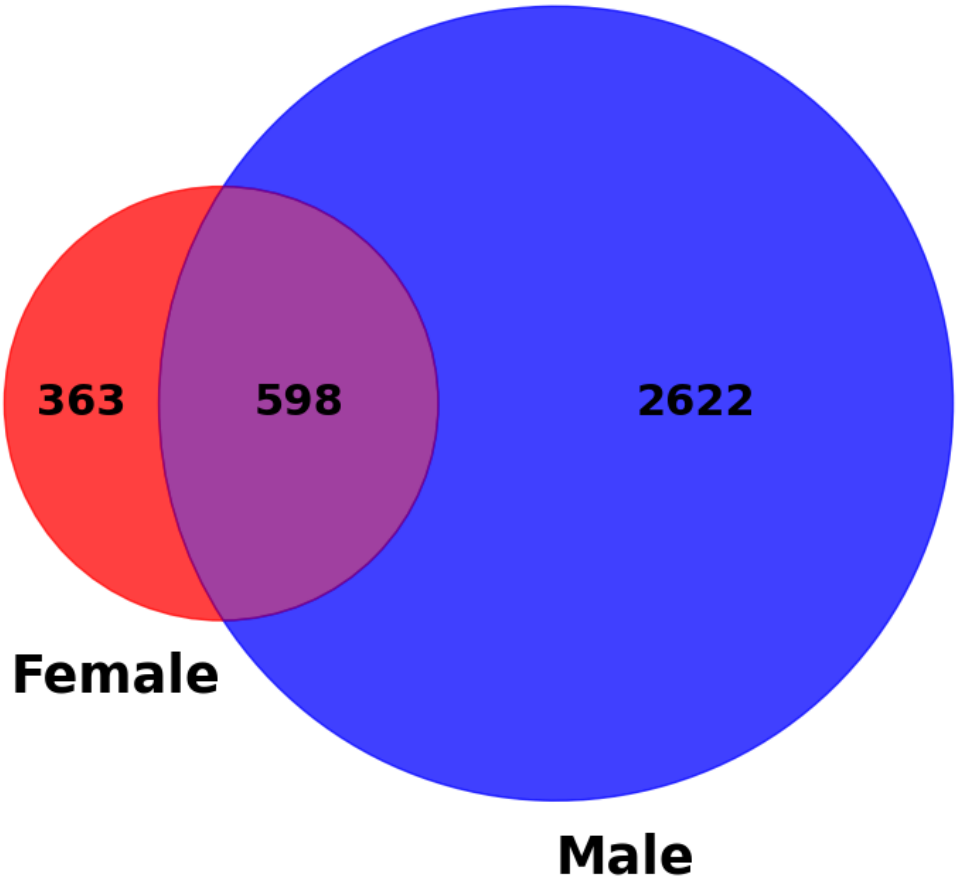
[1]:
```
import pandas as pd
import matplotlib.pyplot as plt
from matplotlib_venn import venn2
```

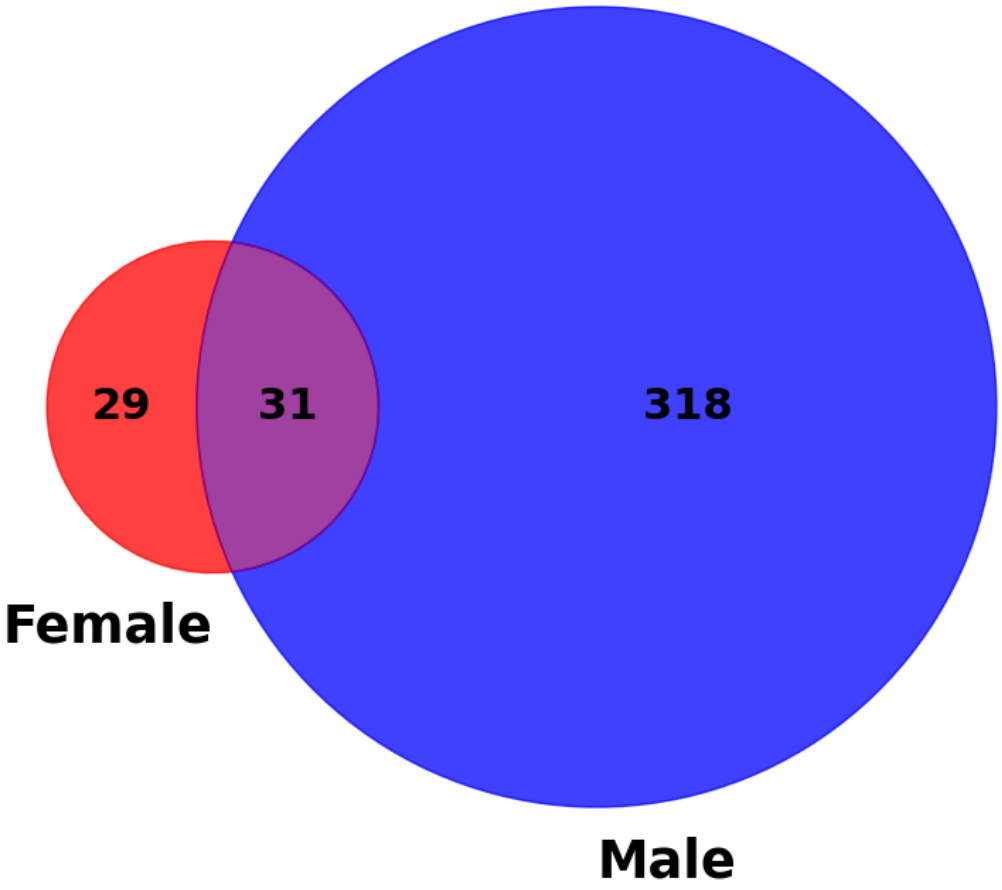
[2]:
```
plt.rcParams.update({'font.size': 22, 'font.weight': 'bold'})
```

