



*Carla D'Amico, Ph.D.
President & CEO
Summit Nutritionals International, Inc.
Manufactured in Portugal & the United States*

Certificate of Analysis

Chondroitin Sulfate Sodium, Shark
Lot #: SN-SC-091813

Date of Manufacturing: September 18, 2013
Expiration / re-test date: September 18, 2016
Molecular Formula: $C_{14}H_{22}NNaO_{15}S$
Molecular Weight in Daltons: 16,000
Grade: USP Food/Nutraceutical
Lot Size: 3500kg
Country of Origin: United States of America

Description

Appearance: Powder
Particle Size: 100% thru 80 Mesh
Solubility: H_2O

Analytical:

Color:
Odor:
Texture:
Taste:
pH:
Protein: (anhydrous basis)
Fat:
Moisture:
Crude Fat/Oil:
Sodium:
Sulfur:
Sulfate:
Chloride:
Bulk Density - Tapped:
Bulk Density - Un-tapped:

Specification	Results
White	Conforms
Deodorized	Conforms
Powder	Conforms
Characteristic	Conforms
5.5 to 7.5	6.21
<1%	0.7%
<0.2%	0.1%
<7%	6.23%
<2%	1.3%
<4%	2.9%
5.5 - 7.5%	6.2%
<0.24%	Conforms
<0.5%	Conforms
0.65 - 0.70 g/ml	0.70 g/ml
0.55 - 0.60 g/ml	0.60 g/ml

* Chondroitin Sulfate by Advanced Laboratories, NC

Chondroitin Sulfate: (By Carbazole)

Specification	Results
>90%	91.37%

* Chondroitin Sulfate by Atlas Bioscience, AZ

Chondroitin Sulfate: (By CPC Enviro)
Loss on Drying:

Specification	Results
>90%	90.73%
<10%	3.87%

* Chondroitin Sulfate by BioCeuticals, MT

Chondroitin Sulfate: (By HPLC Schuster)
Identification:

Specification	Results
>90%	90.68%
Positive	Positive

* Chondroitin Sulfate by Sani Pure Food Laboratories, NJ

Chondroitin Sulfate: (By CPC Titration)
Loss on Drying:
Specific Rotation:
Species: (Tepnel Species ELISA)

Specification	Results
>90%	92.81%
<10%	2.49%
-12° - 19°	-17.65°
Shark Cartilage	Shark Cartilage

Heavy Metals:

Lead:
Cadmium:
Arsenic
Mercury:

Specification	Results
<0.5 ppm	0.3 ppm
<1 ppm	0.61 ppm
<1 ppm	0.67 ppm
<0.01 ppm	Conforms

Page 1 of 2

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Member of the Somerset County Chamber of Commerce
Member of the American Chamber of Commerce in Portugal

HEADQUARTERS USA: Campus View Plaza Building, 1250 Route 28 - Suites 305B, 306 & 308, Branchburg, New Jersey 08876 - USA - Tel: 1-908-252-0090 - Fax: 1-908-252-0091

INTERNATIONAL BRANCH: Empreendimento Nova Amoreiras - Palácio - 3º Piso / Secção 9 - R. Artilharia Um, 71-77 1250-038 Lisboa - Portugal - Tel: +351 21 482 1965 - Fax: +351 21 482 1966



Certificate of Analysis

Chondroitin Sulfate Sodium, Shark

Lot #: SN-SC-091813

***Microbiological Standards by Sani Pure Food Laboratories, NJ:**

Total Plate Count:

Yeast:

Mold:

E. Coli:

Salmonella:

Specification

1000 cfu/g

100 cfu/g

100 cfu/g

Negative

Negative

Results

80 cfu/g

<10 cfu/g

<10 cfu/g

Negative

Negative

Organic Volatile Impurities:

<10 ppm

Conforms

Chemical Name: Sodium (beta-Glucuronic acid-(1-3)N-acetyl-beta-galactosamine-4-sulfate

This product conforms to California's Proposition 65, which regulates toxic substances

The parameters mentioned on this Certificate of Analysis conform to USP Methodology

* The within results have been obtained through testing conducted by Advanced Laboratories ("Advanced"), Atlas Bioscience Laboratories ("Atlas"), BioCeuticals Research & Development Analytical Laboratory ("BioCeuticals") & Sani Pure Food Laboratories ("Sani-Pure"). The information contained herein is intended for informational purposes only and Summit specifically disclaims any reliance upon same by the customer and/or any end user of the materials referenced herein. Summit Nutritionals International Inc. ("Summit") does not intend, or contemplate that the customer, or any end user, rely upon the accuracy of the information contained herein. The material referenced herein is sold in "as-is" condition, and any purchaser and/or end user foregoes testing upon the within material at its own peril. In turn, no guarantee or warranty, either express or implied, is provided hereunder, or with respect to any of the information, testing methods, or conditions under which said testing was conducted. Rather, for any such guaranty, Summit recommends contacting any of the above mentioned laboratories directly. As a result of the foregoing, please be advised that Summit shall not entertain any claims for any damages resulting from non-conformity of said material in the event same is reported subsequent to the thirty (30) day time period prescribed by Summit within which to do so or in the event that such materials are no longer in their raw material form. Please be guided accordingly.

