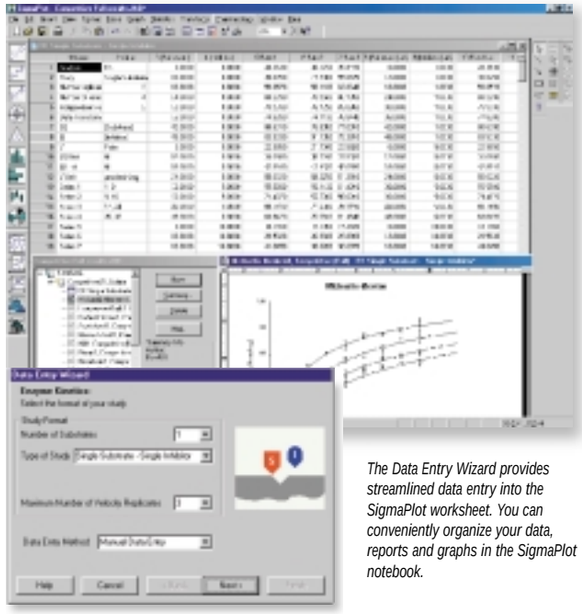
Analyze and Present Your Enzyme Kinetics Data – Quickly and Easily

SIMPLIFIED DATA MANAGEMENT TO ORGANIZE YOUR DATA & RESULTS

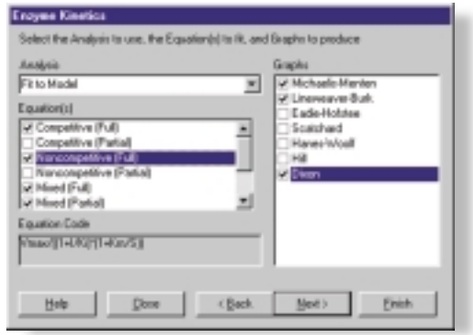
Fast analysis starts with the module's Data Entry Wizard. The Data Entry Wizard provides streamlined data entry into the SigmaPlot worksheet. It automatically determines the data column assignments based on the study type you select and makes setting up your data in the worksheet a breeze. Cut and paste data from any application or enter your data manually. The module allows you to select the units of your velocity or other dependent variable values from a drop down list. These units are carried to the worksheet and to the final graphs. Replicate velocities may be entered, and for inhibition studies, you can choose to vary either the substrate or the inhibitor concentrations for each series. Select from lists of unit values for substrate and velocity or enter your own; the units are carried through to the reports and graphs. And once you run your analysis, you can organize your reports, graphs and equations in the SigmaPlot Notebook.



The Data Entry Wizard provides streamlined data entry into the SigmaPlot worksheet. You can conveniently organize your data, reports and graphs in the SigmaPlot notebook.

SELECT FROM A WIDE RANGE OF BUILT-IN MODELS

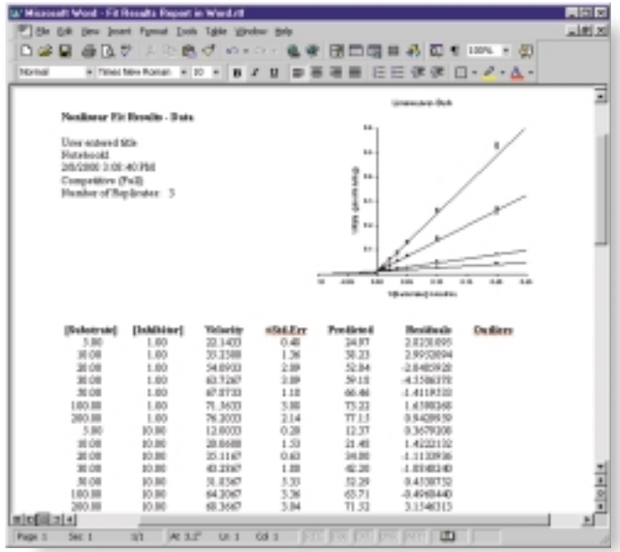
Select from multiple equation groups to analyze your data. The module provides 40 different built-in equations to characterize different types of reaction mechanisms. It automatically estimates the initial parameters for the selected model(s), and uses the Marquardt-Levenberg algorithm to determine the parameter values. You get a detailed statistical report as well as a data report that includes that includes the Km, Ki and Vmax values and their standard errors. You can simultaneously fit and compare multiple models and graphs from library of built-in equations. You can also enter your own custom equations and save them for future use.