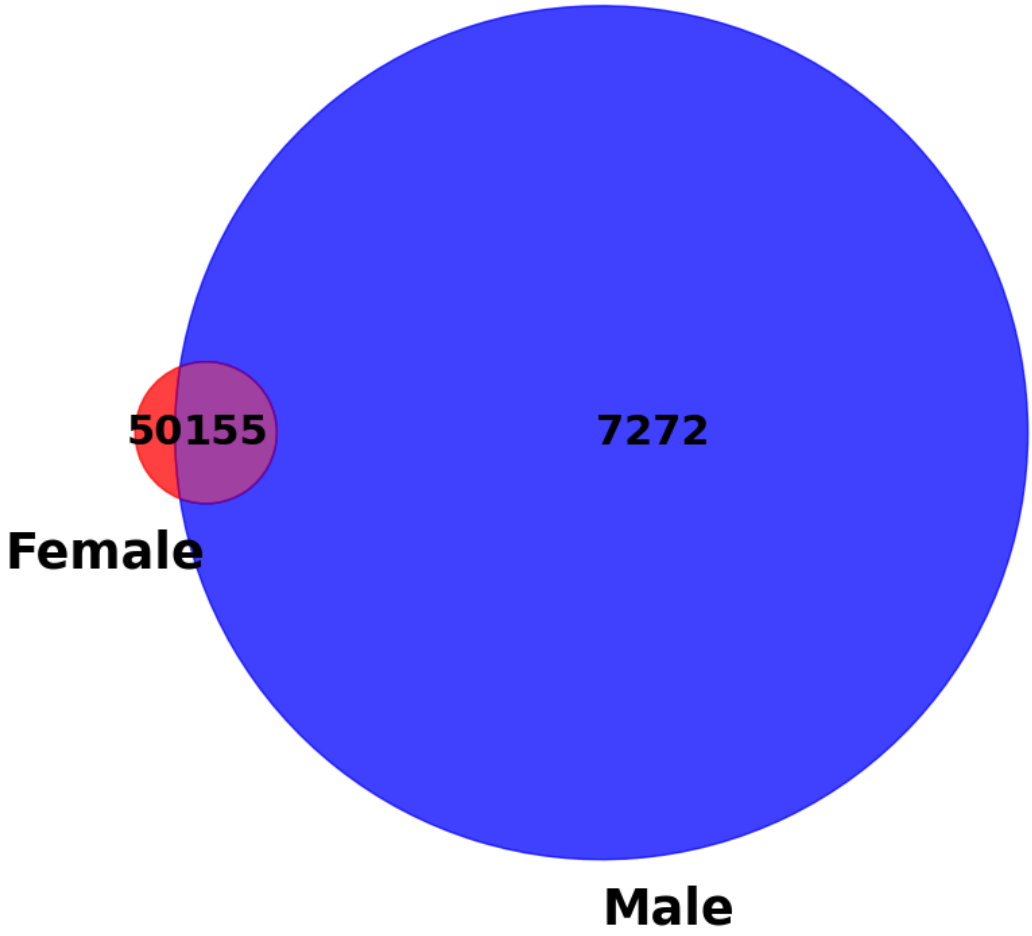
[3]:
```
def get_deg_df(tissue, feature):
    fn1 = "../../../%s/female_analysis/_m/%s/diffExpr_szVctl_full.txt" %␣
 ↪(tissue.lower(), feature)
    fn2 = "../../../%s/male_analysis/_m/%s/diffExpr_szVctl_full.txt" % (tissue.
 ↪lower(), feature)
    female = pd.read_csv(fn1, sep='\t', index_col=0)
    male = pd.read_csv(fn2, sep='\t', index_col=0)
    return female[(female['adj.P.Val'] <= 0.05)], male[(male['adj.P.Val'] <= 0.
 ↪05)]


def plot_venn(tissue, feature):
    ff, mm = get_deg_df(tissue, feature)
    plt.figure(figsize=(10,10))
    v = venn2([set(ff.index), set(mm.index)], set_labels = ('Female', 'Male'))
    v.get_patch_by_id('10').set_color('red')
    v.get_patch_by_id('10').set_alpha(0.75)
    v.get_patch_by_id('01').set_color('blue')
    v.get_patch_by_id('01').set_alpha(0.75)
    try:
        v.get_patch_by_id('11').set_color('purple')
        v.get_patch_by_id('11').set_alpha(0.75)
    except AttributeError:
        print("There is no overlap!")
    plt.savefig('venn_%s_%s.png' % (tissue.lower(), feature))
    plt.savefig('venn_%s_%s.pdf' % (tissue.lower(), feature))
```

