



# Certificate of Analysis

## UC-II Powder

Lot No: 1708010

UC-II® is a standardized cartilage with undenatured (native) Type II collagen in powder form for use as a dietary supplement (U.S. Patents 7,083,820, 7,846,487, EPO Patent EP1435906B1, U.S. and worldwide patents pending).

Lot No:	1708010	Country of Origin:	USA
Date of Report:	9/27/2017	Date of Manufacture:	August 2017
Product ID:	UC-II	Product Code:	FG21020

Excipients: Potassium Chloride

Shelf Life : 3 years when stored in tightly closed containers free of excessive heat, moisture, light and air.

### TEST RESULTS

No.	Tests	Specification	Results	Methodoloav
<b>PHYSICAL</b>				
1.	Color	White / Cream	Complies	Visual
2.	Density, Bulk (g/cc)	0.45 - 0.75	0.60	USP <616>
3.	Density, Tap (g/cc)	0.75 - 1.05	0.87	USP <616>
4.	Identification	Matches Standard	Complies	USP <197>
5.	Loss on Drying (%)	≤ 10	6.8	USP <731>
<i>Particle Size</i>				
6.	Weight % thru 100 Mesh	≥ 60	64	USP <786>
<b>CHEMICAL</b>				
7.	Potassium (%)	14.2 - 19.4	14.9	USP <730>
<i>Active Ingredients</i>				
8.	Total Collagen (%)	≥ 25	31	HPLC
9.	Undenatured Type II Collagen (%)	≥ 3	9.3	ELISA
<i>Heavy Metals</i>				
10.	Arsenic (ppm)	≤ 1.5	< 0.5	USP <730>
11.	Cadmium (ppm)	≤ 0.5	< 0.25	USP <730>
12.	Lead (ppm)	≤ 1.0	< 0.05	USP <730>
13.	Mercury (ppm)	≤ 0.5	< 0.1	USP <730>
<b>MICROBIOLOGICAL</b>				
14.	Bacillus Cereus, cfu/g	< 1000	< 100	FDA-BAM, 8th Ed, Ch. 14
15.	Enterobacterial Count, MPN/g	< 10	< 10	USP <2021>
16.	Escherichia coli	Absent	Absent	USP <2022>
17.	Salmonella	Absent	Absent	USP <2022>
18.	Staphylococcus Aureus	Absent	Absent	USP <2022>
19.	Total Aerobic Microbial Count (cfu/g)	≤ 3000	< 100	USP <2021>
20.	Total Molds & Yeast Count (cfu/g)	≤ 100	< 100	USP <2021>

Confirmation that specification data from independent laboratory is accurately disclosed on this Certification of Analysis.

By: Tyran Richards Head of Quality/Designee Approval Date: 9/27/17



# Color Verification Form

Page:

1 of 1

Issued By:

Operations

Product Name:	<input type="checkbox"/> 7-Keto Powder	<input type="checkbox"/> Meratrim - M
	<input type="checkbox"/> 7-Keto Beadlet	<input type="checkbox"/> Nexrutine
	<input type="checkbox"/> Aller-7	<input type="checkbox"/> Relora
	<input type="checkbox"/> Boswellia Extract	<input type="checkbox"/> Relora WS
	<input type="checkbox"/> BX-600	<input type="checkbox"/> RSV-5000
	<input type="checkbox"/> CardiaSlim	<input type="checkbox"/> Seditol
	<input type="checkbox"/> CM-100M	<input type="checkbox"/> Sytrinol
	<input type="checkbox"/> CM-2000	<input checked="" type="checkbox"/> UC-II
	<input type="checkbox"/> CM-4000-L	<input type="checkbox"/> ZM-200
	<input type="checkbox"/> Grape Seed Extract	<input type="checkbox"/> ZMA-2000
	<input type="checkbox"/> HCA-500	<input type="checkbox"/> ZMA-2000-E
	<input type="checkbox"/> HCA-600-SXS	<input type="checkbox"/> ZMA-3000
	<input type="checkbox"/> HCA-600-SXM	<input type="checkbox"/> ZML-200
	<input type="checkbox"/> Lowat	<input type="checkbox"/> Zychrome
	<input type="checkbox"/> Meratrim	<input type="checkbox"/> Other _____

Lot Number:	1708010			
Parameter	Specification	Result	Initial	Date
Color	White Cream	Cream	EK	8-30-17

Comments:

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Include this form with the batch record.

