Maximizing Bioanalytical Insights With Microsampling and LC-MS/MS

ALTASCIENCES

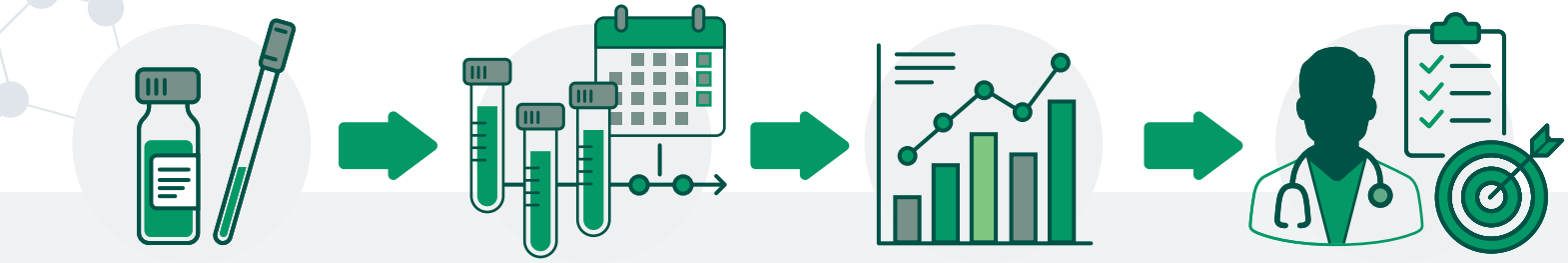
As advanced therapies become more complex, microsampling paired with sensitive LC-MS/MS technology enables more flexible, frequent sample collection to generate richer PK/PD and biomarker data while minimizing patient sampling burden.

With over 30 years of bioanalytical experience and specialized microsampling expertise, we develop and validate fit-for-purpose methods using techniques such as volumetric absorptive microsampling (VAMS), dried blood spots (DBS), and capillary microsampling. Our proven workflows address critical analytical challenges, including extraction recovery, matrix effects, assay sensitivity, analyte stability, and blood-to-plasma concordance to ensure reliable quantification from minimal sample volumes.



Benefits of Microsampling

The value of microsampling extends across the drug development program, creating a powerful progression from smaller samples to richer bioanalytical insights.



Smaller Sample

Blood collection volumes typically between 10 – 20 µL

More Sampling

Additional time points, remote collection during clinically relevant events (e.g. migraines)

Increased Data

Richer PK/PD profiles, improved drug-efficacy correlation, and additional samples for biomarker, metabolomic, and genomic analysis

