

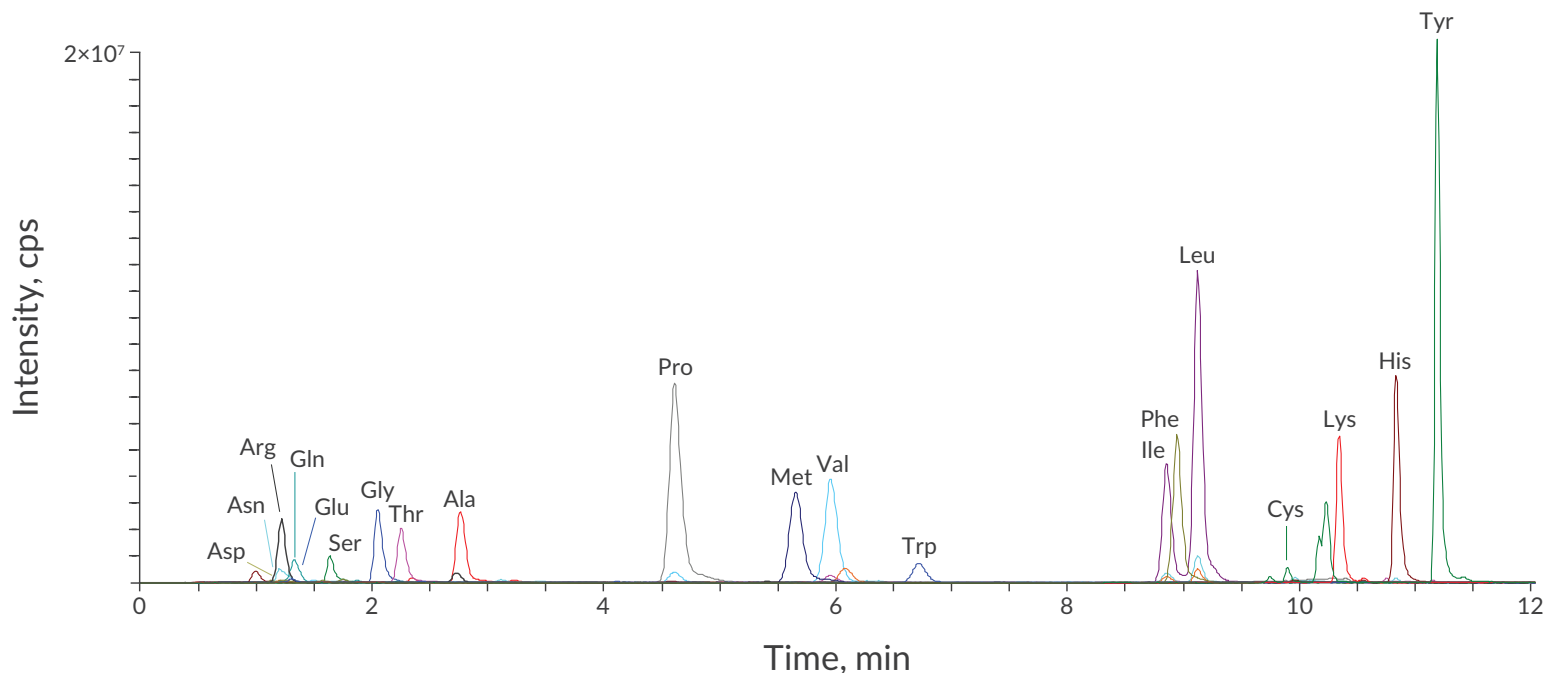
Amino Acids

Amino acids are the building blocks of peptides and proteins, and thus essential structural, signaling, and biocatalytic components of all known biological organisms. Free amino acids also play diverse functions, including pH and redox state modulation, signaling, and regulation of metabolism. Disruptions in the metabolism of amino acids contribute to a wide range of pathological conditions, and the circulating levels of amino acids are useful biomarkers of disease. Their accurate quantitation in biofluids and tissues is of interest to a broad variety of researchers.

Analyte Coverage

We offer an analytical service for the analysis of the 20 proteinogenic amino acids. The LC-MS/MS-based method can be customized to include additional nonproteinogenic amino acids or amino acid metabolites to suit any application.

Amino Acids	
Alanine	Leucine
Arginine	Lysine
Asparagine	Methionine
Aspartic Acid	Phenylalanine
Cysteine	Proline
Glutamic Acid	Serine
Glutamine	Threonine
Glycine	Tryptophan
Histidine	Tyrosine
Isoleucine	Valine



LC-MS chromatogram traces of dansyl derivatives of amino acids extracted from porcine liver.

Our Approach

We have optimized an extraction protocol followed by derivatization to quantitate the dansylated derivatives of 20 amino acids, both using plasma and liver tissue. Isomers leucine and isoleucine are resolved chromatographically, allowing their individual quantitation. The method can be adapted to additional biological matrices.

Our Advantages

- Our scientists are expertly trained and have decades of collective experience in the analysis, synthesis, and cell biology applications of small molecules such as amino acids.
- We use state-of-the-art instrumentation, reagents, and methods for all aspects of sample preparation, analyte extraction, LC-MS analysis, and data review to ensure consistent, high-quality data.
- The method is scalable, from pilot studies with a few samples to high-throughput studies with hundreds of samples.
- High-quality standards and internal standards enable accurate calibration curve preparation and reliable quantitation.
- Collaborative, flexible approach. The method can be customized to include, remove, or substitute analytes, or to be used with samples other than plasma or liver tissue. Please inquire for specific details.



See How We Can Meet Your Specific Project Needs
Submit the Contact Us form at www.caymanchem.com/analytical-chemistry