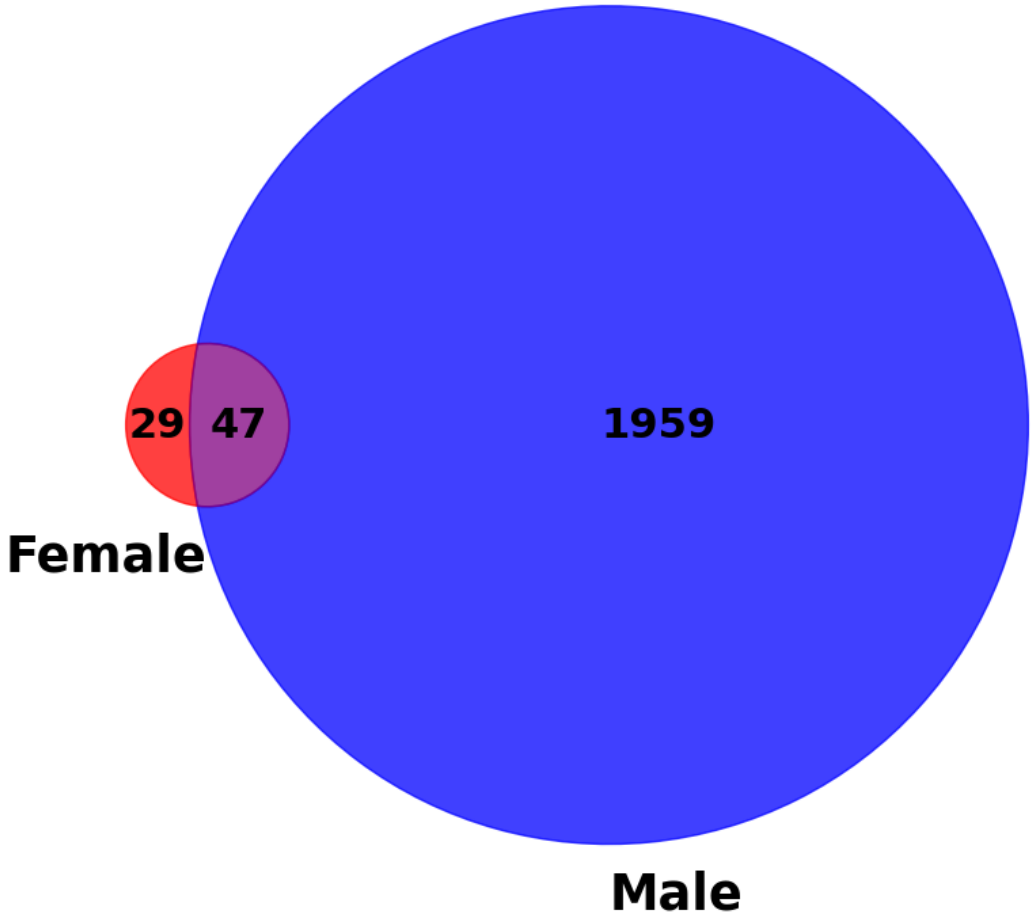
[4]:
```
for tissue in ['Caudate', 'DLPFC', 'Hippocampus']:
    for feature in ['genes', 'transcripts', 'exons', 'junctions']:
        plot_venn(tissue, feature)
```

