

Instructions for carrying out statistical procedures and tests using SPSS

These instructions are closely linked to the author's book:

Essential Statistics for the Pharmaceutical Sciences
John Wiley & Sons Ltd <http://eu.wiley.com>
2007
ISBN: 978-0-470-03468-2

For all references to chapters or tables, see the above book.

**Using SPSS to obtain the 95% confidence interval
for the mean after log transformation**

Using SPSS to obtain the 95% confidence interval for the mean after log-transformation

Example: Table 5.4 Pesticide residues in 20 crops of foxglove leaves (ng per g of leaf).

Label the first column as 'Conc' and enter the pesticide concentrations.

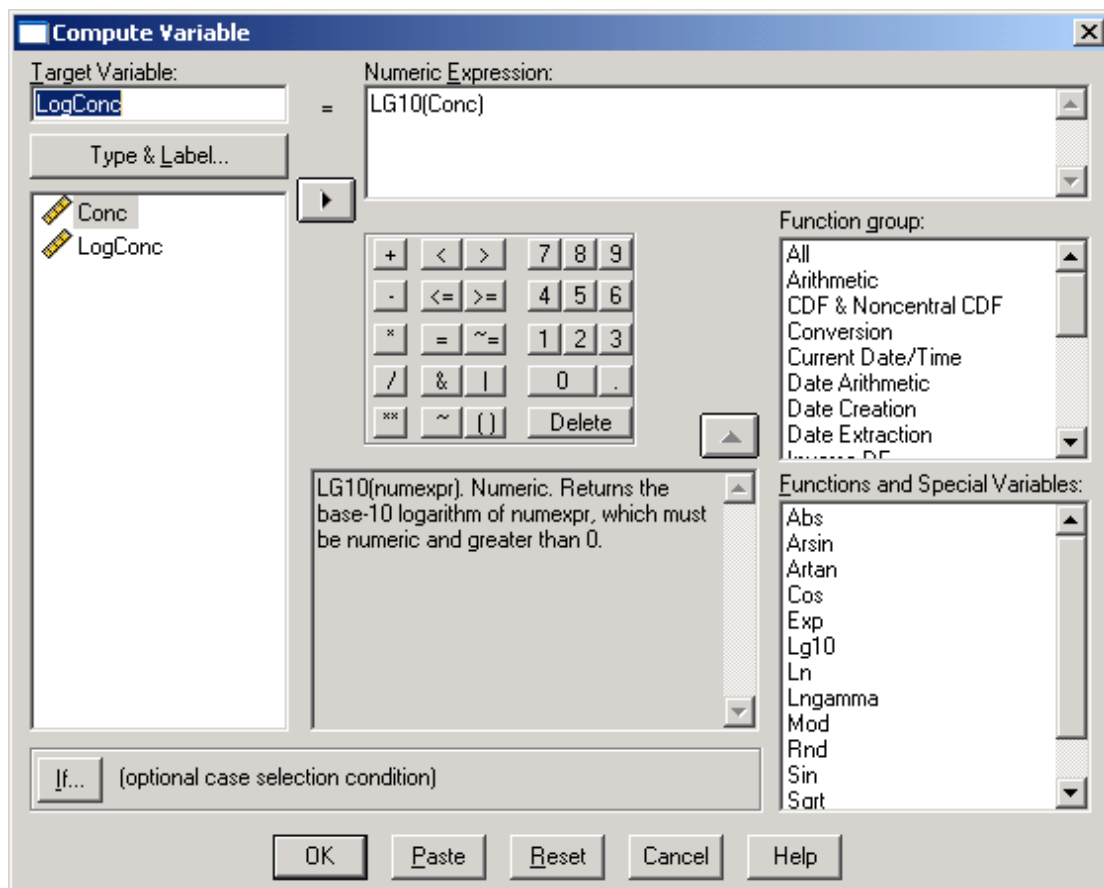
Stage 1: Obtain the logs of the concentrations

Label column 2 as 'LogConc' and allow three decimal places.

Follow the menus: *Transform / Compute ...*

Enter LogConc in the 'Target Variable:' box.

In the list labelled 'Function group', click on Arithmetic and then in the 'Functions and Special Variables:' box, double click on Lg10. 'LG10(?)' should appear in the 'Numeric Expression:' box, with '?' highlighted. Transfer Conc from the left hand box into the 'Numeric Expression:' box, which should then change to LG10(Conc). The Compute Variable window should now appear as:



Clicking OK will cause the logs of the concentrations to appear in column 2.

Stage 2: Obtain the 95% CI for the mean of the logs of the concentrations.

This is now performed exactly as for the normal 95% CI, but you select the log transformed values.

Follow the menus *Analyze / Descriptive Statistics / Explore ...*

Transfer LogConc in to the 'Dependent List' box.

The result will be:

			Statistic	Std. Error
LogConc	Mean		1.14087	.199390
	95% Confidence Interval for Mean	Lower Bound	.72354	
		Upper Bound	1.55820	
	5% Trimmed Mean		1.11449	
	Median		1.00610	
	Variance		.795	
	Std. Deviation		.891700	
	Minimum		-.301	
	Maximum		3.058	
	Range		3.359	
	Interquartile Range		1.629	
	Skewness		.393	.512
	Kurtosis		-.588	.992

Remember that the mean (1.14087) and the lower and upper bounds of the confidence interval (0.72354 & 1.55820) are still in log form and you will need to take their anti-logs to get the geometric mean and a confidence interval. (See Chapter 5 for details).