



Aptuit Verona

FACTSHEET



Aptuit Verona Overview

Aptuit Verona

Our site in Verona, Italy, represents a history of long-standing scientific expertise and specialized knowledge of integrated drug discovery and development, as well as a unique understanding of indication-specific drug discovery. The Verona facility employs over 400 highly-skilled drug discovery and development experts, state-of-the-art equipment and scientific tools that enhance Aptuit's ability to constantly offer the best science, service, and people in the industry to our clients. In addition, the site has a world class reputation for neuroscience discovery and development as well as cardiovascular and anti-infectives experience.

By broadening our geographical base to Italy, we are continuing to build our global presence through an integrated network of facilities, depots, and strategic hubs to better serve our clients.

Increased Service and Product Offerings

Since Aptuit's inception, we have built a world-class, integrated drug development organization. The competencies available at Verona not only build and strengthen our offering in key scientific services, but also extend the range of our offering into drug discovery and clinical trial design and management as part of our company's strategic growth plan.

We offer integrated drug discovery and drug development solutions beginning from target validation, through hit identification, lead generation, lead optimization and FIM enabling studies all the way to clinical "proof of concept" studies and beyond. This allows clients the opportunity to work with a single service provider for their drug discovery and drug development needs with seamless transition from one stage to the next and associated benefits of timeline compression. With all disciplines co-localized on the Verona site and integrated project management support, our integrated approaches benefit from a highly effective team-environment and shorter cycle times during the iterative stages of drug discovery, thus ensuring projects are progressed efficiently and on-time in a cost-effective manner.

Services available at our Verona facility include:

Discovery Pharmacology

- Target distribution (Immunohistochemistry, in situ hybridization, receptor autoradiography)
- Target functional characterization
- Electrophysiology in cells and integrated systems
- Native tissues, cell lines and primary cells
- In vitro profiling (GPCRs, ion channels, transporters, enzymes) in recombinant and native systems
- Reagent generation and assay development
- Liability/selectivity panel
- Range of validated animal models (CNS, Cardiovascular, Drug Addiction, Sleep, Food)
- Animal model development
- Translational biology (Receptor Occupancy, Biomarkers, Microdialysis, Imaging)

Medicinal Chemistry

- Lead Generation
- Lead Optimization
- Parallel multi-parameters optimization
- Chemical series exploration (design and/or synthesis)
- Hit and lead explosion using parallel synthesis
- Structure-activity relationship determination
- Lead series identification through Fast-follower approach

Computational Chemistry

- Ligand Based Drug Design
- Structure Based Drug Design
- Chemometrics
- Cheminformatics
- Chemical Library Design



Aptuit Verona Overview

Analytical Sciences

- Full spectroscopic characterization
- Reaction monitoring and kinetics
- Ligand-target interaction studies
- Chiral and achiral analyses and preparative separation
- Method development including GMP and non-GMP, genotoxins, GC, trace levels
- Method Validation according to ICH guidelines appropriate
- Stability in different conditions including, protocol design and study management, data evaluation, report and CMC packages
- Characterization/release of materials for the whole process from SM to API and DP
- Support to API and DP manufacturing

Toxicology and Pathology

- Early screening of toxicity, including in silico prediction
- Liability Assessment of biological targets
- Regulatory toxicity studies (GLP) up to 6 months
- Investigative & problem solving studies
- Integrated investigative capabilities, including biomarkers identification and validation
- Integration of Safety Pharmacology endpoints in General Toxicity studies
- Regulatory and Investigative Pathology, including electromicroscopy (GLP)
- Non Clinical Assessment of Safety and regulatory document preparation

Safety Pharmacology

- Neuro-Cardio models
- Neurobehavioural tests (Irwin, FOB)
- CV in vivo telemetry
- Echocardiography
- Video-tEEG
- Rotarod/motor coordination and spontaneous LMA
- Abuse liability assessment
- Liability/selectivity and cardiac safety panel
- Potential for proconvulsant liability evaluation

Drug Metabolism & Pharmacokinetics

- High Throughput
- Metabolic stability
- Drug Interactions (enzymes & transporters)
- Permeability
- Plasma, Blood and other tissues binding
- Bioactivation
- Non-clinical in-vivo pharmacokinetics
- Detailed Metabolite Profiling and Identification – MIST
- Interspecies scaling & mechanistic PK/PD modelling

Bioanalysis

- Laboratory GLP accredited
- Preclinical GLP bioanalytical support
- High throughput sample analysis
- Dried Blood Spot technology
- High sensitivity method development and validation
- Clinical Support Services - Support for Phase I, II, III and IV Clinical PK
- Fast sample analysis turnaround (<48 hours for FIM studies)

API Development and Manufacture

- Manufacture of API both GMP and non-GMP
- Fast chemical process transfer from laboratory to Pilot Plant scale
- Robust technology transfer to Primary Manufacturing, with the possibility to apply QbD principles
- Discovery and development of innovative, cost-effective, and well-understood synthetic processes
- Salt selection and polymorph screening
- Definition of robust API isolation processes: crystallisation, isolation, washing and drying
- API manipulation to improve physical-chemical properties to meet Critical Quality Attributes
- Delivery of required reference standards to support analytical method development for API release and stability controls
- CMC data preparation for international regulatory submissions



Aptuit Verona

FACTSHEET



Aptuit Verona Overview

Pharmaceutical Development

- Design, development and optimization of investigational dosage forms for preclinical/clinical phases
- Application of simplified/tactical formulation approaches and straightforward manufacturing processes in early development phases
- Understanding of the biopharmaceutics of oral dosage forms (*in vitro/in vivo* correlations)
- Provision of clinical supplies (manufacturing of intermediate bulks and primary packaged materials)
- Quality-by-Design concepts application to dosage form development (risk assessment and management of Critical Quality Attributes - CQAs, Critical Process Parameters - CPPs) and related analytics
- Physical Properties characterization to support drug development from API to final process and dosage form
- Genotoxic risk assessment on Drug Product
- CMC data preparation to support international regulatory submissions for early and late clinical phases
- GMP manufacturing facilities for oral dosage forms equipped with barrier technology for highly potent compounds

Clinical Sciences

- Design and implementation of clinical plans up to Phase II
- Design, management, analysis and interpretation of clinical pharmacology studies
- Design, management, analysis and interpretation of Phase II clinical studies
- Statistical analysis and interpretation
- Clinical Pharmacokinetic analysis and interpretation
- Pharmacometrics services
- Modelling and Simulation
- Translational & Experimental Medicine
- Medical governance

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.

