QBS 103: Final Product LaTeX

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Contents

1 Background

The gene I have selected is ABCF2 official name is: ATP binding cassette subfamily F member 2. It is a member of the ATP-Binding cassette transporter super-family. It helps with transport of various molecules across the extra- and intracellular membranes. Alterations in this gene may be involved in cancer progression.

All information came from the: National Library of Medicine.[1]

The continuous covariate I selected is ferritin (ng/ml) its normal range is between 24 and 336.

The two categorical covariates are sex and mechanical ventilation.

2 Updated Plots

2.1 Histogram

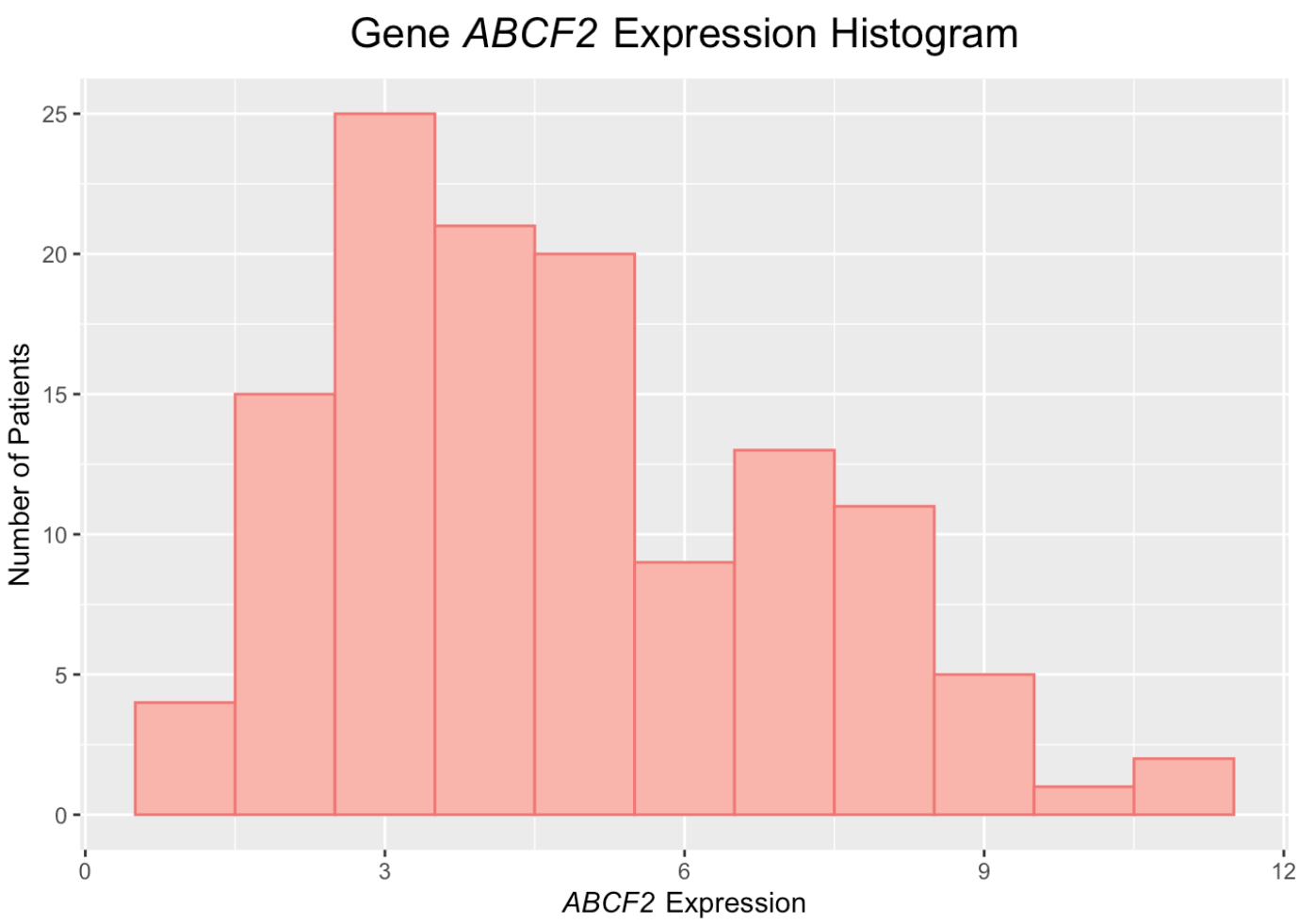

Figure 1:

The histogram above show that distribution is slightly skewed right and appears to have no outliers.

