



Aptuit Verona

FACTSHEET



Clinical Pharmacometrics

Our pharmacometrics team provides planning and analysis support for a wide range of clinical studies as well as entire clinical plans from First-Time-In-Human through to proof of concept clinical trials. We can help you with the following:

Study Design

We can utilize our considerable background in pharmacokinetics, modeling, simulation and statistics to ensure study objectives are met in terms of optimal PK and PD sampling, study sample size, as well as randomization and identification of relevant statistical methods.

PK Analyses

We can assess the rate and extent of systemic exposure to your test compound (e.g. C_{max}, t_{max}, AUC, t_{1/2}, etc.) using non-compartmental analysis. Thanks to fast PK turnaround, pharmacometric input helps guiding dose escalation decisions integrating PK review with modeling and simulation tools, thereby allowing the enablement of optimal population and individual assessment of the maximum tolerated dose.

Statistical Analyses

We can provide statistical expertise to assess bioequivalence, bioavailability, food effect, drug-drug interactions and dose proportionality PK studies. We can also provide statistical expertise for the analysis of PD, efficacy and safety endpoints. Applied statistical methods can range from univariate to multivariate analyses, linear and logistic regression, mixed-models for cross-over or longitudinal trials, survival analyses, nonparametric analyses of categorical data and interim Bayesian monitoring of adaptive designs.

A Statistical Analysis Plan (SAP) is prepared and approved before the clinical database is frozen, allowing for exhaustive details of statistical methods that will be performed on the data collected. This also provides a table of contents (as well as mock-up examples) of the forecasted displays. If the study protocol foresees formal statistical interim analysis, statisticians will plan for them in the SAP and perform them at the appropriate time.

Programming

SAS programs (version 9.2 or higher) are written once the study is completed and the database is frozen they are tested and run by programmers and statisticians. This effort consists of first creating datasets, performing descriptive and inferential statistical analyses and producing data displays in alignment with what was stated in the study protocol and detailed in the SAP.

Modeling and Simulation

The Aptuit Pharmacometrics Team can provide decision making tools based on advanced methodologies in modeling and simulations:

- Human PK prediction on the basis of in-vitro and in-vivo preclinical data
- Application of therapeutic drug monitoring to optimize therapy
- Pharmacokinetic interpretation of the effective drug treatment
- Prediction and management of possible drug interaction liabilities
- Optimization of treatment for particular patient populations
- Systematic application of model-based drug discovery concepts to drug development resulting in improvements
- Quantitative clinical trial simulation models to improve trial design and to predict outcomes

PK/PD Modeling

Clinical pharmacometrics has a well-established expertise in understanding and describing the PK/PD relationship potentially arising in a variety of clinical studies. Specific analysis can be provided by Aptuit Pharmacometrics in order to investigate the relationship between drug dose, plasma concentration, biophase concentration (PK) and drug effect or side-effects (PD). Modeling approaches used include standard non-linear and non-linear mixed effects (population) modeling techniques. Relevant patient covariates can be explored/inserted in PK/PD models as well.



Aptuit Verona

FACTSHEET



Clinical Pharmacometrics

Regulatory Compliance

Studies are analyzed and reported in accordance with GCP regulations and relevant ICH, EMEA and FDA guidelines.

Software

Report tables, listings and figures can be produced using Industry standard software including WinNonlin Pro™ (Pharsight Corporation), SAS™, NONMEM™ (Globomax Inc.) and Winbugs™.

Reporting

Integrated pharmacometrics reports collate the contribution of statisticians and pharmacokineticists according to the study objectives. This document consists of a description of the methods applied as well as a presentation of the key results supported by statistical and pharmacokinetic interpretation. All tables, listings and figures produced and quality checked (QC'ed) during the analyses stage reinforce the summary and are enclosed into the reporting package.

Additional Aptuit Capabilities

Aptuit offers a comprehensive suite of drug development services that range from drug discovery through to market, including consultancy services, API development and manufacture, preclinical technologies, clinical sciences, pharmaceutical development services, large and small scale manufacturing, IVRS and clinical packaging and logistics, across a wide range of compounds, dosage forms and delivery systems.

For information about Aptuit's services, please call or email:

+44 131 451 2451 Europe

+1 816 767 3900 North America

email: info@aptuit.com

visit our website: www.aptuit.com

Engineering a better drug development process through scientific excellence.