NQAC
Nestlé Quality Assurance Center
Dublin

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.

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

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