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8969 Cleveland Road, Clayton, NC 27520
Phone: 919-989-7793 Fax: 919-989-9226
Email: nclab@advancedlabsinc.com
FDA Registration #2000040668

Test Certificate

Description: Chocolate
Sample ID: PB0091516
Lot No:
Part Code:
Location:
PO No: 08112017-B
Received: 8/15/2017

Client: NuEthicx Formulations

Lab No: 61395-01
Completed: 8/24/2017

Analysis	Result	Per Unit	Method
†Calories	391.9	cal/100g	calculation
†Calories from Fat	39.4	cal/100g	calculation
†Total Fat	4.38	g/100g	GC-MS
†Carbohydrate	8.28	g/100g	AOAC 979.06
†Protein	79.85	g/100g	Kjeldahl
†Dietary Fiber	4.32	g/100g	AOAC 993.21
†Sugar	3.42	g/100g	AOAC 982.14
†Ash	2.16	g/100g	AOAC 923.03
†Moisture	5.33	g/100g	AOAC 945.43

Results Approved By: Monika Howard

Monika Howard-Quality Technician

Dated: 8/24/2017

Tests marked with † were done at Atlas Bioscience Labs, LLC, a joint venture with Advanced Laboratories. - 1775 S. Pantano Rd - Ste #110, Tucson, AZ 85710

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Test Certificate

Description:	Chocolate	Client:	NuEthicx Formulations
Sample ID:	PB0091516		
Lot No:			
Part Code:			
Location:			
PO No:	08112017-B	Lab No:	61395-01
Received:	8/15/2017	Completed:	8/24/2017

Analysis	Result	Per Unit	Method

Fatty acid analysis performed by GC-MS on a BTFSA derivatized sample on a capillary column stationary phase of BPX5, 0.25m film: length: 30m x 0.1 mm ID. Oven Program: Initial Temp:50°C, 1 min. Rate 1: 30°C/min. Final Temp: 320°C, 2 min. Detector Type: MS in positive ion Temperature: 320°C Carrier Gas: He, 23psi. Average Linear Velocity:30 cm/sec at 50°C. Injection Mode: Split. Split Ratio: 100:1. Injection Volume: 1.0 • L Injection Temperature: 250°C Liner Type: 4 mm ID Single Taper. Authentic reference materials obtained from Sigma-Aldrich. Cholesterol analysis performed using HPLC by method adapted from Indyk, H.E., "Simultaneous Liquid-Chromatographic Determination Of Cholesterol, Phytosterols and Tocopherols in Foods," as published in Analyst 115 (12): 1525-1530 Dec 1990; utilizing a facile saponification of fatty acids rapidly within a single reaction tube, followed by analysis by reversed-phase chromatography on a Altima-ODS-HC (150x4.6mm) with a mobile phase of MeOH:EtOAc (75:25) 1ml/min and UV detection at 205nm. Authentic chemical reference material obtained from Sigma-Aldrich. Elemental nitrogen content determined by Kjeldahl digestion analysis performed on two grams sample in a digestion tube with 12-15 ml of concentrated sulfuric acid (H2SO4). Seven grams of potassium sulfate (K2SO4) and a metallic copper catalyst added. The digestion tube placed into a digestion block and heated to boiling for one hour at 370ºF to 400ºF. Ammonia distillation performed and ammonia collected by absorption onto a solution of 4% boric acid; resultant ammonium borate titrated with 0.1N hydrochloric acid in the presence of mixed indicator, (bromocresol green / methyl red). Percent nitrogen: % N = 14.01 x [(ml titrant – ml blank) – (N of titrant) x 100]/Sample Wt. (grams) x 1000. Authentic reference materials obtained from Sigma-Aldrich. Ascorbic acid anion analysis performed using HPLC by method adapted from Castro RN, Azeredo LC, Azeredo MAA, de Sampaio CST, "HPLC Assay for the Determination of Ascorbic Acid in Honey Samples," as published in Journal Of Liquid Chromatography & Related Technologies 24 (7): 1015-1020 2001; utilizing a C-18-ODS column with an isocratic mobile phase consisting of a mixture of 15% methanol and 85% water, adjusted to pH 2.5 with metaphosphoric acid, at a flow

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Analysis	Result	Per Unit	Method

rate of 0.9 mL/min. detection performed by scanning PDA (200-400nm) with signal extraction at 254 nm for quantification. Beta-carotene analysis performed using HPLC by method adapted from Steghens, J.P., vanKappel, A.L., Riboli, E., Collombel, C., "Simultaneous Measurement of Seven Carotenoids, Retinol and Alpha-tocopherol by High-Performance Liquid Chromatography," as published in the Journal of Chromatography, B: Biomedical Applications, 694: 71-81, 1997; utilizing a sample mixed 0.2 ml ethanol then shaken for 5 min. H2O (0.2 ml) and hexane (0.5 ml) were added and shaken for 5 min, and the organic phase separated. After second extraction with 0.3 ml hexane, combined extract was evaporated in vacuo and residue was dissolved in 0.3 ml hexane/ethanol/methanol (1:5:44). This solution was analyzed on two columns of 3 mum Adsorbosphere HS C18 (10 cm * 4.6 mm i.d. and 15 cm * 4.6 mm i.d. in series) at 37°C. The mobile phase (0.9 ml/min) was methanol/acetonitrile (2:3), containing 0.5% acetic acid for 7.1 min, then a step gradient to 24% of CH2Cl2 in the same solvent for 10.3 min, with detection at 292, 325, 450 and 473 nm. Metal analysis performed using Inductively Coupled Plasma Optical Emission Spectrometry (ICP-OES) on a Perkin Elmer Optima 7300DV on a 2% nitric acid digested sample (1mg/ml) introduced at 1.0ml / min with a 15L/min argon plasma temp of 16000°C, in simultaneous wavelength mode with integration time of 5 sec in triplicate for each elemental signature emission line External calibration solution utilized for quantification obtained from Absolute Standards.

Nutrition Panel

Results Approved By: Monika Howard

Monika Howard-Quality Technician

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