

EFFECTIVE DATE	N P Analytical Laboratories	Document ID
REVISION: 04/22/26	LABORATORY TEST METHOD SUMMARY	AAHV
REPLACES: 08/05/25	Amino Acid Profile	PAGE 1 OF 2
KEYWORDS: acid stable amino acids, protein amino acids, AAHV, AAHV + TAUR, AAHV TAUR ONLY, AAHV DM, AAHV + TAUR DM, AAHV TAUR ONLY DM, AAHV + CYPA, AAHV + CYPA DM, AAHV CYPA ONLY, AAHV CYPA ONLY DM, AAHV + TAUR + CYPA, AAHV + TAUR + CYPA DM		

1. SCOPE AND PURPOSE:

- 1.1. This method measures acid stable amino acids (aspartic acid, threonine, serine, glutamic acid, proline, glycine, alanine, valine, methionine, isoleucine, leucine, tyrosine, phenylalanine, histidine, lysine, arginine, cystine and taurine) from proteins, peptides, and free amino acids in feeds, foods, food and feed ingredients, and feces.
- 1.2. There is no assurance that matrices other than those listed can be assayed using this method.

2. PRINCIPLE:

- 2.1. After removing oxygen to prevent oxidation, proteins in the sample are hydrolyzed using a 1% dithiodipropionic acid (DDP)/0.1% phenol hydrolysis solution and heating for approximately 24 hours at 110°C. The hydrolysate is partially neutralized, diluted with 0.1 N HCl and filtered. The amino acids are derivatized using Waters AccQ-Tag Ultra Derivatization Kit and separated by reverse-phase chromatography with UV detection. The concentration of each amino acid is quantitated against a series of reference standard solutions of amino acids.
- 2.2. Specific test codes are used to indicate conditions for determining amino acids according to the following table:

Test Code	Used for determining amino acids:
AAHV	Acid stable amino acids
AAHV DM	Acid stable amino acids dry basis
AAHV+TAUR	Acid stable amino acids and taurine
AAHV+TAUR DM	Acid stable amino acids and taurine dry basis
AAHV TAUR ONLY	Taurine
AAHV TAUR ONLY DM	Taurine dry basis
AAHV+CYPA	Acid stable amino acids and cystine
AAHV+CYPA DM	Acid stable amino acids and cystine dry basis
AAHV CYPA ONLY	Cystine
AAHV CYPA ONLY DM	Cystine dry basis
AAHV+TAUR+CYPA	Acid stable amino acids, taurine and cystine
AAHV+TAUR+CYPA DM	Acid stable amino acids, taurine and cystine dry basis

- 2.3. Using a 25 mg sample, the lowest confidence level of this method is 0.05 g of each amino acid per 100 g sample.
- 2.4. There are no known interferences for this method which have not been addressed.

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3. PRECISION:

Records of method precision based on Method Validation and/or known control summaries are located in the QA Master file for this test method. Assay precision may vary with test matrix and analyte level. Terms used to describe method precision are defined in NPSOP3000, *Validation of Quantitative Chemical Tests*.

4. REFERENCES:

- 4.1. Total Amino Acids By AccQ-TAG & UHPLC-UV, Nestlé Method LI-00.594, Modified.
- 4.2. Official Methods of Analysis of the AOAC International, Method 2018.06, Modified.
- 4.3. “UPLC Amino Acid Analysis Solution – System Guide,” Waters Corporation.