Choose from eight different equation groups to model your data. Visualize your results with any one of the built-in graph types.

EASILY DETERMINE THE BEST-FIT INHIBITION MODEL FOR YOUR DATA

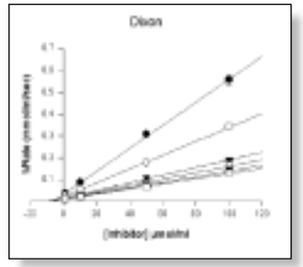
To compare the different inhibition models, the Enzyme Kinetics Module provides a detailed report with complete statistical analysis for each model, as well as provides information on comparing the different models. Several goodness of fit criteria including Akaike's AIC are provided to determine the best model. Statistical results include parameter value confidence intervals, a residual runs test and outlier detection. The data report includes replicate mean velocities and their standard errors, the predicted and residual values from the curve fit and an indication of data outliers. The statistical report generated for each model includes the parameter values with their standard errors and 95% confidence intervals, Akaike, R2, sum of squares, standard error of the regression, and the significance level for the runs test. The selected models can be automatically ranked by goodness of fit.



The Module provides statistical, data and model comparison reports including kmi, ki, Vmax and their standard errors.

SEE RESULTS CLEARLY WITH INTERACTIVE GRAPHS

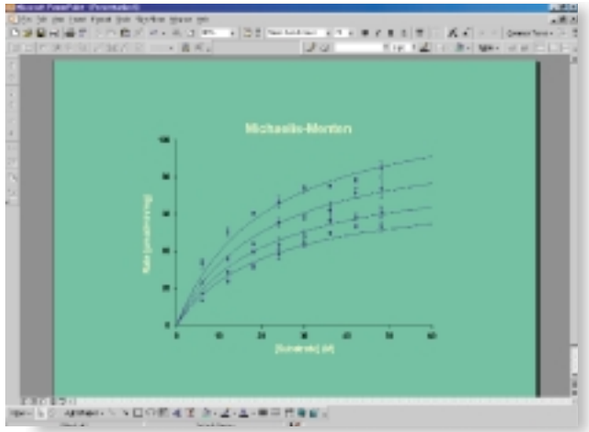
You can create any one or all of the built-in graphs provided for each study. The module automatically generates interactive graphs you choose to display your results. You can modify the graphs as desired to present your results exactly the way you want to using SigmaPlot's ability to customize your graphs. Many of the graph algorithms automatically determine where fit lines intersect the axes and present the graphs in this manner. To help determine the type of inhibition, the curve fit lines are designed to allow you to extend the graph axes to show fit line intersection.



Easily customize graphs provided to get the exact graph you want.

PUBLISH YOUR WORK ANYWHERE

The Enzyme Kinetics Module runs seamlessly with SigmaPlot. You can easily create custom reports of your results including tables and graphs, incorporate your graphs into presentations or export your graphs to a wide range of graphic file formats to send it for publishing in journals. You can also create an HTML output of your graph and report to disseminate on the World Wide Web.



Use SigmaPlot's presentation capabilities to create stunning presentations, send your graphs for publication or publish on the World Wide Web.

ENZYME KINETICS MODULE FEATURES

DATA MANAGEMENT

- Cut and paste data from any application or enter data manually
- Enter units for velocity, substrate and inhibitor concentration
- Vary substrate concentration, inhibitor concentration or both
- Allows replicate measurements
- Handles missing values
- Can numerically modify substrate, inhibitor and velocity data
- Formatted worksheet with column protection
- Custom labels for graph, axis and units

POWERFUL NON-LINEAR CURVE FITTER

- Automatic initial parameter estimation
- Marquardt-Levenberg algorithm to determine parameter values
- Fit built-in equations or enter your own

BUILT-IN EQUATIONS FOR DIFFERENT STUDY TYPES INCLUDE:

- Single Substrate – six equations
- Two Substrate – four equations
- Single Substrate – Single Inhibitor – eight equations
- Tight Binding Inhibition – four equations
- Enzyme Activator – four equations
- First Order Rate – two equations
- pH Rate Profile – six equations
- Protein Denaturant Melt – one equation
- Protein Temperature Melt – one equation
- Exponential Decay – four equations
- Regression – one equation

