Instructions for carrying out statistical procedures and tests using Minitab

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 Minitab to obtain a 1-sided 95% confidence interval for the mean

Using Minitab to obtain a 1-sided 95% confidence interval for the mean

Example: Table 5.3 Tetracyline content (%w/w) in 8 samples taken from a single batch.

The purpose of this analysis is to generate a lower limit for the content of authentic drug in a crude product. The figures are simply entered into a suitable labelled column in Minitab and a 95% C.I. is then obtained by following the menus:

Stat / Basic Statistics / 1-Sample t …

Indicate the appropriate column in the box labelled 'Samples in columns:'

The default would be a 2-sided interval, but we can select an option for the 1-sided version. Click the 'Options…' button. Click in the 'Alternative:' box and select 'greater than'. ('Greater than' is used because the true population mean will be assumed to be greater than the figure generated.) The procedure then produces just one limit (The '95% Lower Bound' in Minitab speak.):

One-Sample T: Purity

Variable	N	Mean	StDev	SE Mean	95% Lower Bound
Purity	8	76.6750	1.5012	0.5308	75.6695

The tetracycline content of the batch is unlikely to be less than 75.67% and no maximum is reported.

See Section 5.8.2 for discussion of one-sided intervals.