**BARROW-AGEE  
LABORATORIES, LLC**



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www.balabs.com

InterHealth Nutraceuticals, Inc  
Attn: Esperanza Ramirez  
5451 Industrial Way  
Benicia, CA 94510 USA

Reporting Date: 09/06/2017

Sample Received: 08/31/2017

Sample Analyzed: 09/05/2017

**CERTIFICATE OF ANALYSIS**

Laboratory Number: 154697

P.O. #UC-II 1708010

Sample Of: UC-II

Sample Identification: LOT# 1708010 8/29/17

Test	Result
Total Aerobic Microbial Count (USP 2021, Modified)	<100 cfu/g
Total Combined Molds and Yeasts Count (USP 2021, Modified)	<100 cfu/g
Enterobacterial Count (USP 2021, Modified)	<10 mpn/g
Staphylococcus Aureus (USP 2022, Modified)	NEGATIVE
Salmonella Species (USP 2022, Modified)	NEGATIVE
Escherichia Coli (USP 2022, Modified)	NEGATIVE
Coliforms	ABSENT (Detection Limit=<3.0) mpn/g
Pseudomonas Aeruginosa (USP 62)	NEGATIVE /g
Listeria (AOAC 997.03)	NEGATIVE /25g
C. Perfringens (AOAC 976.30)	<10 cfu/g

\*\*\* CONTINUED \*\*\*

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Referee Chemists for the American Oil Chemists' Society\*Official Samplers and Chemist for the Chicago Board of Trade  
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5451 Industrial Way  
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**CERTIFICATE OF ANALYSIS**

Laboratory Number: 154697

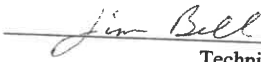
Sample Of: UC-II

P.O. #UC-II 1708010

Sample Identification: LOT# 1708010 8/29/17

Test	Result
Loss On Drying (USP)	6.84 %
Water Activity	0.255
Sieve (US #20)	100.0 % Passing
Sieve (US #40)	99.7 % Passing
Sieve (US #60)	88.1 % Passing
Sieve (US #80)	73.6 % Passing
Sieve (US #100)	64.4 % Passing
Bulk Density	0.60 g/ml
Tap Density	0.87 g/ml
Potassium as Potassium Chloride (AOAC 2011.14)	33.02 %

Approved,

  
Technical Director



Biological Certificate # 3250.01  
Scope of Accreditation to  
ISO/IEC 17025:2005

Questions about this analysis? Please contact [customerservice@balabs.com](mailto:customerservice@balabs.com).

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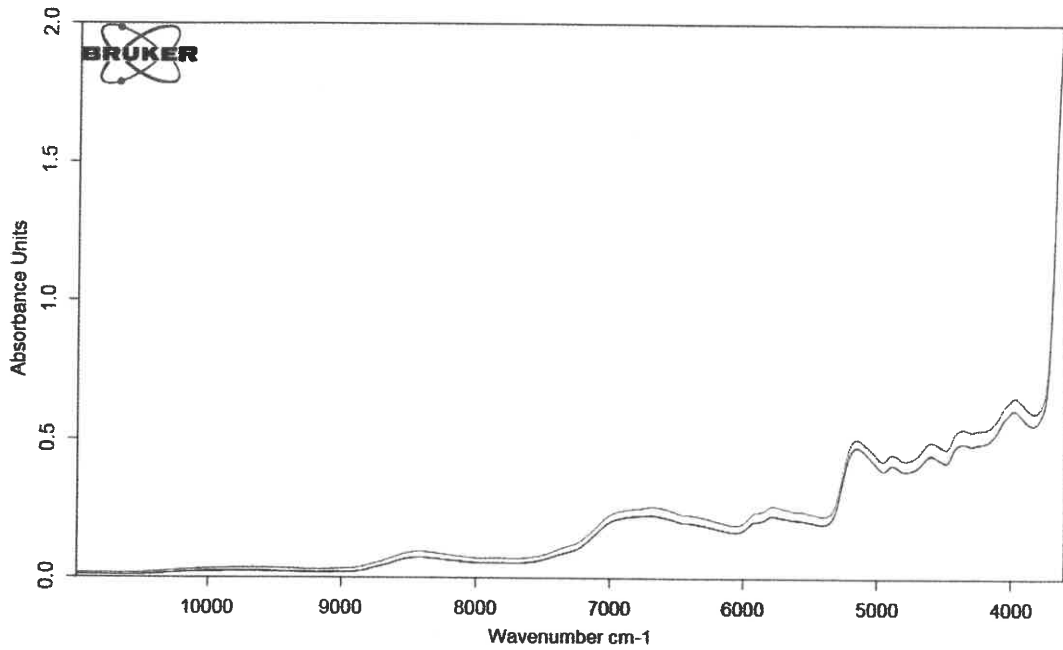
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Unless noted otherwise, all samples received in satisfactory condition.

