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\_2\_difvalp.pdf”.
5. Locate ‘t1’. This variable contains linear regression information.
6. From folder “Figure\_2\_Effective\_diffusion\_versus\_anomalous\_exponent”, locate “Figure\_2\_difvalp\_v4.svg”. Prediction/experiment labels and linear regression analysis were added in inkscape. Add number of data points in inkscape.
7. From the folder locate “Figure\_2\_Effective\_diffusion\_versus\_anomalous\_exponent”, locate “Figure\_2\_difvalp\_a\_data.csv”. This is a data file that makes up panel **a** of “Figure\_2\_difvalp.pdf”. First row is the header. Column names “Diffusion constant” is effective diffusion at 1 second, “alpha” is anomalous exponent” and “Particle\_type” is particle type. Remark that Antibody refers to Antibodies and proteins.
8. From the folder locate “Figure\_2\_Effective\_diffusion\_versus\_anomalous\_exponent”, locate “Figure\_2\_difvalp\_b\_data.csv”. This is a data file that makes up panel **b** of “Figure\_2\_difvalp.pdf”. First row is the header.

Outputs:

“Figure\_2\_difvalp.pdf” is a vectorial pdf file of a plot of effective diffusion at one second versus anomalous exponent.