north east
england

HART BIOLOGICALS

Calculating Extrapolated MNPT and ISI using Microsoft Excel:

1. Construct a simple table containing columns for INR, Log_{10}(INR), Clot Time and Log_{10}(Clot Time)

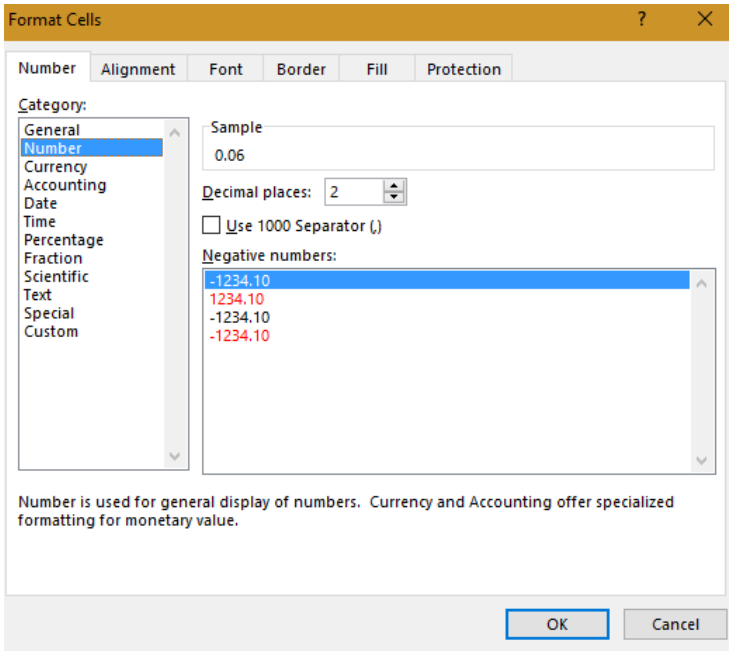
Plasma Ref	INR	Log_{10}	Time (sec)	Log_{10}
3635-1	1.15			
3636-1	2.28			
3637-1	4.11			
3638-1	5.41			
3639-4	7.60			

2. Using the "=log_{10}()" function calculate the logarithm of the INR value and Time values

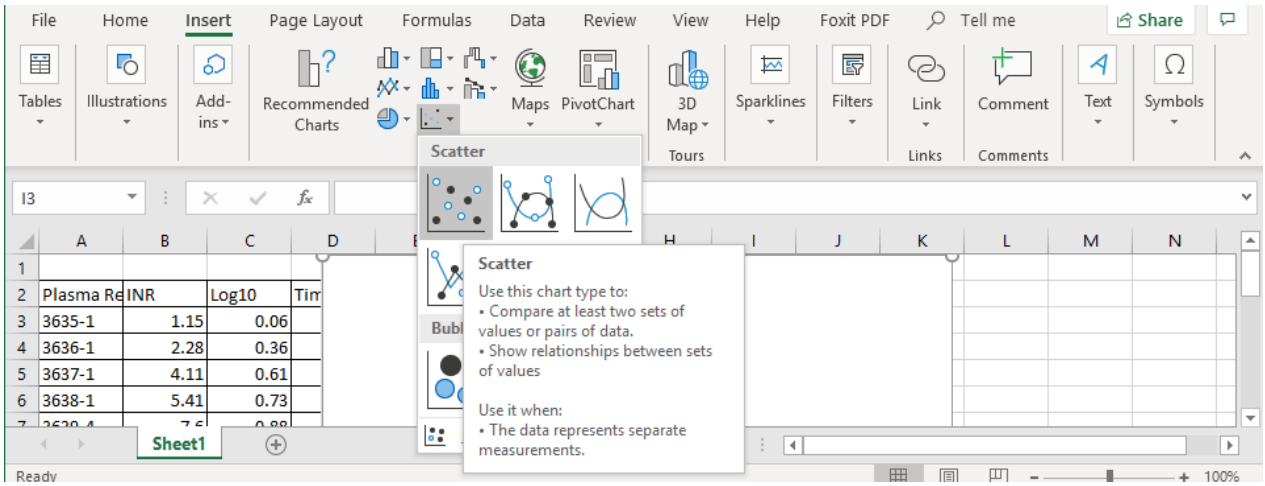
=log10(B3) will calculate the logarithm of the value of cell B3