**BIOCEUTICAL'S RESEARCH & DEVELOPMENT ANALYTICAL LABORATORY**

2376 Main Street, Billings, MT 59105 USA 406-245-5793



C:\OPUS_7.0.129\OpusLab\Spec\R&D\UC-II\UC-II_1708010.0	1708010;UC-II;R&D	9/1/2017
C:\OPUS_7.0.129\OpusLab\Spec\R&D\UC-II\UC-II_30113 Reference Standard.0	30113 Reference Standard;UC-II;R&D	7/1/2014

9:59:31 AM 9/1/2017

**NIR Analysis**

Product Name: UC-II

FTNIR Analysis of Lot#: 1708010 against external reference standards <Conforms to USP 197>

Equipment: Bruker Matrix-I

Transformation: Absorbance/ Normalization

Date: 09/01/17

Operator: Alisha Manning

Identity Positive for: UC-II

**Certificate of Analysis**

**InterHealth Nutraceuticals, Incorporated**

5451 Industrial Way  
Benicia California 94510 United States

<b>Sample Name:</b>	<b>UC-II 1708010</b>	<b>Covance Sample:</b>	<b>6489187</b>
<b>Project ID</b>	INTERHLTH-20170831-0114	<b>Receipt Date</b>	31-Aug-2017
<b>PO Number</b>	UC-II	<b>Receipt Condition</b>	Ambient temperature
<b>Lot Number</b>	1708010	<b>Login Date</b>	31-Aug-2017
<b>Sample Serving Size</b>		<b>Online Order</b>	30

<b>Analysis</b>	<b>Result</b>
<b>Protein (N x 5.55) Dumas Method</b>	
Protein	42.3 g/100g
<b>Chloride</b>	
Chloride	14200 mg/100g
<b>Amino Acids</b>	
Collagen	31000 mg/100g
<b>Chondroitin Sulfate *</b>	
Chondroitin Sulfate	6360 mg/100g
<b>Salmonella ELFA method</b>	
Salmonella	Negative /375 g
<b>Staphylococcus enterotoxin ELFA method *</b>	
Staphylococcus enterotoxin	Negative /25 g
<b>Bacillus cereus Plate Count on MYP agar</b>	
Presumptive Bacillus cereus group	<100 CFU/g
Atypical Growth Present	<100 CFU/g
<b>Undenatured Type-II collagen-ELISA method *</b>	
Undenatured Collagen Type II	9.29 %

<b>Method References</b>	<b>Testing Location</b>
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**Amino Acids (TAALC\_S)**

**Covance Laboratories - Madison**

R. Schuster, "Determination of Amino Acids in Biological, Pharmaceutical, Plant and Food Samples by Automated Precolumn Derivatization and HPLC", Journal 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 Cysteine plus Half-Cystine in Proteins after Hydrochloric Acid Hydrolysis with a Disulfide Compound as Additive", Analytical Biochemistry, 177, 318-322 (1989).

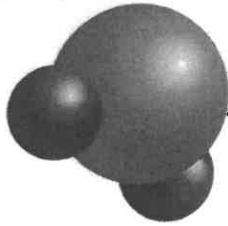
Henderson, J.W., Brooks, A., "Improved Amino Acid Methods using Agilent Zorbax Eclipse Plus C18 Columns for a Variety of Agilent LC Instrumentation and Separation Goals," Agilent Application Note 5990-4547 (2010).

**Bacillus cereus Plate Count on MYP agar (BCERPC\_MYP)**

**Covance Laboratories - Madison NE**

Tallent, S. M., Rhodehamel, E. J., Harmon, S. M., and Bennett, R. W., "Chapter 14 - Bacillus cereus," Bacteriological Analytical Manual, Eighth Ed., Revision A, U. S. Food and Drug Administration: Silver Spring, MD (1998), Revised Feb 2012.

\* This analysis is not ISO accredited.



## Supplemental Analytical Report

September 08, 2017

Esperanza Ramirez  
Interhealth Nutraceuticals, Inc.  
1302 Jackson Street  
Fort Smith, AR 72901

Page 1 of 2  
WO Number: W17H1146

Client: Interhealth Nutraceuticals, Inc.-AR  
Client #: I6837AR  
Sample Type: Powder  
Collector: Client

Customer PO:  
Date Received: 8/31/2017  
Date Completed: 09/07/2017  
Discard Date: 09/22/2017

CSL#: 17H2815 UC-II - Lot#: 1708010

Parameter	Result	PQL	Method	Date	Analyst
Arsenic	<0.5 ug/g	0.5	ICP MS	09/01/17	AW
Cadmium	<0.25 ug/g	0.25	ICP MS	09/01/17	AW
Chromium	1.0 ug/g	0.5	ICP MS/KED	09/01/17	AW
Copper	1.4 ug/g	0.5	ICP MS	09/01/17	AW
Lead	<0.05 ug/g	0.05	ICP MS	09/01/17	AW
Mercury	<0.1 ug/g	0.1	ICP MS	09/01/17	AW
Potassium	141,000 ug/g	50	ICP MS/KED	08/31/17	AW
Potassium*	144,000 ug/g	20	ICP MS/KED	09/07/17	AW
Potassium Duplicate*	143,000 ug/g	20	ICP MS/KED	09/07/17	AW
Zinc	6.4 ug/g	0.5	ICP MS	09/01/17	AW

