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ANALYTICAL REPORT

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P.O.#:
DATE: March 11, 2018

Lab Number: **52790-02A**

Sample: **Droi Kon® Chondroitin Sulfate Porcine**

Lot Number: **undesignated**

Analyte	Result	Unit
total Calories	371.5	cal / 100 g
Calories from Fat	1.6	cal / 100 g
Fat (total by hexane extraction)	0.18	g / 100 g
sat. Fat	1.98	mg / 100 g
trans Fat	< 0.1	mg / 100 g
Protein (kjeldahl nitrogen x 6.25)	3.14	g / 100 g
Carbohydrate	89.33	g / 100 g
Dietary Fiber	0.41	g / 100 g
Insoluble Fiber	0.12	g / 100 g
Soluble Fiber	0.29	g / 100 g
Sugars (non-amine)	0.17	g / 100 g
Cholesterol	< 0.1	mg / 100 g
Calcium	45.52	mg / 100 g
Iron	1.15	mg / 100 g
Potassium	6.8	mg / 100 g
Sodium	505.2	mg / 100 g
Vitamin C (ascorbic acid)	< 0.1	mg / 100 g
Vitamin A (beta-carotene)	< 0.1	IU / 100 g
Moisture	5.73	g / 100 g

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Amended Report - Lab No. 52790-02A replaces 52790-02

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Ash	1.62	g / 100 g

Nutrition Panel

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 rate of 0.9 mL/min. detection performed by scanning PDA (200-400nm) with signal extraction at 254 nm for quantification. Cholecalciferol/Ergocalciferol analysis performed using HPLC by method adapted from Wang, L.H., Huang, S.H., "Determination of vitamins A, D, E, and K in Human and Bovine Serum, and Beta-Carotene and Vitamin A Palmitate in Cosmetic and Pharmaceutical Products, by Isocratic HPLC," as published in Chromatographia, 55(5-6): 289-296, 2002; utilizing a Hypersil C-18 column (25 cm x 4.6 mm), with detection performed by scanning PDA (200-400nm) with signal extraction at 254nm for quantification. Metal analysis performed using Inductively Coupled Plasma Optical Emission Spectrometry (ICP-OES) on a Perkin Elmer Optima 8300DV 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.

Dinesh Patel, Ph.D.
Laboratory Director

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