CERTARA

Phoenix WinNonlin 8.0: Updated NCA Engine and New Validation Suite

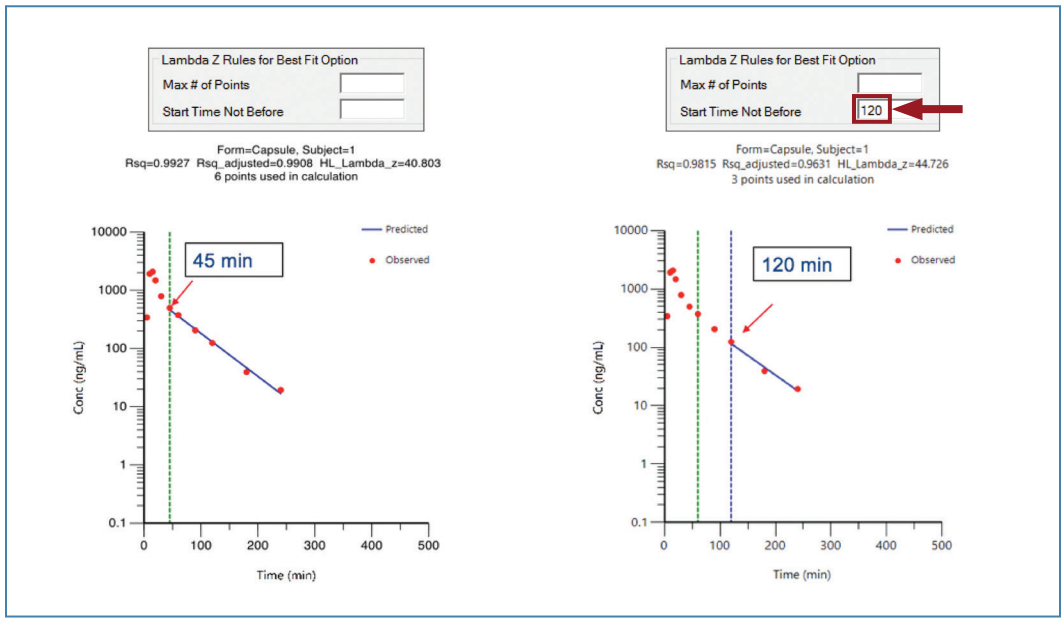
Phoenix WinNonlin 8.0 takes non-compartmental analysis (NCA) to a new level by adding many commonly calculated NCA parameters to the standard output, providing the ability to define custom NCA parameters, business rules for calculating the terminal slope, and acceptance flags based on terminal slope quality assessments. These new features minimize post-processing work and increase transparency with analysis.

Additionally, a new validation suite is embedded within the Phoenix 8.0 application and will be released concurrently with Phoenix 8.0. The validation suite provides an affordable, turnkey process that is significantly faster than other validation options.

Business Rules for Terminal Slope Calculation

Organizations can set strict criteria for the calculation of the terminal slope in NCA. Those rules can be implemented directly in Phoenix 8.0's updated NCA tool. Users can specify the maximum number of points to be included in the regression or the earliest time to be used (see figure below). The settings are retained and can be reviewed for compliance with organization policies and procedures.

Example of Lambda Z Rules for Best Fit Option: Before and After Setting "Start Time Not Before"



In addition, users can define acceptance criteria for adjusted r^2, % extrapolated AUC, or Span (lambda z sampling interval/$t_{1/2}$). All calculated values will be marked as meeting the criteria, not meeting the criteria, or missing. This permits easy post-processing of results based on quality standards for lambda z.

New Parameters for Non-compartmental Analysis

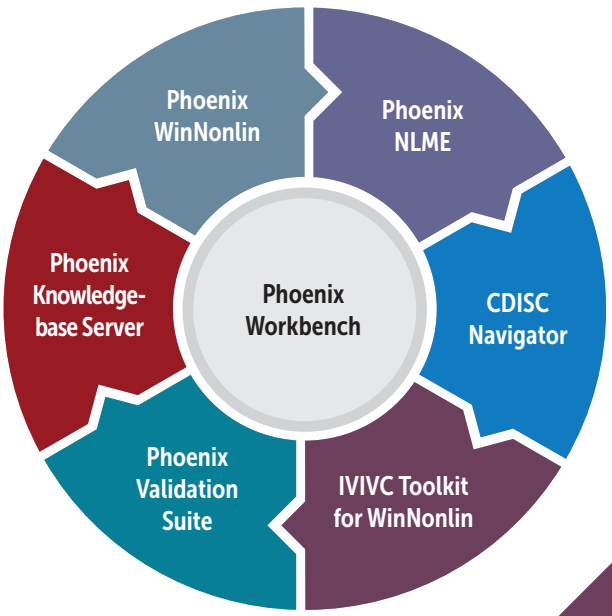
The automated calculation of over a dozen of parameters for plasma and urine will save time by reducing manual work and reduce errors with non-compartmental analysis in Phoenix WinNonlin 8.0.

- Plasma parameters
  - Swing (single dose and steady-state)
  - %Fluctuation (single dose and steady)
  - C_{last} (predicted)
  - C_{tau} (observed and predicted)
  - Span
  - AUC_{last}/Dose
  - AUC_{Tau}/Dose
  - AUC_{Tau} %Extrap
  - Lambda_z_intercept
  - $N_{samples}$
  - Dose
- Urine parameters
  - $Rate_{last}$ (predicted)
  - $AURC_{last}$/Dose
  - $N_{samples}$
  - Dose
- User-defined parameters
  - Computed concentrations at any time point (uses interpolation)
  - Arithmetic combinations of any NCA parameter (eg, partial AUC/Dose)

New WinNonlin 8.0 Validation Suite

With the new validation suite being integrated into Phoenix 8.0, there is no wait to validate Phoenix WinNonlin 8.0 implementation, and there is no need to install a separate application.

The average run time for the validation suite takes less than 30 minutes, significantly less than other validation options which can take days. During execution of the validation suite, other applications can still be run and used, resulting in minimal down-time. After the validation suite has finished executing, it documents confirmation of reference results and the results are saved as a Microsoft Word document and immediately available in Phoenix 8.0 for easy reference.



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