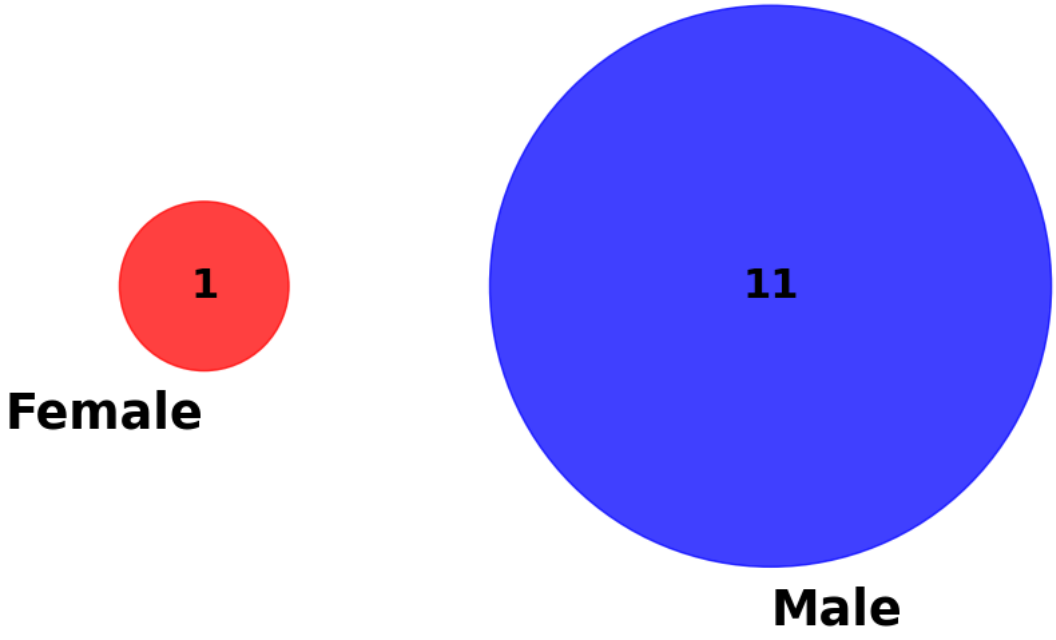
```
There is no overlap!
There is no overlap!
There is no overlap!
There is no overlap!
There is no overlap!
There is no overlap!
```

