柏際股份有限公司 **BockyTech, Inc.**
100台北市中正區延平南路70號5F之5
Tel：886-2-23618050 Fax：886-2-23619803
5F-5, 70, Yanping S. Rd.,
Taipei 100, Taiwan, R.O.C.
Http://www.bockytech.com.tw

GraphPad Prism Features

GraphPad Prism 4 is available for both Windows and Macintosh. The two versions are very similar. You can open files created on one platform on the other platform with no special conversion. The program has almost identical interfaces on the two platforms, so you can switch back and forth with virtually no learning curve. The main difference is that the Mac version does not support Object Linking and Embedding (OLE).

Curve fitting features:

Equations

- Marquardt-Levenberg nonlinear regression.
- Fit data to a built-in classic equation, choose from an equation library, or enter your own.
- Built-in equations include kinetic equations (exponential decay, growth, association), equilibrium mass action equations (binding isotherm, sigmoidal dose-response, competitive binding including 2 site), polynomial up to 4th order, Gaussian distribution, power series and sine.
- Enter multiple-line user-defined equations, including If-Then clauses. Define different equations for different data sets (columns).
- Generate a family of theoretical curves.
- Create equation libraries to distribute to others.

Fitting options

- Automatic initial values.
- Fit to replicate Y values or mean Y.
- Fix any parameter to a constant value or constrain to a range of values.
- Weight by 1/Y, $1/Y^2$, 1/X, $1/X^2$, $1/SD^2$ distances.
- Fit data to two equations and compare fits with an F test. Automatically graph the best fit.
- Global fitting. Fit several data sets at once, sharing selected parameters between the data sets.
- Compare two curves by comparing the sum of squares when selected parameters are shared between the data sets with the individual sum of squares.
- Compare models (and data sets) using the extra sum-of-squares F test or Akaike's Information Criterion (AIC).

Output options

- Comprehensive results include value of parameters with SEM and 95% CI, df, R^2, sum of squares, and residuals (Sy.x).

- Perform a runs test for goodness-of-fit.
- Calculate (and graph) residuals.
- Use any curve as a standard curve. Calculate Y from X, or X from Y.
- Calculate dose-ratios for Schild plot.
- Compute Ki from IC_{50} (method of Cheng and Prusoff).
- Table of XY coordinates defining the curve.
- Customizable summary table of best-fit values.

Data management features:

Data entry

- Enter Y data as raw replicates or mean, SD/SEM and N.
- Automatic updating of analyses and graphs as data change.
- Enter up to 104 related data sets on one table to be analyzed and plotted together. Up to 52 replicates and any number of points per data set
- Accurately accounts for missing values.
- Exclude specified points from analyses and graphs (they show on the table in blue italics, but are ignored by the analyses and graphs).
- Transfer data to and from Excel and other applications with the clipboard, or import and export text (ASCII) files.

Data Importing

- Import text files and retain the link. Double click on the Prism data to edit the text file.
- Choose rows and columns to import.
- Filter row. Choose to start importing after a condition is met, and to stop importing when another condition is met.
- Filter columns. Choose a range of columns to import.
- Decimate. Skip several rows after every row that is imported.
- Unstack indexed data.
- Transpose rows and columns.
- Import free-form notes and structured info constants along with data.

Use Excel data in Prism

- Copy and paste data and results between Prism and Excel.
- Paste a link from Excel into Prism. Double-click on the Prism data to return to Excel (Windows only).
- Embed an entire spreadsheet file within a Prism file (Windows only).
- Import Excel files directly (Windows only).

柏際股份有限公司 BockyTech, Inc.
100台北市中正區延平南路70號5F之5
Tel：886-2-23618050 Fax：886-2-23619803
5F-5, 70, Yanping S. Rd.,
Taipei 100, Taiwan, R.O.C.
Http://www.bockytech.com.tw

Data preprocessing

- Normalize, sort or transpose data.
- Subtract (or divide by) a baseline or compute relative changes.
- Consolidate related data sets by calculating means or totals.
- Transform data with a full range of mathematical functions, including user-defined transforms.
- Smooth curves, or convert to their derivative or integral.

Info tables

- Use Info tables to record experimental details such as experiment or lot number, or enter numerical constants (such as concentration) that can be used in analyses.
- Link each info table, with associated free-form notes, to particular data table or to the entire project.
- Enter the info constants manually or import from text files along with your data.
- Use values entered on info sheets as constants in nonlinear regression or transforms, or as titles and text objects.

Efficiently analyze repeat experiments

- Instantly analyze and graph a new data table exactly as you have already analyzed and graphed another data table in the project.
- Save analysis and graphing steps in templates and methods files, to be used in new projects.
- Run Prism scripts to automate importing, analyzing and graphing a large series of experiments.