2.2 Scatterplot

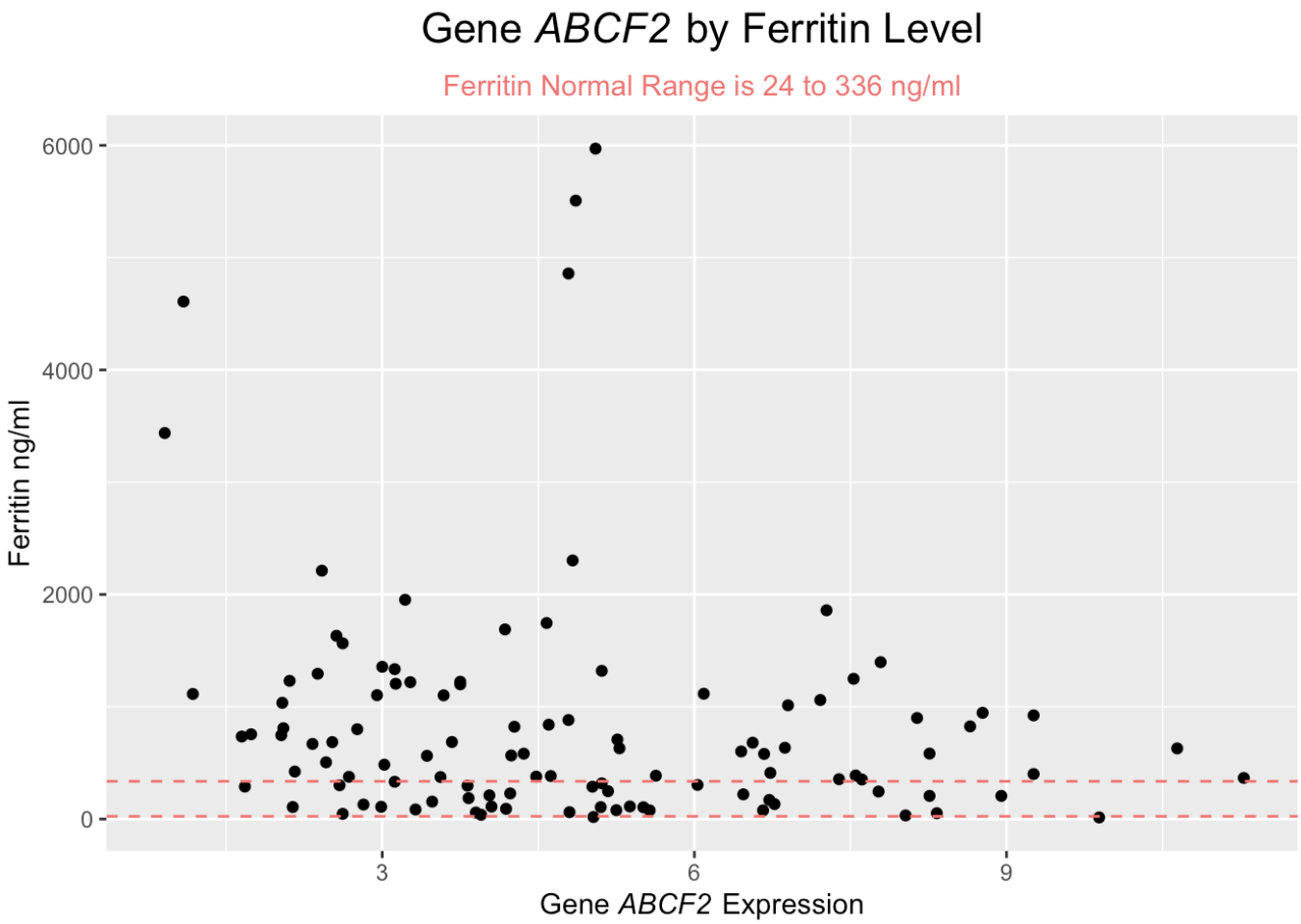

Figure 2:

It is interesting that in the scatterplot above we see that their are more points outside of the normal range for ferritin. Also the distribution is skewed right.