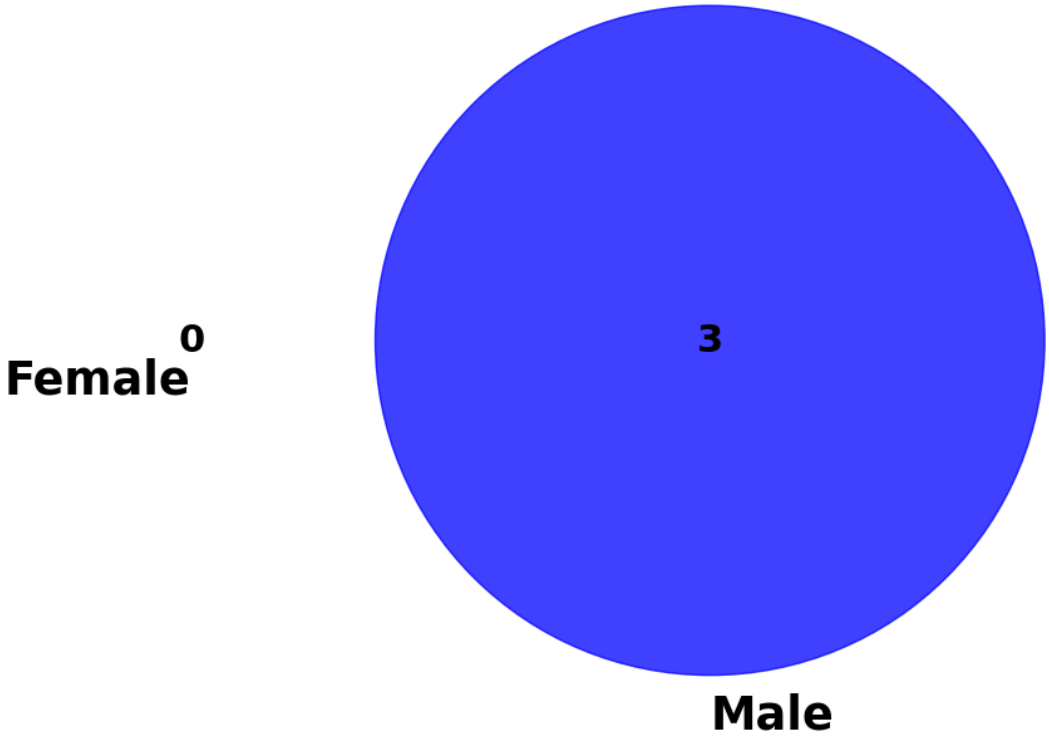


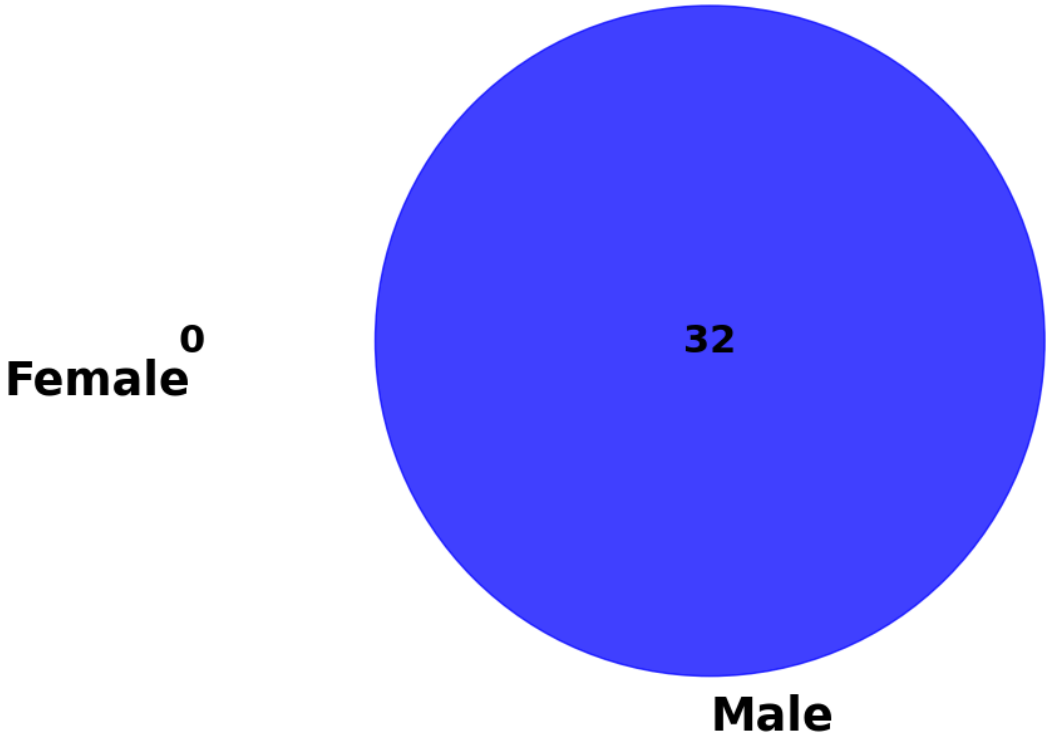

29
31
318
Female
Male

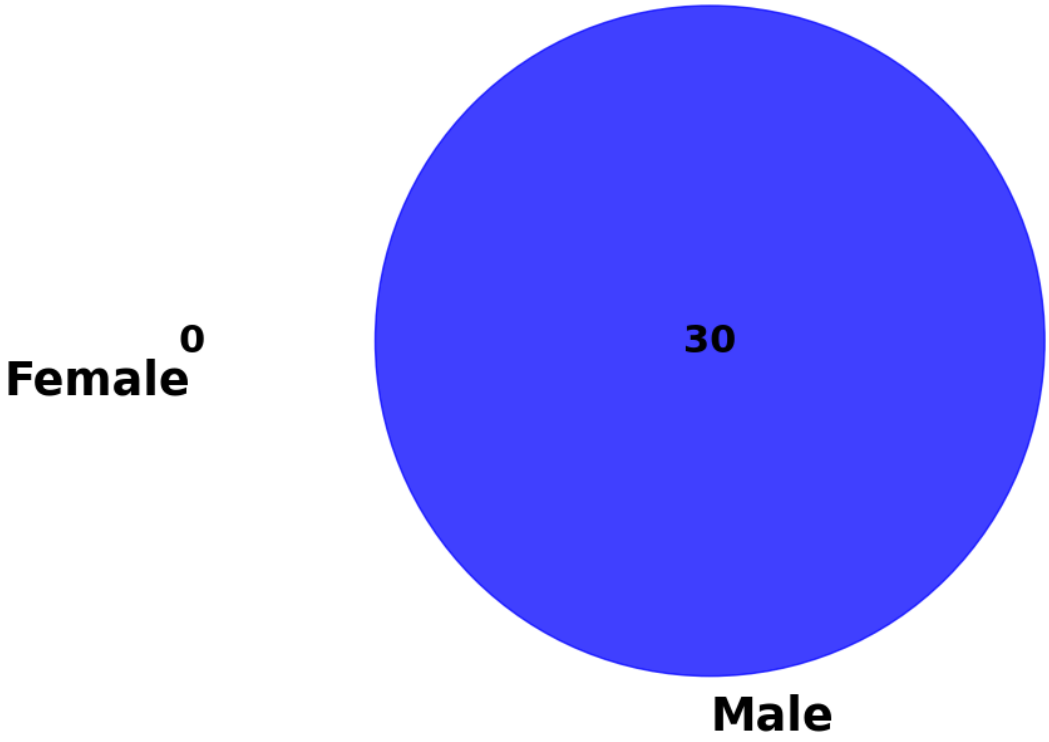

50155