Statistics features:

Linear regression and correlation

- Calculate slope and intercept with confidence intervals
- Force the regression line through a specified point
- Fit to replicate Y values or mean Y
- Test for departure from linearity with a runs test
- Calculate and graph residuals
- Compare slopes and intercepts of two or more regression lines
- Determine new points along the standard curve
- Pearson or Spearman (nonparametric) correlation
- Table of XY coordinates

Column statistics

- Calculate min, max, quartiles, mean, SD, SEM, CI, CV, Geometric mean with Confidence Intervals
- Specify desired level of confidence
- Frequency distributions (bin to histogram), including cumulative histograms.
- Kolgoromov-Smirnov normality test
- One sample t test or Wilcoxon test to compare the column mean (or median) with a theoretical value
- Skewness and Kurtosis

Statistical comparisons

- Kaplan-Meier survival analysis. Compare curves with the log-rank test (including test for trend)
- Paired or unpaired t tests
- Mann-Whitney or Wilcoxon tests
- Ordinary or repeated measures one-way ANOVA with Tukey, Newman-Keuls, Dunnett or Bonferroni post tests, or the post-test for trend
- Kruskal-Wallis or Friedman nonparametric one-way ANOVA with Dunn's post test
- Fisher's exact test or the chi-square test. Calculate the relative risk and odds ratio with confidence intervals
- Two-way ANOVA, even with missing values with some post tests
- Repeated measures two-way ANOVA with some post tests

Clinical (diagnostic) lab statistics

- Bland-Altman plots
- Receiver operator characteristic (ROC) curves
- Deming regression (type ll linear regression)

Graphing features:

Axes and ticks

- Linear, log10, or log2 scale, ascending or descending numbering.
- Segment axes with up to two breaks (gaps) per axis.
- Select orientation of tick marks and adjust major and minor intervals. Choose tick length.
- Label ticks using decimal, scientific, 10^X, or notation.
- Place custom ticks and labels anywhere on an axis.
- Offset X and Y axes.
- Add a right-hand Y axis.
- Choose number of decimal points for axis numbering.
- Precede axis numbers with a prefix (i.e. "$") and follow with a suffix (i.e. "%")

- Numbering under X axis can be at any angle.
- Move numbering and axis title closer to, or further from, the axis.

Symbols, lines, and graph types

- XY graphs, bar graphs (vertical or horizontal), box-and-whisker plots, and scatter plots.
- Plot hundreds data sets on a single graph. Add or remove data sets.
- Create graphs with no frame, a plain frame, a frame with ticks, or a frame with a grid.
- Adjust size and shape of graph by specifying dimensions or dragging with the mouse.
- 14 different symbols in 9 sizes.
- 5 line patterns (dotted, dashed, etc.) in 7 line thicknesses and 16 colors.
- Connect points with a line, staircase, or spline curve.
- Start point-to-point lines at the origin or the first data point.
- Change origin position: lower left, automatically selected, or custom.
- Built-in drawing tools--lines, arrows, boxes, circles, ovals, and arcs.

Error bars

- Automatic calculation of error bars from replicate values.
- Plot mean and SD, mean and SEM, mean and 95% CI, mean and range, median and range, or median and interquartile range.
- Error bars can be above or below the point, or both, and with caps or without.
- Specify error bar thickness.
- Option to suppress error bars.

Text and legends

- Automatic legends that are customizable.
- Easily access Greek letters, mathematical symbols, or international characters.
- Rotate text any angle.
- Add underlining, bold, super and subscripts, or change point size easily from the tool bar.
- Move graph and axis titles without losing centering.

Page layout features:

Graph arrangement

- Built-in page layout templates for automatic arrangement of multiple graphs.
- Move, resize, delete or add graphs.
- Include data, results tables and graphs on one page.
- Import images as .TIF, .PCX, .BMP, .JPG .GIF, .WMF (Windows) or PICT (Mac) files.
- Create portrait and landscape pages in one file.

- Tools to equalize the size, and align axes, of several graphs.
- 6 levels of zoom.
- Layouts will automatically update when you edit a graph or data plotted on the graph – even if the graph comes from a different Prism file.

Page enhancements

- Draw lines, arrows, boxes, circles, ovals and arcs.
- Add text, including Greek letters and super- or subscripts.
- Align objects (left, right, center, top, bottom) or align graphs by X or Y axes.
- Send to back. Bring to front.
- Duplicate objects or groups of objects.
- Group and ungroup objects.
- Use rulers, snap to guidelines, superimpose grid.
- Choose any color for any data set or object, and define your own palette of custom colors.
- Embed OLE objects, such as equations and WordArt. (Windows only)

Embed data and results tables on graphs or page layouts

- Paste any portion of a data, results or info table onto a graph or layout.
- Customize the table with a border, grid lines, or titles.
- Create text tables as well as numerical tables.
- Place any number of tables on one graph or layout page.
- Prism automatically updates tables when you edit the data.

Publication quality output

- Print in color or black and white.
- Copy and paste into Word or PowerPoint.
- One-click copy and paste into a new slide in PowerPoint (Windows only).
- Embed or link a Prism graph into PowerPoint or Word using OLE (Windows only).
- Export as a wmf (Windows) or pict (Mac) file.
- Export as a bitmap in png, bmp, jpg, or tif format at up to 1200 dots per inch.
- Choose RGB or CMYK colors. Choose whether to include background color in exported file.
- Email an entire file, or just one page, right from Prism (Windows only).
- Post one graph or layout, or all graphs or layouts, to a web server.