acslXtreme OPTIMUM™ Provides Fast and Reliable Optimization of Pharmacokinetic Models

AUSTIN, TX – The AEgis Technologies Group announces acslXtreme OPTIMUM™, a dramatic enhancement to the company’s popular acslXtreme® Pharmacokinetic modeling software. acslXtreme OPTIMUM gives drug developers and risk assessors robust parameter estimation, model optimization, sensitivity analysis, and Monte Carlo analysis capabilities that are critical to solving many complex applied mathematical problems and for optimizing model parameters against experimental data.

acslXtreme is a flexible and powerful Pharmacokinetic modeling tool that predicts drug dispersion, residual drug levels, and toxicity. The acslXtreme Pharmacokinetics Toolkit contains model PowerBlocks™ created from classical PK and PBPK/PD theory that enable the user to quickly create complex and reliable models of biological systems.

acslXtreme OPTIMUM takes this modeling capability to the next level, with powerful analytical capabilities, a sophisticated graphical user interface (GUI), and wizards that provide guided input and eliminate the need to type in commands.

Parameter Estimation enables users to fit nonlinear model variables to experimental data. Fitting can be performed on single or multiple data sets; and the fitting algorithm takes into account measurement error, which may be modeled as either relative or absolute. acslXtreme OPTIMUM uses the Maximum Likelihood Estimation (MLE) algorithm for parameter estimation, which is recognized as one of the most flexible

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and robust methods available. The advanced graphical user interface ensures complete model control while running parameter estimations.

**Min/Max Optimization** is achieved using a variety of robust optimization algorithms. Objective functions may be defined with variable parameters and design constraints, as applicable; the software then provides reliable results in a very short run time using the compiled simulation. acslXtreme OPTIMUM uses a number of well-accepted algorithms, including those based on Nelder-Mead, Conjugate Gradient, and Quasi-Newton techniques, which can be adapted to different types of models.

**Sensitivity Analysis** determines which input parameters are relevant to a particular model optimization problem. acslXtreme OPTIMUM calculates sensitivity coefficients using finite difference methods. These coefficients are the partial derivatives of model responses with respect to model parameters. Computed sensitivity coefficients may be normalized to either the response variables or model parameters, facilitating accurate comparisons of the contributions of different parameters to the objective function.

**Monte Carlo Analysis** determines dependencies between model input parameters and output variables using Monte Carlo techniques. The speed of natively compiled simulation code makes large numbers of Monte Carlo runs feasible, and acslXtreme’s intuitive graphical interface makes setting up sophisticated analysis studies quick and easy. A wide variety of reliable, built-in random number generators and probability distributions are included for sampling inputs to each Monte Carlo run.

For more information about acslXtreme and acslXtreme OPTIMUM, visit www.acslXtreme.com.

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About The AEgis Technologies Group
The AEgis Technologies Group, Inc. provides next-generation modeling and simulation software for the pharmaceutical, risk assessment, industrial process, automotive, and defense/aerospace markets. AEgis offers several training, maintenance, and service programs to its customers and also provides local sales support throughout Europe, Asia, and The Americas. The AEgis Technologies Group is located at 13062 Highway 290 West, Austin, TX 78737; Tel: 800-647-2275; Fax: 512-615-3574; E-mail: sales@acslXtreme.com; Web: www.acslXtreme.com

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