Instructions:

1. Download Mucus\_Code.R and common\_core8.csv 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\_Size.pdf” .
5. Locate ‘TSmallmucuslm’ and ‘AsmalldiaT1’. These variables contain linear regression information.
6. In the “Figure\_4\_Size” folder, locate “Figure\_4\_Size\_V3.svg”. Add linear regression values to “Figure\_3\_Size.pdf” in inkscape. Add prediction/experiment and normal brownian diffusion labels in inkscape. Add number of data points in inkscape.
7. From the folder locate “Figure\_4\_Size”, locate “Figure\_4\_Size\_a\_data.csv”. This is a data file that makes up panel **a** of “Figure\_4\_Size.pdf”. First row is the header. Column names “Diffusion constant” is effective diffusion at 1 second, “Diameter” is particle diameter and “Particle\_type” is particle type. Remark that Antibody refers to Antibodies and proteins.
8. From the folder locate “Figure\_4\_Size”, locate “Figure\_4\_Size\_b\_data.csv”. This is a data file that makes up panel **b** of “Figure\_4\_Size.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\_Size.pdf” is a pdf that plots effective diffusion versus diameter, and anomalous exponent versus diameter.