Keep container tightly closed in a cool well-ventilated place. Protect from light.

Caesar DePaço, Ph.D.
President & CEO
Summit Nutritionals International Inc.
Manufacturer of Nutritional & Nutraceutical
Raw Materials

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FDA Registration #2000040668

8969 Cleveland Road, Clayton, NC 27520

Phone: 919-989-7793 Fax: 919-989-9226

Email: nclab@advancedlabsinc.com

Test Certificate

Sample Description:	Chondroitin Sulfate Sodium, Shark	Client Name	Cesear DePaco
Sample ID:	SN-SC-091813	and Address:	Summit Nutritionals
Sample Lot No:	SN-SC-091813		1250 Route 28
Location:			Suite 305B
Received Date:	9/25/13 11:15		Branchburg, NJ 08876
Completed Date:	10/2/2013	Lab No:	29049-01
PO No:	Lyndsey		


Analysis	Result	Per Unit	Method
†Chondroitin	91.57	% wt	Carbazole

Analysis performed by carbazole determination of uronic acid content (Ref: Bitter, T. and Muir, H. (1962) Anal. Biochem. 4:330-4). Using tetraborate reagent digestion of sample followed by heating and addition of carbazole reagent. Absorbance read at 530nm. Glucuronic acid standard 40 • g/mL freshly prepared in water utilized as reference obtained from Sigma-Aldrich.

THESE RESULTS APPLY ONLY TO THE SAMPLE SUBMITTED AND NOT TO THE PRODUCT FROM WHICH IT WAS TAKEN. THESE RESULTS ARE PROVIDED ONLY FOR THE BENEFIT OF CLIENT, WITHOUT REPRESENTATION OR WARRANTY OF ANY KIND, EXCEPT FOR THE EXPRESS LIMITED WARRANTY PROVIDED SOLELY TO CLIENT IN ADVANCED LABORATORIES' TERMS OF SERVICE.

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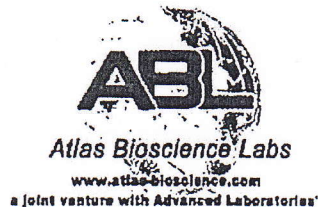
Results Approved By:



Barbara Taylor-Technical Manager

Dated: 10/2/2013

Printed: 10/2/2013 5:17:56 PM



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ANALYTICAL REPORT

TO: Summit Nutritionals Intl. Inc.
1250 Route 28 - Ste 305B
Branchburg, NJ 08876
EMAIL: admin@summitnutritionals.com
DATE: September 30, 2013

Sample:	Lot Number:
Chondroitin Sulfate Sodium, Shark	SN-SC-091813

Analyte	Result*	Unit
Chondroitin (Enviro CPC)	90.73	% wt

* reported on dry basis - loss on drying = 3.87 %

CPC analysis performed in accordance with Enviro-Test monograph "Determination of Chondroitin Sulfate in Supplements by Cetyl-Pyridinium-Chloride Titration"; utilizing spectrophotometric titration against 0.1% cetyl pyridinium chloride observing an endpoint detection at 420nm, using second derivative of titration curve at point of zero axis intersection. Authentic reference materials obtained from Sigma-Aldrich.

Dinesh Patel, Ph.D.
Laboratory Director

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BioCeuticals Research & Development Analytical Laboratory

Division of All American Pharmaceutical & Natural Foods Corporation

2376 Main Street

Area 12

Billings, MT 59105 U.S.A.

