



Translational Biomarkers

Advancements being made in genomics, proteomics and systems biology are transforming the drug discovery and development process, while facilitating our understanding of the molecular underpinnings of disease. Translational, or “bench-to-bedside,” research involves expediting the translation of these scientific discoveries in to clinical practice.

Part of the translational research process involves the identification of predictive biomarkers that can provide early evidence of safety and efficacy while a molecule is still in pre-clinical discovery and development, creating valuable candidates with high probability to succeed in subsequent milestones, potentially reducing the overall time and cost of drug development.

Predictive biomarkers that facilitate the go / no go selection of lead compounds for development include markers of efficacy, response, safety constituting unprecedented pharmacodynamic indicators of drug activity and toxicity for subsequent use in clinical development.

We can offer validation and quantification of a wide range of analytes in complex biological samples (including serum, plasma, urine, and tissues) from preclinical and clinical studies. We also provide our clients with a multidisciplinary approach in the interpretation of data generated from biomarker analysis in complex integrated studies.

Biomarker services

- Toxicity biomarkers (including cardiac, kidney, hepatic)
- Acute stress markers
- Inflammation markers
- Metabolic markers and adipokines
- Hypothalamic neuroendocrine markers
- Neuroplasticity markers
- Sex hormones

Integrated with other Non-clinical services including:

- Preclinical Imaging, In vivo Pharmacology, Toxicology & Pathology

Available technologies for biomarker analysis

- Genomics (qPCR, PCR, ISH)
- Capillary electrophoresis
- Chromatography (HPLC, UPLC, LC/MS, LC/MS-MS)

- Proteomics and immunoassays (RIA/IRMA, ELISA/EIA, IHC)
- Meso Scale Discovery® and Luminex® platforms used for multiplex analysis
- Flow cytometry

By using all these technology platforms, we can help you in performing:

- Biomarker assay development including analytical and biological validation
- Biochemical phenotyping of genetically altered animals and characterization of *in vivo* disease models
- Screening biomarkers and toxicology panels for analyzing pathways, target classes, disease sets and potential toxicity of drugs
- PK/PD studies to correlate PD response to drug exposure
- Efficacy studies to monitor the drug-target interaction
- Toxicity studies to monitor the adverse effects of a specific drug
- Biomarkers analysis in samples from preclinical and clinical studies

Support services for the measurements of central and peripheral biomarkers:

- *In vivo* microdialysis in rodents (brain monoamines and metabolites)
- Blood collection in physiological conditions by using Accusampler® apparatus (automated serial blood collection in freely moving rats)

Regulatory Compliance

We can also provide our clients with high quality services conducted under the Good laboratory Practice (GLP) guidelines in regulatory-compliant facilities.

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:

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