3. Enter clot times

4. Right click on a cell, or selection of cells will bring up a drop-down menu. From here select "Format Cells". From here, selecting the "Number" category can allow us to select our preferred number of decimal places. This will not affect the value of the cell, just how it is displayed. This technique can be applied throughout the spreadsheet with the number of decimal places being selected appropriate to the value displayed.



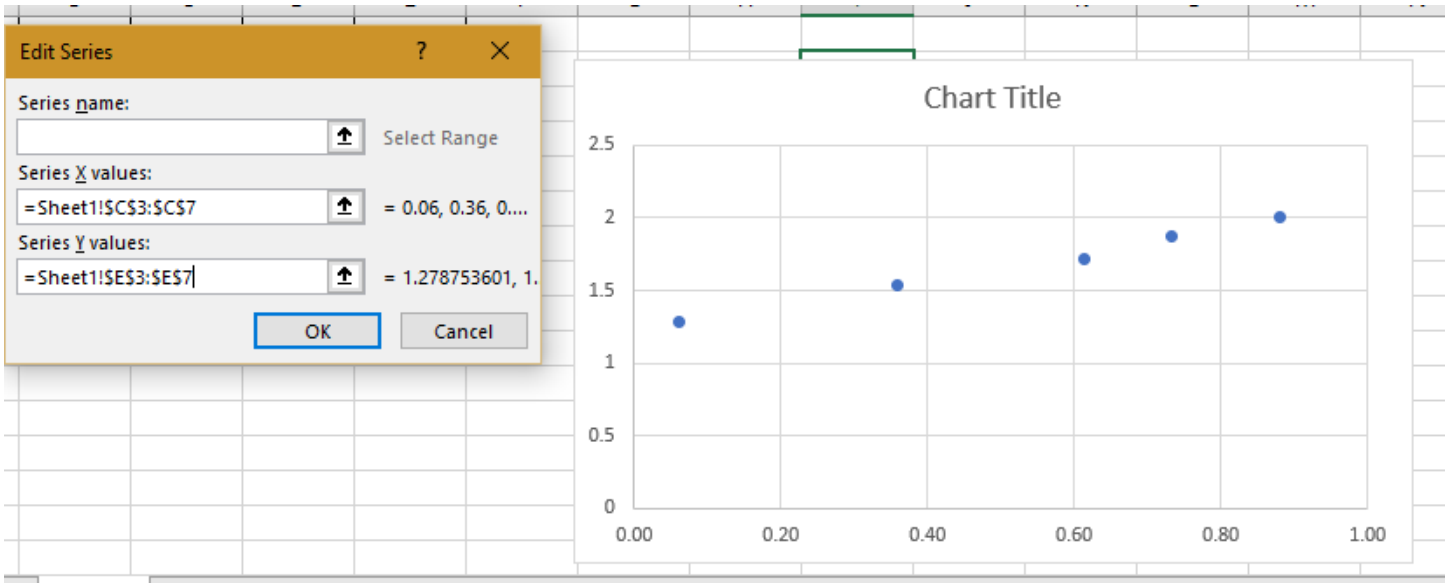
5. Next we're going to plot a scatter graph. To do this from the "Insert" tab



