

Phoenix NLME™ is the premier PK/PD modeling engine that powers Certara's industry-leading Phoenix® software, and is now available as a stand-alone software that can be driven by programming in R. In both implementations, NLME is user-friendly and easy-to-learn. Phoenix NLME is the most powerful non-linear mixed effect modeling engine available to scientists today and is used by 1,400 scientists, 18 of the top 20 pharmaceutical companies in the world, renowned academic institutes, and multiple regulatory agencies, including the US Food and Drug Administration (FDA).

NLME includes a full suite of algorithms for non-linear mixed effects models including QPPEM, the most advanced expectation maximization algorithm available. In tested models, QPPEM was found to be consistently the fastest to converge among EM methods, demonstrating the advantage of this approach¹.

Included Algorithms

Individual and Pooled Data Analysis

- Naïve Pooled

Population Analysis

Parametric Method

- FO
- FOCE-LB
- FOCE-ELS
- IT2S-EM
- Laplacian
- AGQ
- QPPEM

Non-parametric Method

- Non-parametric Engine

Built from the ground up on the Phoenix workbench architecture, Phoenix NLME enables users to focus on modeling, and not on the tools or coding required to implement the modeling. The result is more time for analysis and strategic decision-making. Plus, Phoenix NLME is the first PK/PD modeling software to be out-of-the-box grid-enabled, supporting remote parallel execution on compute platforms.

Most User-friendly PK/PD Software Available

Phoenix NLME uses a modern, intuitive graphical user interface (GUI) that provides a seamless transition between modeling ideas and modeling execution.

- Select from a complete library of built-in models or use the graphical model editor for quick customizations. In either case, the full model code is available using Phoenix Modeling Language (PML), a modern modeling language that is easy to read and understand.
- Informative diagnostic messages are provided during model building and execution to quickly and easily identify and remedy errors in a model. Phoenix NLME automatically produces the required diagnostic tables and plots, enabling instant evaluation of model results.
- Along with the Model Comparer tool, the model selection process can be automated with Run Options such as Covariate Search, Covariate Shotgun, and Scenarios.
- Model validation can easily be performed using Bootstrap and Visual Predictive Check (VPC). The user-friendly VPC interface provides stratification and binning options to create easy to interpret plots with confidence bands.

Combining these innovative features for modeling with data preparation, data formatting, statistics, table, and plotting tools built into the Phoenix workbench makes Phoenix NLME a modern tool for today's PK/PD modeling scientist.

Recent Enhancements

- Model delayed outcomes using the automated and fully integrated discrete and distributed delay functions
- Greater flexibility and broader applicability with the Visual Predictive Check function
- Significantly reduce model run times via parallelizing jobs on remote compute platforms
- Seamlessly pair Phoenix NLME with your Compute Grid to accelerate model runs