CSL#: 17H2815

Parameter	Result	Serving Size	Unit Weight	Specification
Arsenic	<0.5 ppm	NA	NA	<1.5 ppm
Cadmium	<0.25 ppm	NA	NA	<0.5 ppm
Chromium	1.0 ppm	NA	NA	NA
Copper	1.4 ppm	NA	NA	NA
Lead	<0.05 ppm	NA	NA	<1.0 ppm
Mercury	<0.1 ppm	NA	NA	<0.5 ppm
Potassium	14.1 %	NA	NA	14.2 - 19.4%
Potassium*	14.4 %	NA	NA	14.2 - 19.4%
Potassium Duplicate*	14.3 %	NA	NA	14.2 - 19.4%
Zinc	6.4 ppm	NA	NA	NA



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trace elemental analysis

## Analytical Report

September 27, 2017

Esperanza Ramirez  
Interhealth Nutraceuticals, Inc.  
1302 Jackson Street  
Fort Smith, AR 72901

Page 1 of 1  
WO Number: W17I0551

Client: Interhealth Nutraceuticals, Inc.-AR  
Client #: I6837AR  
Sample Type: Powder  
Collector: Client

Customer PO:  
Date Received: 9/20/2017  
Date Completed: 09/27/2017  
Discard Date: 10/11/2017

CSL#: 17I1481 UC-II - Lot#: 1708010-A

Parameter	Result	PQL	Method	Date	Analyst
Potassium	149,000 ug/g	70	ICP MS	09/26/17	HG

CSL#: 17I1481

Parameter	Result	Serving Size	Unit Weight	Specification
Potassium	14.9 %	NA	NA	14.2 - 19.4 %

Respectfully Submitted,  
Chemical Solutions, Ltd.

Mercedes Naugle  
Reviewed and Approved  
Sep 27 2017 03:54 PM

QA Representative

cosign

Notes:

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trace elemental analysis

## Analytical Report

September 27, 2017

Esperanza Ramirez  
Interhealth Nutraceuticals, Inc.  
1302 Jackson Street  
Fort Smith, AR 72901

Page 1 of 1  
WO Number: W17I0551

Client: Interhealth Nutraceuticals, Inc.-AR  
Client #: I6837AR  
Sample Type: Powder  
Collector: Client

Customer PO:  
Date Received: 9/20/2017  
Date Completed: 09/27/2017  
Discard Date: 10/11/2017

CSL#: 17I1482 UC-II - Lot#: 1708010-B

Parameter	Result	PQL	Method	Date	Analyst
Potassium	148,000 ug/g	70	ICP MS	09/26/17	HG

CSL#: 17I1482

Parameter	Result	Serving Size	Unit Weight	Specification
Potassium	14.8 %	NA	NA	14.2 - 19.4 %

Respectfully Submitted,  
Chemical Solutions, Ltd.

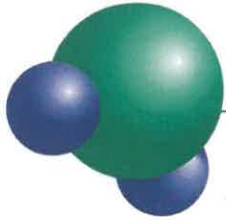
QA Representative

Mercedes Naugle  
Reviewed and Approved  
Sep 27 2017 03:54 PM

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## Analytical Report

September 27, 2017

Esperanza Ramirez  
Interhealth Nutraceuticals, Inc.  
1302 Jackson Street  
Fort Smith, AR 72901

Page 1 of 1  
WO Number: W17I0551

Client: Interhealth Nutraceuticals, Inc.-AR  
Client #: I6837AR  
Sample Type: Powder  
Collector: Client

Customer PO:  
Date Received: 9/20/2017  
Date Completed: 09/27/2017  
Discard Date: 10/11/2017

CSL#: 17I1483 UC-II - Lot#: 1708010-C  
Parameter Result  
Potassium 150,000 ug/g

PQL  
70

Method  
ICP MS

Date  
09/26/17

Analyst  
HG

CSL#: 17I1483  
Parameter  
Potassium

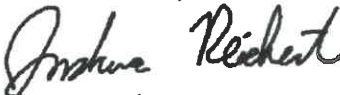
Result  
15.0 %

Serving Size  
NA

Unit Weight  
NA

Specification  
14.2 - 19.4 %

Respectfully Submitted,  
Chemical Solutions, Ltd.



QA Representative

Joshua Reichert  
Reviewed and Approved  
Sep 27 2017 4:54 PM

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