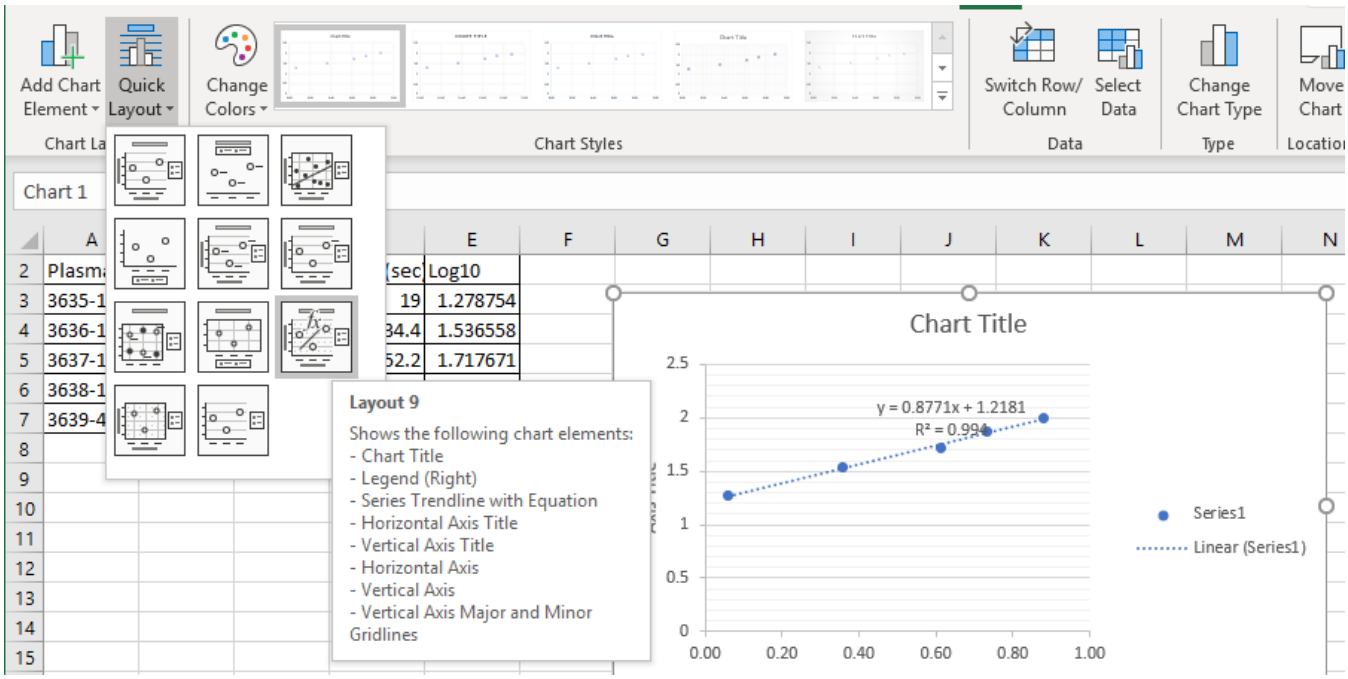
6. Use the select data function to select data to be plotted.