Improved Decisions

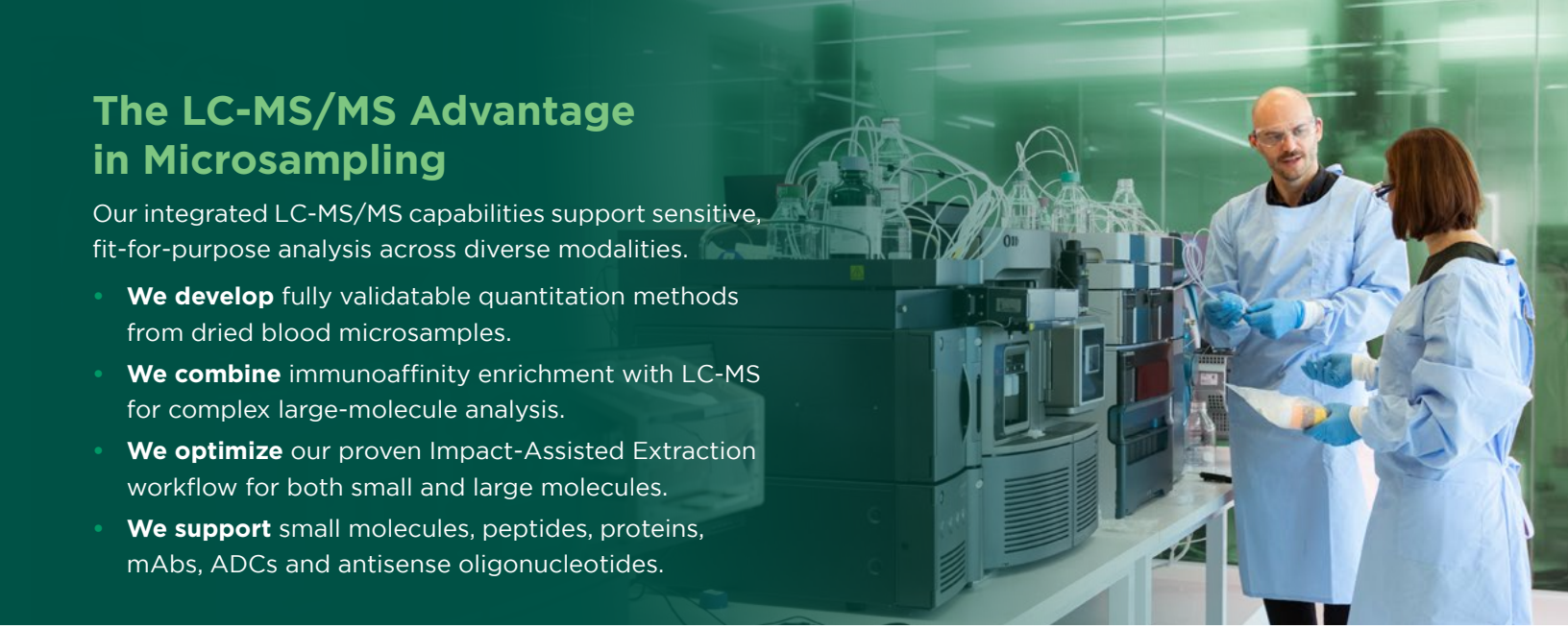
Greater data density translates to more timely and cost-effective drug development decisions

By applying microsampling across nonclinical and clinical development, we help optimize sample collection and analysis through expertise in device selection, extraction optimization, stabilization of labile analytes, and bridging to traditional matrices—all tailored to your molecule and study requirements.

The LC-MS/MS Advantage in Microsampling

Our integrated LC-MS/MS capabilities support sensitive, fit-for-purpose analysis across diverse modalities.

- **We develop** fully validatable quantitation methods from dried blood microsamples.
- **We combine** immunoaffinity enrichment with LC-MS for complex large-molecule analysis.
- **We optimize** our proven Impact-Assisted Extraction workflow for both small and large molecules.
- **We support** small molecules, peptides, proteins, mAbs, ADCs and antisense oligonucleotides.



Bioanalytical Expertise in Action

With expertise in microsampling and LC-MS/MS, we address bioanalytical challenges with innovative solutions, proven performance, and integrated support across development.

How do we address dried blood microsample recovery challenges due to hematocrit?
We leverage our time-tested Impact-Assisted Extraction workflow to eliminate biases.

How do we address microsample stability challenges?
We use LC-MS/MS to identify degradation pathways and inform stabilizing approaches.

How do we support confidence in regulated bioanalysis?
We apply our rigorous microsampling-specific SOPs to all our validated assays.

How do we support your program across development?
We connect microsampling capabilities from nonclinical through clinical development.

Integrated Bioanalysis From Nonclinical to Clinical

We support programs through integrated nonclinical, clinical, and bioanalytical solutions to address complex analytical challenges and translate emerging techniques into practical applications across drug development.

With dedicated LC-MS/MS laboratories and closely aligned scientific teams, you will benefit from coordinated study strategies, consistent analytical approaches, and seamless integration of nonclinical and clinical data to support informed decisions.

Together, microsampling and advanced LC-MS/MS enable flexible, data-rich bioanalysis, delivering more informative assessments and greater confidence in development decisions from discovery through clinical trials.

SPEAK WITH AN EXPERT

ALTASCIENCES

altasciences.com | contact@altasciences.com

© 2026 Altasciences. All Rights Reserved.