

Certificate of Analysis

Citadel Nutrition



Sample Name:	Tier 1 powder (279 grams)	Covance Sample:	1273759
Project ID	CITADEL_NU-20120327-0001	Receipt Date	23-Mar-2012
PO Number	N/A	Receipt Condition	Ambient temperature
Lot Number	1105080	Login Date	27-Mar-2012
Sample Serving Size	9.3 g	Storage Condition	-20 (+/- 10) Degrees Celsius

Analysis	RSD	Percent of Label Claim	Specifications	Result
B Vitamins by HPLC Profile *				
Niacinamide	7.8%	319%	30.0 mg/Serving Size	95.8 mg/Serving Size
Pyridoxine Hydrochloride	1.5%	125%	40.0 mg/Serving Size	50.1 mg/Serving Size
Vitamin B12				
Vitamin B12	NA	95.4%	500 mcg/Serving Size	477 mcg/Serving Size
Free amino acids *				
Tyrosine	2.0%	106%	3.00 g/Serving Size	3.19 g/Serving Size
Beta-alanine	0.0%	118.0%	2.00 g/Serving Size	2.35 g/Serving Size
Creatine *				
Creatine Monohydrate	NA	96.7%	3.00 g/Serving Size	2.90 g/Serving Size
Creatinine	NA			<0.047 g/Serving Size
Caffeine *				
Caffeine	6.0%	95.0%	200 mg/Serving Size	190 mg/Serving Size

Method References	Testing Location
B Vitamins by HPLC Profile (BVIT_S:13)	Covance Laboratories Inc.
Phenomenex HPLC Application #14234: Water-Soluble Vitamins Standard on Synergi Hydro-RP	
Caffeine (CAFR_S:7)	Covance Laboratories Inc.
Journal of Food Science (modified), 48: 745-747, (1983).	
Creatine (CREA_S:4)	Covance Laboratories Inc.
Analytical Biochemistry 214, pp. 278-283 (1993).	
Free amino acids (FAALC_S:6)	Covance Laboratories Inc.
R. Schuster, "Determination of Amino Acids in Biological, Pharmaceutical, Plant and Food Samples by Automated Precolumn Derivatization and HPLC", Jorunal of Chromatography, 1988, 431, 271-284.	
Henderson, J.W., Ricker, R.D. Bidlingmeyer, B.A., Woodward, C., "Rapid, Accurate, Sensitive, and Reproducible HPLC Analysis of Amino Acids, Amino Acid Analysis Using Zorbax Eclipse-AAA columns and the Agilent 1100 HPLC," Agilent Publication, 2000. Barkholt and Jensen, "Amino Acid Analysis: Determination of Cystine plus Half-Cystine in Proteins after Hydrochloric Acid Hydrolysis with a Disulfide Compound as Additive", Analytical Biochemistry, 177, 318-322 (1989).	

Certificate of Analysis

Citadel Nutrition

**Method References****Testing Location****Vitamin B12 (B12F_S:14)****Covance Laboratories Inc.**

Official Methods of Analysis of AOAC INTERNATIONAL, 18th Ed., Methods 952.20 and 960.46, AOAC INTERNATIONAL, Gaithersburg, MD, USA, (2005).

The United States Pharmacopeia, 29th Ed., pp. 603-4, United States Pharmacopeial Convention, Inc.: Rockville, Maryland (2005).

Methods of Analysis for Infant Formulas, Infant Formula Council, Atlanta, Georgia, Section C-2, (1985).

Testing Location(s)**Released on Behalf of Covance by****Covance Laboratories Inc.****Lori Ross - Associate Director**

3301 Kinsman Blvd
Madison WI 53704
608-242-2712 x4170



Testing Cert #2918.01

These results apply only to the items tested. This certificate of analysis shall not be reproduced, except in its entirety, without the written approval of Covance.