7272
Female
Male

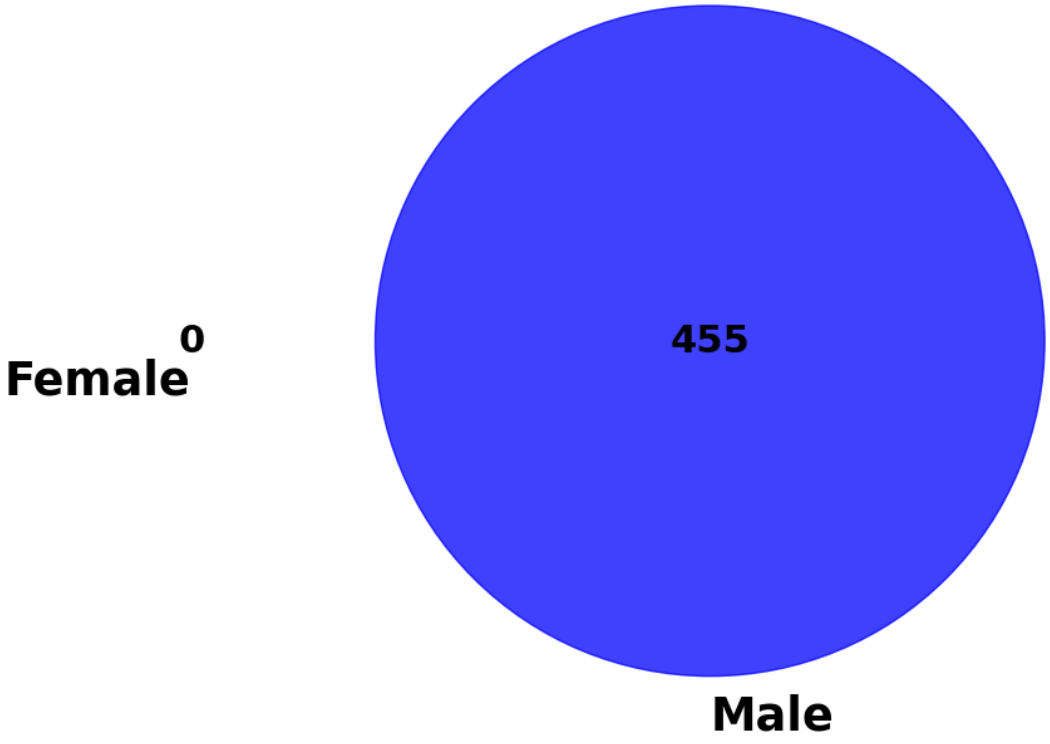

29
47
1959
Female
Male

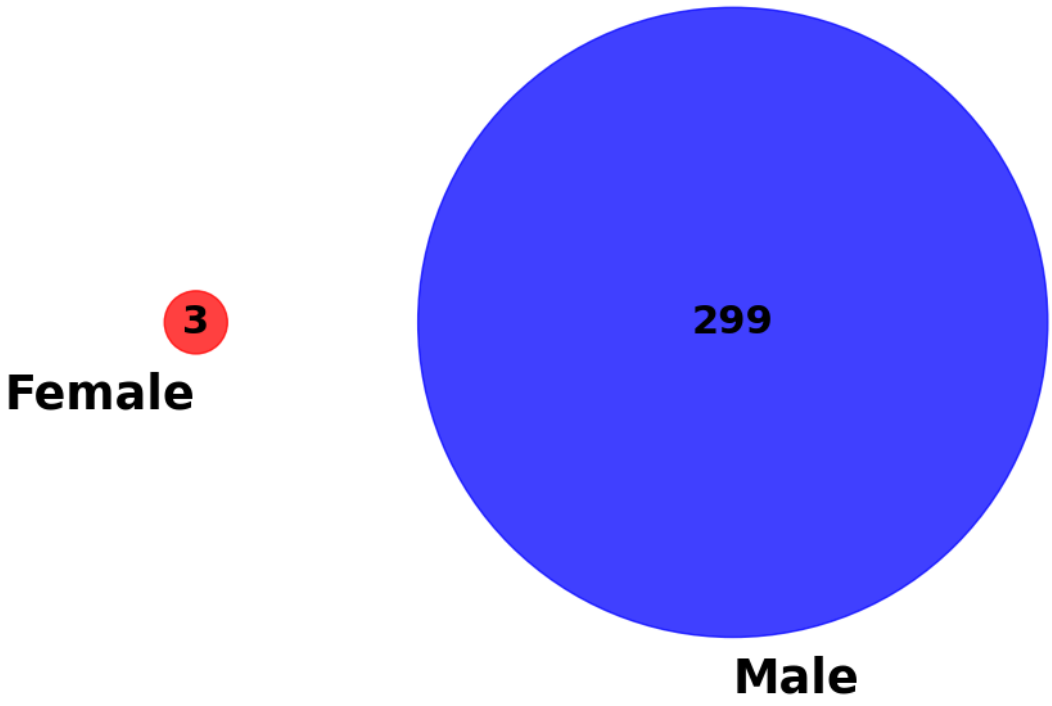

1
Female
11
Male

