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\_S4\_Indepth\_SLR\_analysis.pdf".
5. From folder Linear\_analysis, locate "Figure\_S4\_Indepth\_SLR\_analysis.svg". Add labels and number of data points in inkscape.
6. From the folder locate “Figure\_S4\_Indepth\_SLR\_analysis”, locate “Figure\_S4\_Indepth\_SLR\_analysis\_a\_data.csv”. This is a data file that makes up panel **a** of “Figure\_S4\_Indepth\_SLR\_analysis.pdf”. First row is the header. Columns are variable and standardized residuals: “alpha” is the anomalous exponent and “stdresid” is standardized residual.
7. From the folder locate “Figure\_S4\_Indepth\_SLR\_analysis”, locate “Figure\_S4\_Indepth\_SLR\_analysis\_b\_data.csv”. This is a data file that makes up panel **b** of “Figure\_S4\_Indepth\_SLR\_analysis.pdf”. First row is the header. Columns are variable and standardized residuals: “Diameter” is particle diameter and “stdresid” is standardized residual.
8. From the folder locate “Figure\_S4\_Indepth\_SLR\_analysis”, locate “Figure\_S4\_Indepth\_SLR\_analysis\_c\_data.csv”. This is a data file that makes up panel **c** of “Figure\_S4\_Indepth\_SLR\_analysis.pdf”. First row is the header. Columns are variable and standardized residuals: “Diameter” is particle diameter and “stdresid” is standardized residual.
9. From the folder locate “Figure\_S4\_Indepth\_SLR\_analysis”, locate “Figure\_S4\_Indepth\_SLR\_analysis\_d\_data.csv”. This is a data file that makes up panel **d** of “Figure\_S4\_Indepth\_SLR\_analysis.pdf”. First row is the header. Columns are variable and standardized residuals: “Zeta” is zeta potential and “stdresid” is standardized residual.

Output:

"Figure\_S4\_Indepth\_SLR\_analysis.pdf" is a pdf file that contains plots of in-depth analysis of statistically significant linear regression analysis by plotting residual, standardized residual and normal probability.