7. Add a new series.

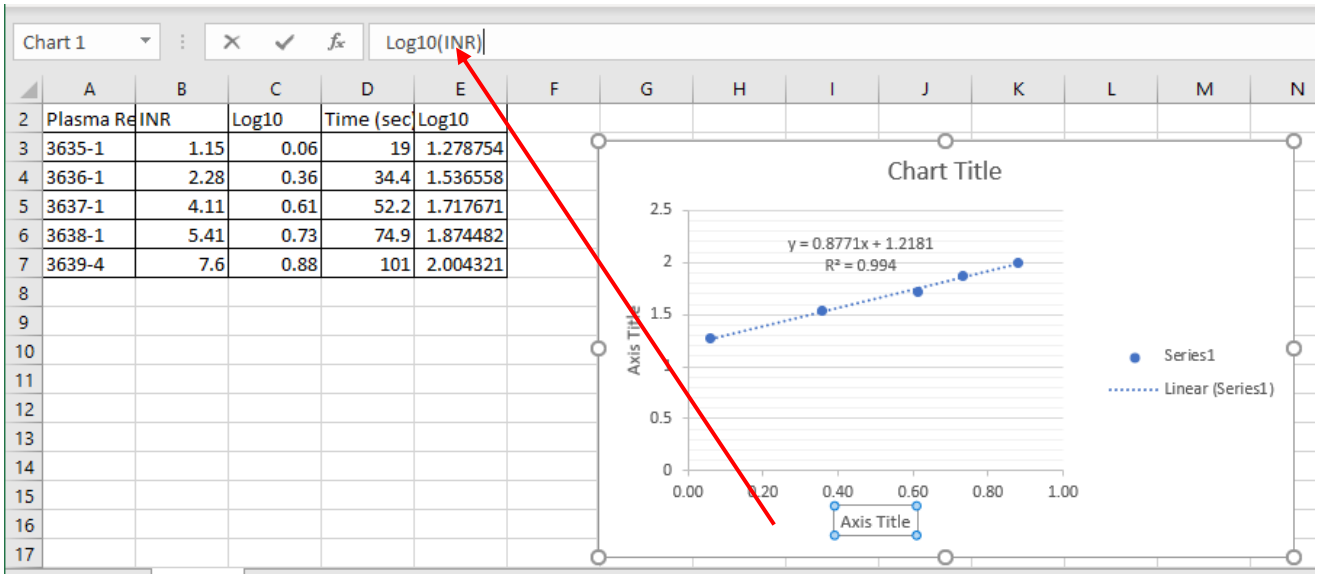
8. Select the $\log_{10}$(INR) data and the $\log_{10}$(Time) values previously calculated for the x and y values respectively



9. Using the "quick layouts" function select "layout 9". This will automatically add axis titles, chart titles and a line of best fit.



10. By selecting the axis or chart titles on the graph, left clicking into the formula bar allows us to change the titles.



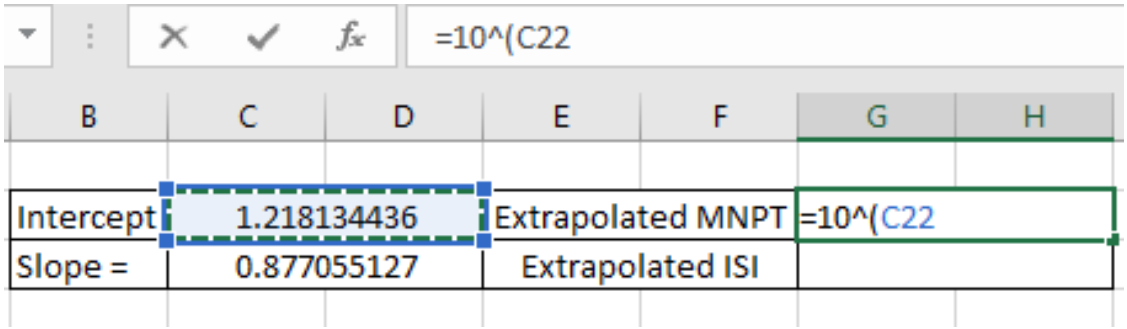
11. With layout 9 select the graph will have the equation of the line of best fit and the correlation coefficient (R^2) displayed. These can be now reviewed as they will be used to calculate our MNPT and ISI values

12. Set-up a small table for “slope”, “intercept”, “extrapolated MNPT” and “extrapolated ISI”

13. Into the intercept box, enter the value of the intercept. This can either be translated directly from what is displayed on the graph or by using the =intercept() function. If using the function, select the $\log_{10}$(Time) values first and the $\log_{10}$(INR) values second. These should be separated by a comma ",".

14. Into the slope box, enter the value of the slope. This can either be translated directly from what is displayed on the graph or by using the =slope() function. If using the function, select the $\log_{10}$(Time) values first and the $\log_{10}$(INR) values second. These should be separated by a comma ",".

15. To calculate the extrapolated MNPT, raise 10 to the power of the intercept.



16. To calculate the extrapolated ISI, take the inverse of the slope.