Instructions:

1. Download common\_core8.csv and Mucus\_Code.R from Codes\_and\_data folder.
2. Download all the packages listed in Rstudio\_package\_list from Codes\_and\_data folder.
3. Run Mucus\_Code.R in the same directory as common\_core8.csv (This code was found to have issues with some computers running Windows OS specifically with points not popping up on the plots).
4. Locate “Figure\_3\_Charge.pdf”.
5. Locate ‘TNeglin’ and ‘TANeglin’. These variables contain linear regression information.
6. Locate “Figure\_3\_Charge\_v4.svg” in the folder. Add Prediction/experiment label and simple linear regression values to “Figure\_3\_Charge.pdf” in inkscape. Add number of data points in inkscape.
7. From the folder locate “Figure\_3\_Charge”, locate “Figure\_3\_Charge\_a\_data.csv”. This is a data file that makes up panel **a** of “Figure\_3\_Charge.pdf”. First row is the header. Column names “Diffusion constant” is effective diffusion at 1 second, “zeta” is zeta potential and “Particle\_type” is particle type. Remark that Antibody refers to Antibodies and proteins.
8. From the folder locate “Figure\_3\_Charge”, locate “Figure\_3\_Charge\_b\_data.csv”. This is a data file that makes up panel **b** of “Figure\_3\_Charge.pdf”. First row is the header. Column “alpha” is the anomalous exponent and column“Data\_type” is the classification of predicted or experiment data.

Output(s):

“Figure\_3\_Charge.pdf” is a pdf that plots effective diffusion as a function of charge (zeta potential), and anomalous exponent as a function of charge.