

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.

Analyte Reported	Alias	Unit	Limit of Quantification Range	Reproducibility*
Histidine	HIS	mg/100g	0.52 - 48.49	15%
Asparagine	ASN	mg/100g	0.44 - 41.25	15%
Serine	SER	mg/100g	0.35 - 32.84	15%
Glutamine	GLN	mg/100g	0.49 -46.25	15%
Arginine	ARG	mg/100g	0.58 - 54.44	15%
Glycine	GLY	mg/100g	0.25 - 23.46	15%
Aspartic Acid	ASP	mg/100g	0.44 -41.60	15%
Glutamic Acid	GLU	mg/100g	0.49 - 45.98	15%
Threonine	THR	mg/100g	0.40 -37.23	15%
Alanine	ALA	mg/100g	0.30 - 27.85	15%
G-Aminobutyric acid	GABA	mg/100g	0.35 - 32.50	15%
Theanine	Thea	mg/100g	0.59 -55.00	15%
Proline	PRO	mg/100g	0.38 - 35.98	15%
Ornithine	ORN	mg/100g	0.56 - 52.50	15%
Cystine	CYS	mg/100g	0.40 -37.55	15%
Lysine	LYS	mg/100g	0.49 - 45.69	15%
Tyrosine	TYR	mg/100g	0.60 - 56.63	15%
Methionine	MET	mg/100g	0.50 - 46.63	15%
Valine	VAL	mg/100g	0.39 - 36.61	15%
Isoleucine	ILE	mg/100g	0.44 - 40.99	15%
Leucine	LEU	mg/100g	0.44 - 40.99	15%
Phenylalanine	PHE	mg/100g	0.56 - 52.86	15%

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