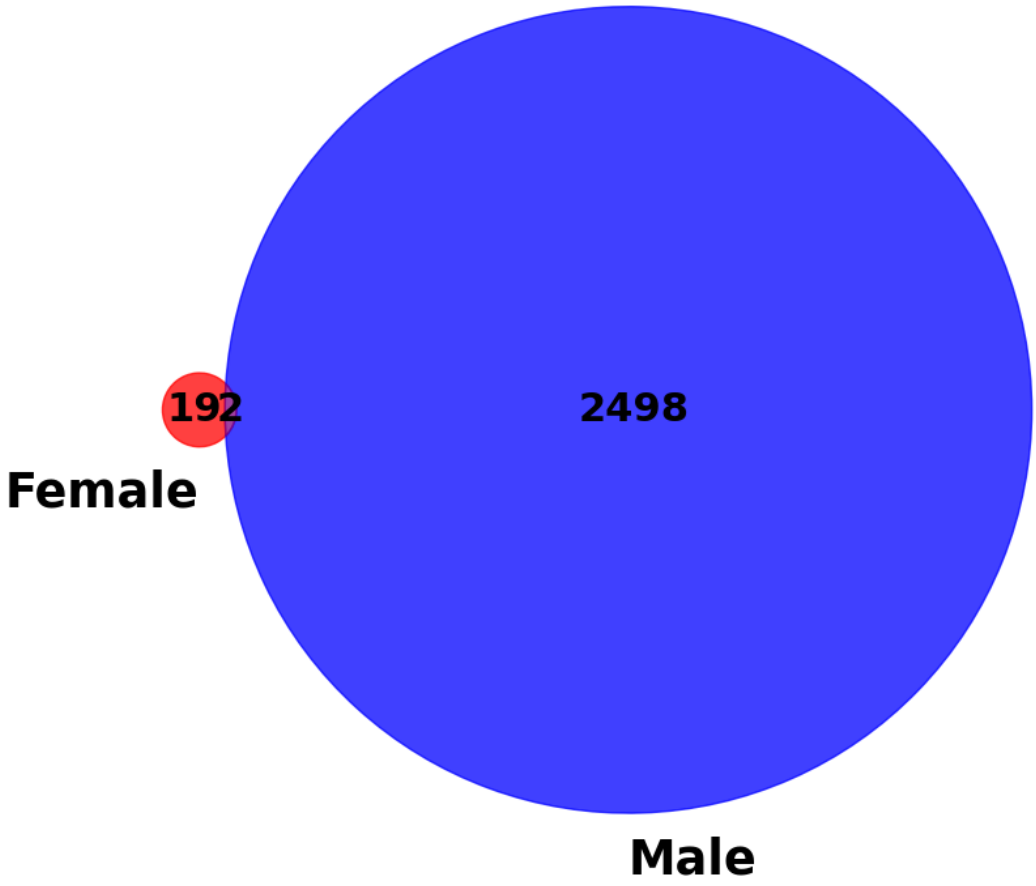

0
Female
3
Male

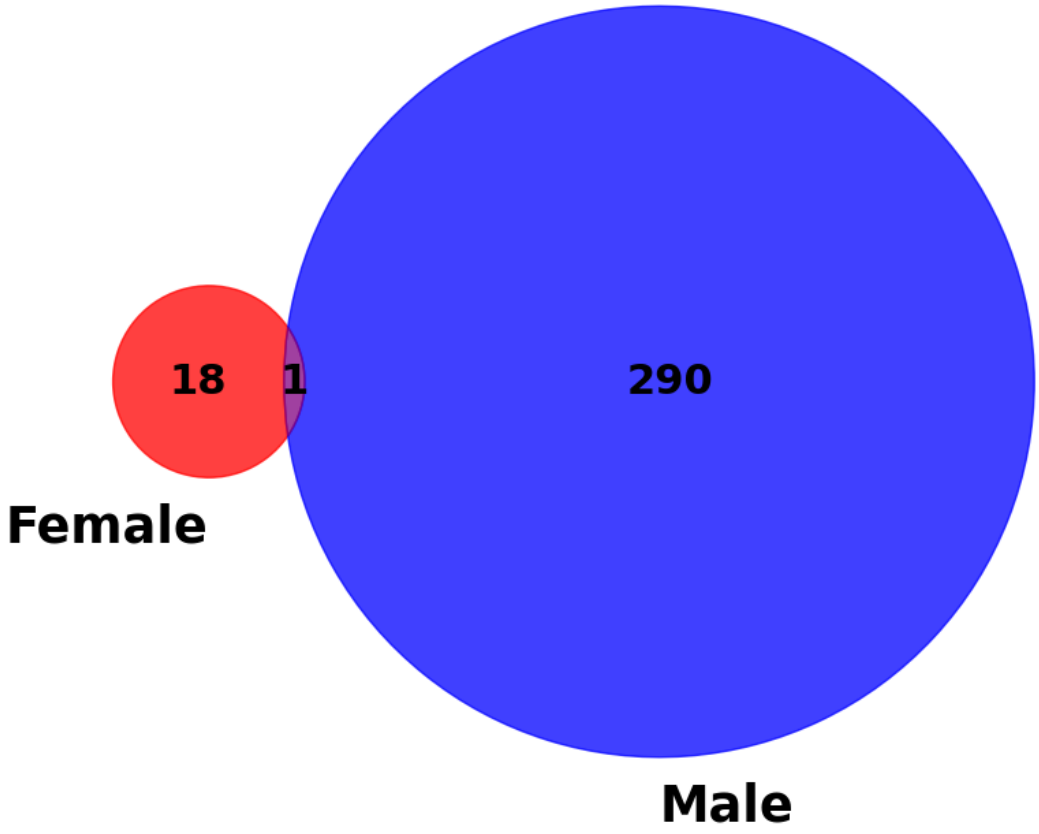

Female
0
32
Male


Female
0
30
Male

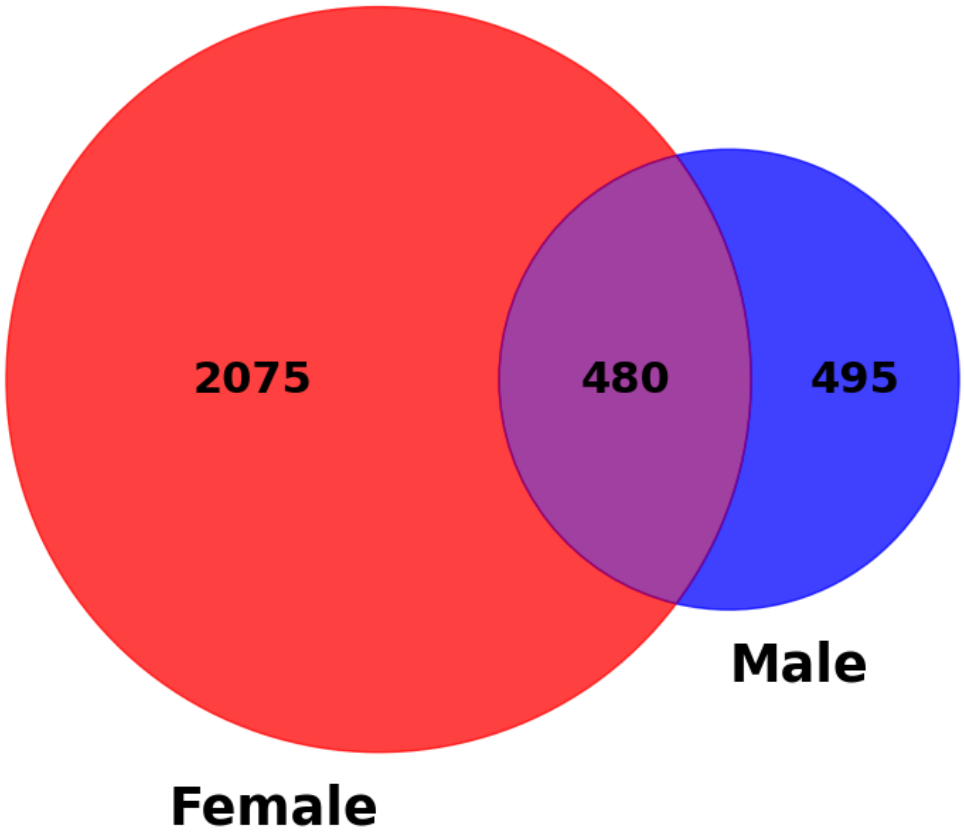

0
Female
455
Male


3
Female
299
Male


192
2498
Female
Male



[5]:
```
plot_venn('cmc_dlpfc', 'genes')
```


2075
480
495
Male
Female

[ ]: