

Analysis of Amino Acids and Taurine in Pet Food Using the Hitachi Amino Acid Analyzer

Pet food is formulated to contain amino acids and other nutrients required for a well-balanced diet. In cat food, this formulation includes taurine, a small molecule that is an essential nutrient for cats, and the amino acids found in proteins. Presented here is the analysis of amino acids and taurine in cat food. First, the cat food is ground to a powder form, hydrolyzed with a CEM microwave hydrolysis system, and then analyzed with the Hitachi Amino Acid Analyzer.

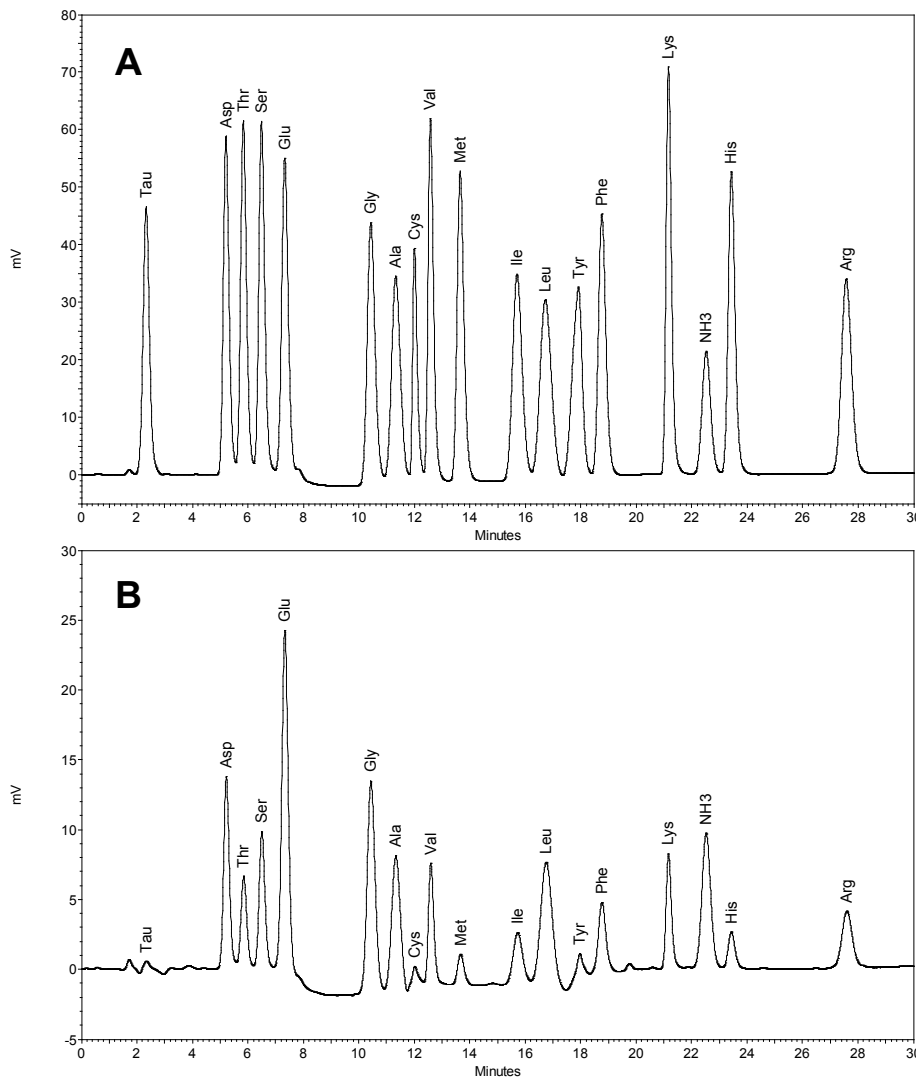
Experimental Conditions—Sample Preparation

1) Grind dry pet food into powder
2) Add sample and 5 mL 6 N HCl to hydrolysis tube
3) Hydrolyze sample in CEM Discover® SP system at 175 °C and 300 W for 15 min.
4) Dilute aliquot of sample 1:100 with distilled water
5) Centrifuge at 10,000 g for 10 min.
6) Filter through 0.2 µm syringe filter
7) Transfer to HPLC vial

Experimental Conditions—Chromatography

Instrument	L-8900 (Amino Acid Analyzer)
Separation Column	#2622PH, 4.6 x 60 mm
Ammonia Trap Column	#2650L, 4.6 x 40 mm
Mobile Phase	L-8500 Buffer Kit
Detector	VIS, 570 nm, 440 nm

Results—Chromatography: A) 100 µM std., B) Cat Food



Results—Linearity (6.25 µM – 100 µM)

Range	$R^2 = 0.9978-0.9999$
Average	$R^2 = 0.9996$

Discussion

Hitachi's Amino Acid Analyzer is extremely effective at analysis of the amino acid and taurine content of pet food in under 30 minutes.

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