2.3 BoxPlot

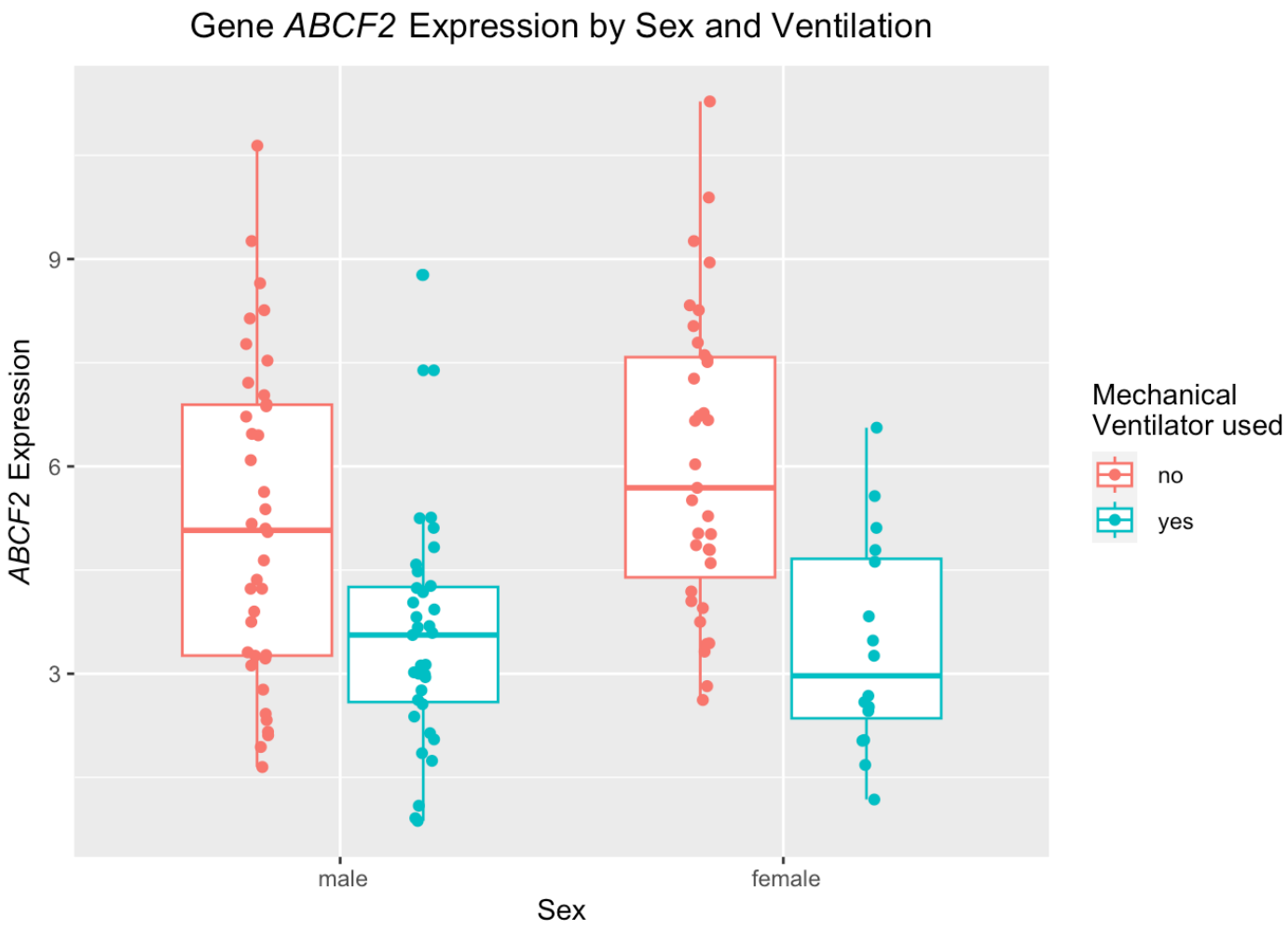

Figure 3:

A trend visible in this graph is that subjects that used a ventilator had smaller expression of gene *ABCF2*. Another thing to note is that their appears to be fewer females that used a ventilator than did not.

3 Table

Summary Statistics

Variable	N	Mean	Std. Dev.	Min	Pctl. 25	Pctl. 75	Max
age	123	61	16	21	50	74	88
ferritin.ng.ml.	107	851	1051	14	236	1102	5971
sex	123						
… female	50	41%					
… male	72	59%					
… unknown	1	1%					
mechanical_ventilation	123						
… no	72	59%					
… yes	51	41%					

Figure 4:

The table above shows summary statistics for the selected variables. For quantitative variables it gives the mean, standard deviation, min, max, and IQR. For qualitative variables it shows the distribution in each catagory.

4 Heat Maps

This is my figure first Heat Map for the correlation between genes.