BUILT-IN INTERACTIVE GRAPHS

- Michaelis-Menten, Lineweaver-Burk, Eadie-Hofstee, Scatchard, Hanes-Woolf, Hill, Dixon and Residuals.
- Other built-in graphs: y vs. pH, log(y) vs. pH, v vs. t, log(y) vs. time, y vs. [Denaturant], y vs. [Temperature], y vs. x

(feature list continues)

Enzyme Kinetics Analysis Doesn't Get Any Easier

The Enzyme Kinetics Module is an add-on to SigmaPlot 2000 that provides the curve fitting and graphing capabilities you need to analyze and present your enzyme kinetics data — quickly and easily. The module follows SigmaPlot's tradition of award-winning interface, ease-of-use, and intelligent wizards to guide you through your entire analysis. Just enter your data, select the type of study and the equation you would like to fit, and utilize the interactive graphs to display your results. Using SigmaPlot's powerful non-linear curve-fitter, the module fits the selected equations to your data, and also provides the interactive graphs you need to see to study the kinetics mechanism. What's more, you get a detailed report complete with all statistical parameters for each model you fit so you can easily compare the different models to identify the best one for your data. It's that easy!

PLUS, THE POWER OF SIGMAPLOT

In addition to specialized analysis and graphs the Enzyme Kinetics Module provides, you have access to all of SigmaPlot's analytical, graphing and presentation capabilities! You can get started and publish your results faster than you ever imagined. And, SigmaPlot provides the flexibility you need to customize your graphs and present your results in exactly the way you want. In fact, SigmaPlot's graphing flexibility has inspired the readers of *Scientific Computing and Instrumentation* to award SigmaPlot their prestigious Reader's Choice Award eight years running!

"SigmaPlot now sets the standard for technical graphing."

Dr. Barry Simon, Ph.D.
PC Magazine, April 1999

(feature list continued)

OUTPUT/REPORT GENERATION

- Full report generation complete with statistical analysis Goodness of fit criteria includes Akaike's Information Criterion (AIC)
- The Data Report includes replicate mean velocities and their standard errors, the predicted and residual values from the curve fit and an indication of data outliers
- The Statistical Report generated for each model includes the parameter values with their standard errors and 95% confidence intervals, AICc, R2, sum of squares, standard error of the regression, and the significance level for the runs test
- The Model Comparison Report provides a comparison of the different models

SYSTEM REQUIREMENTS

SigmaPlot 6.1 or higher; 5MB hard drive space

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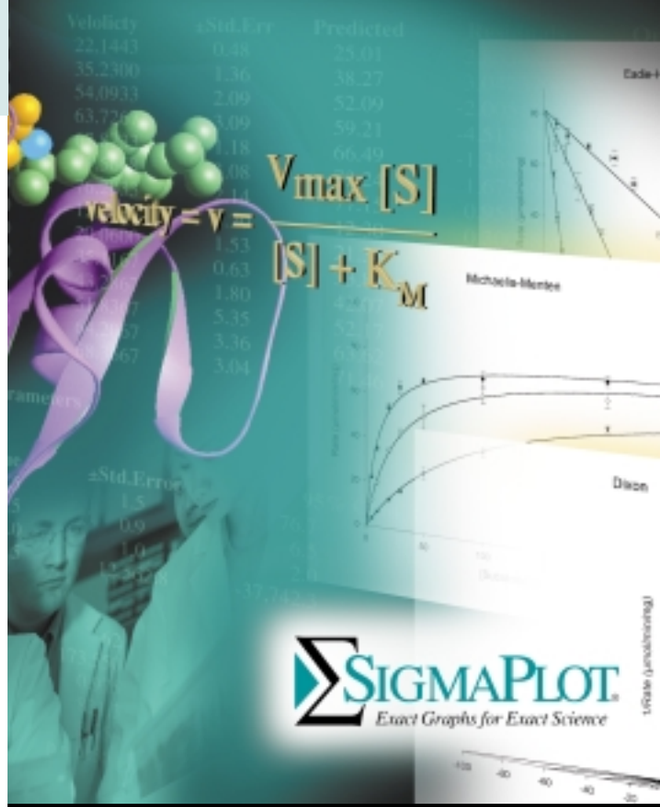
Enzyme Kinetics Module

The automatic choice for analyzing enzyme kinetics data



Add-on software for SigmaPlot