

Technical Datasheet

Analysis Name: Free Amino Acids by UPLC

Method Number: LI-00.562

Scope of Application: This method applies to the determination of free amino acids except tryptophan), in protein hydrolysates, clinical nutrition, infant formulas, infant cereals and similar products, coffee/tea and related products, amino acid premixes, juice (except theanine and cystine), purees, pulps, and vegetable products (e.g., carrots, sweet potatoes). It also applies to added methionine in soy - based infant formulas.

Description: Aqueous extraction of free amino acids with or without clarification using trichloroacetic acid (TCA). Determination of amino acids by derivatization with 6 – aminoquinolyl – N-hydroxysuccinimidyl carbamate (AQC) using the AccQ•Tag Ultra Method (Waters Corporation, Milford, MA, USA). Derivatized amino acids are separated using reversed phase UHPLC with UV detection at 260 nm.

**Sample Weight
Required:** 50 g

Analytical Platform: UPLC

Special Information: GOTAG components must be specified to be included with full profile or exclusively.
Methionine may be analyzed alone by selecting the FREE_METH variation.
Provide Certificate of Analysis (COA) or estimated levels for premixes.

Analyte Reported	Alias	Unit	Limit of Quantification Range**	Reproducibility*
Histidine	HIS	mg/100 g	4-50	15%
Asparagine	ASN	mg/100 g	3-40	15%
Serine	SER	mg/100 g	3-30	15%
Glutamine	GLN	mg/100 g	4-50	15%
Arginine	ARG	mg/100 g	4-50	15%
Glycine	GLY	mg/100 g	2-20	15%
Aspartic Acid	ASP	mg/100 g	3-40	15%
Glutamic Acid	GLU	mg/100 g	4-50	15%
Threonine	THR	mg/100 g	3-40	15%
Alanine	ALA	mg/100 g	2-30	15%
G-Aminobutyric acid	GABA	mg/100 g	3-30	15%
Theanine	Thea	mg/100 g	4-60	15%
Proline	PRO	mg/100 g	3-40	15%
Ornithine	ORN	mg/100 g	4-50	15%
Cystine	CYS	mg/100 g	3-40	15%
Lysine	LYS	mg/100 g	4-50	15%
Tyrosine	TYR	mg/100 g	5-60	15%
Methionine	MET	mg/100 g	4-50	15%
Valine	VAL	mg/100 g	3-40	15%
Isoleucine	ILE	mg/100 g	3-40	15%
Leucine	LEU	mg/100 g	3-40	15%
Phenylalanine	PHE	mg/100 g	4-50	15%

*Reproducibility: 17% for premixes, 20% for coffee components above 10mg/100g, and 40% for coffee components below 10mg/100g.

** Limit of Quantification range will change based on matrix and sample preparation.