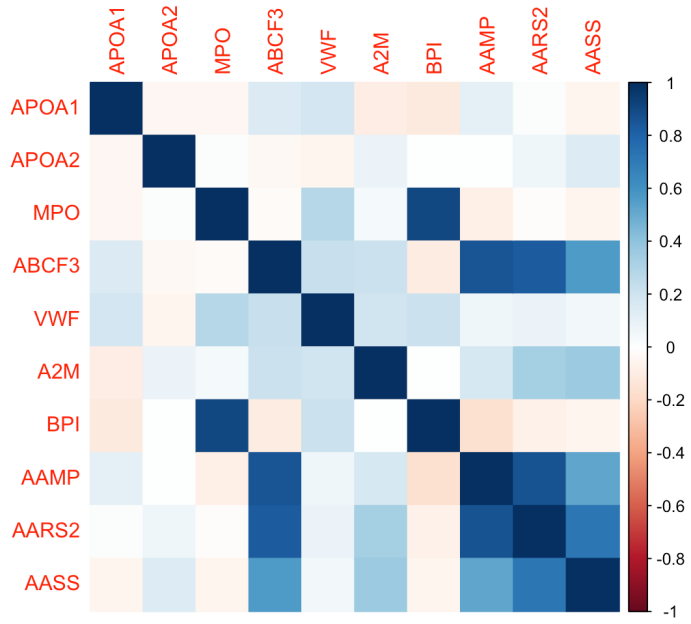

Figure 5:

This is a secondary Heat map that includes clusters.

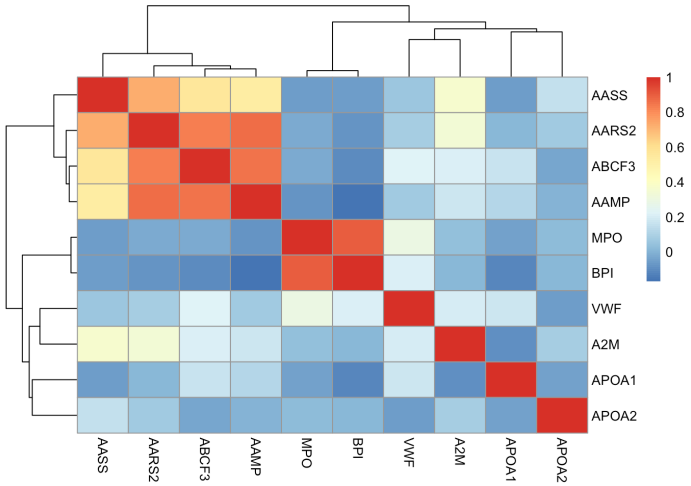

Figure 6:

5 New Graphs

I chose to make two graphs in this section because I was unsure which graphs we covered in class. The first graph is a violin plot.

Figure 7:

The second plot is a density plot. The density plot reaffirms the skewed right notion from the scatterplot and histogram.

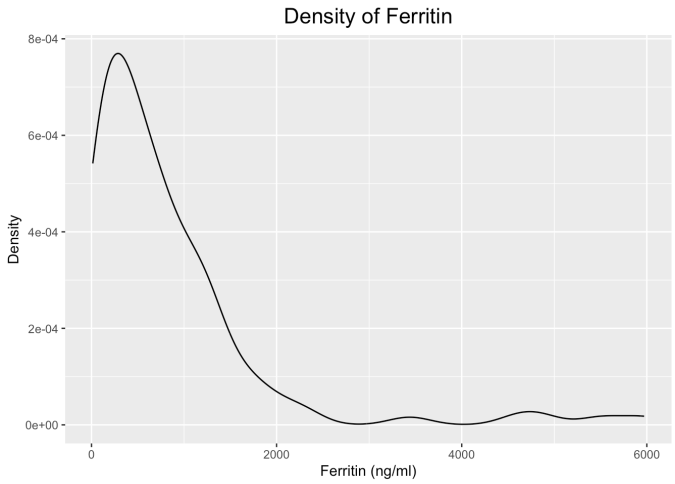

Figure 8:

6 References

References

[1] (2023) Abcf2 atp binding cassette subfamily f member 2 [homo sapiens (human)].

[2] Overmyer, K. A, Shishkova, E, Miller, I. J, Balnis, J, Bernstein, M. N, Peters-Clarke, T. M, Meyer, J. G, Quan, Q, Muehlbauer, L. K, Trujillo, E. A, He, Y, Chopra, A, Chieng, H. C, Tiwari, A, Judson, M. A, Paulson, B, Brademan, D. R, Zhu, Y, Serrano, L. R, Linke, V, Drake, L. A, Adam, A. P, Schwartz, B. S, Singer, H. A, Swanson, S, Mosher, D. F, Stewart, R, Coon, J. J, & Jaitovich, A. (2021) Large-scale multi-omic analysis of covid-19 severity. *Cell Systems* **12**, 23–40.e7.

[2] [1]