(406) 245-5793

PRODUCT ANALYSIS

To: **Lyndsey Rickards**
Company: **Summit Nutritionals**
Date: **10-02-13**

Product Name: Chondroitin Sulfate Sodium Shark	Lot Number: SN-SC-091813	P.O. Number: Lyndsey Rickards
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Analyte	Results	Unit
Chondroitin Sulfate Sodium	90.68	% / wt

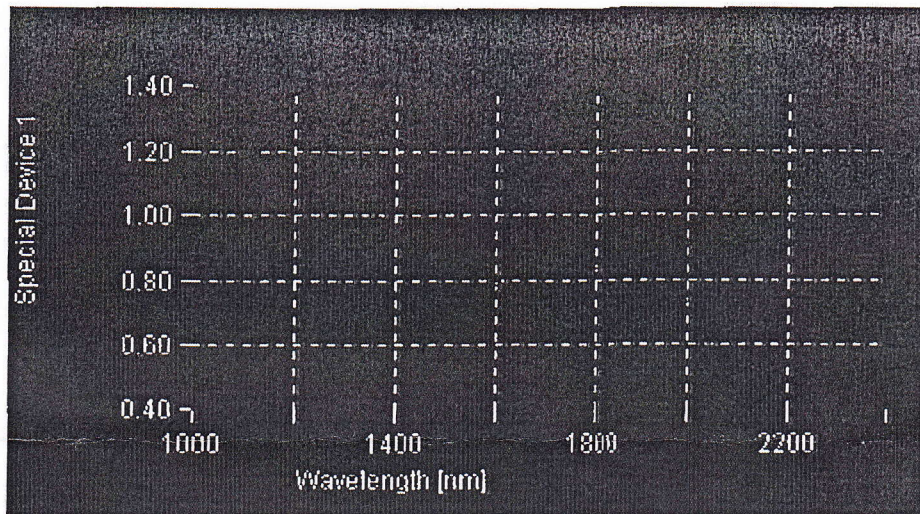
Chondroitin analysis performed by HPLC utilizing Schuster octane sulfonic acid ion-pairing method using a RP-HPLC with a C18 column (250mmx4.6mm). Mobile phases: buffer A; aqueous solution of sodium dihydrogenphosphate and 1-octanesulfonic acid as cation-pairing reagent, pH 2.0. Buffer B; water/acetonitrile 50/50). A gradient was run from 0-40% buffer B in 30 minutes at a flow rate of 1 ml/min and injection volume of 10.00 ul.

External reference material obtained from Sigma-Aldrich.

This Product Analysis is subject to our Standard Terms

Jeff Golini

Jeff Golini
Executive Scientist



Lot#SN-SC-091813 against reference standard

Date: 10-02-13

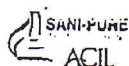
Equipment: Bran & Lubee Infraprover II

Method: FTNIR

Results: Positive I.D.

Jeff Golini

Executive Scientist



IEH-NE Sani-Pure Food Laboratories

CHEMISTS TO THE FOOD INDUSTRIES

176-182 Saddle River Road • Saddle Brook, New Jersey 07663-4619
VOICE (201) 843-2525 • FAX (201) 843-4834 • E-MAIL sanipure.labs@verizon.net

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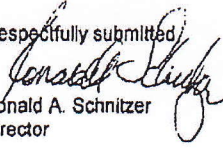
Summit Nutritionals	Date Received:	9/27/2013
1250 Route 28	Date Tested:	9/27/2013
Suite 305 B	Date Reported:	10/2/2013
Branchburg, NJ 08876	Lab Reference No	ISP-09272013-504
	Page Number	1 of 1

Product Identification: CHONDROITIN SULFATE SODIUM, SHARK

Lot Number SN-SC-091813

TEST REQUIRED	RESULT	REQUIREMENT	REFERENCE METHOD
Loss on Drying	2.49%	not more than 10.0%	Oven Drying 4 hrs @ 105° C
Chondroitin Sulfate	92.81%	90.0% to 105.0%, dry basis	USP CPC Titration
Species	SHARK	obtained from Shark cartilage	Tepnel Species ELISA

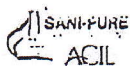
Respectfully submitted,


Ronald A. Schnitzer
Director

Unless otherwise noted, all samples were received in acceptable condition. The result(s) in this report relate only to the portion of the sample(s) tested. This report does not constitute a release of product for consumption.

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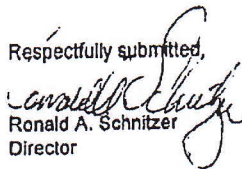
Summit Nutritionals
1250 Route 28
Suite 305 B
Branchburg, NJ 08876

Date Received: 9/27/2013
Date Tested: 9/27/2013
Date Reported: 10/2/2013
Lab Reference No: ISP-09272013-605
Page Number: 1 of 1

Product Identification: CHONDROITIN SULFATE SODIUM, SHARK
Lot Number: SN-SC-091813

TEST REQUIRED	RESULT	REQUIREMENT	REFERENCE METHOD
Specific Rotation	-17.65 °	between -12° and -19°	USP <781 S>

Respectfully submitted,


Ronald A. Schnitzer
Director

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