



Certificate of Analysis

BiovaFlex® RC

Biova LLC · 2325 N. Loop Dr. · Suite 6400 · Ames, Iowa 50010 · Ph:1-877-OVACORE · Fax:515-296-3992

Product Name:	BiovaFlex® RC	SKU:	326
Source:	Chicken Eggshell Membrane	Lot #:	T9074-1
Physical Description:	Water soluble, off white powder		
Date of Manufacture:	March 13, 2019	Expiration Date:	March 13, 2023

TEST	SPECIFICATION	RESULT	METHOD
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Identity:

Protein (N = 6.41) ^A	≥ 88%	97.99	Combustion- AOAC 990.03; 992.15
Moisture	≤ 9%	4.1	AOAC 925.09
Ash	≤ 8%	5.22	AOAC 942.05

Impurities:

Heavy Metals (Lead)	≤ 1.0 ppm	pass	AOAC 2013.03 (ICP – MS)
Calcium	≤ 1%	0.231	AOAC 2013.03 (ICP – MS)

Microbiology:*

Aerobic Plate Count	≤ 2500 cfu/g	pass	CMMEF, 4 th Ed., 2001 Method 7.6
Escherichia Coli	≤ 3 MPN/g	pass	FDA BAM Chapter 4
Salmonella	Negative / 25g	pass	AOAC 2003.09
Coliforms	≤ 10 MPN/g	pass	FDA BAM Chapter 4
Staphylococcus Aureus	≤ 10 cfu/g	pass	FDA BAM Chapter 12
Yeast	≤ 10 cfu/g	pass	AACC 42-50
Mold	≤ 200 cfu/g	pass	AACC 42-50

Specific Tests:

Collagen ^A	≥ 15%	28	Sircol™ Soluble Collagen Assay
Elastin ^A	≥ 20%	36	Elastin Assay by ELISA
Total Glycosaminoglycans ^A	≥ 5%	24.9	USP, CPC Titration
pH	6.5 -7.6	6.93	AOAC 981.12
Solubility	Soluble in Water	pass	USP 10% sol @ 25°C
Bulk Density	≥ 0.6 g/mL	0.678	USP 616

Verified by: John H. Beckwith

Date: May 20, 2019

****FOR RESEARCH OR MANUFACTURING USE ONLY****

*To provide the best and most consistent quality information, Biova utilizes a three tier sampling plan for microbiological testing. These specifications represent the established limits for result criteria. Results are also a summary of 5 replicates analyzed at Eurofins Microbiology Laboratory.

**Biova reserves the right to change specification in the interest of continued quality improvement.

^A Analyses are reported on a dry basis.

QA030-F

Revised: May 17, 2019

Supersedes: January 7, 2019

Eurofins Sample Code: 473-2019-04300405
Sample Description: Whirl-Pak bag 1 (Eggshell Membrane Powder)
Client Sample Code: T9074-1 WP1
PO Number: 190430-10-5050-JHB-02
Client Code: JD0000028

Entry Date: 04/30/2019
Reporting Date: 05/05/2019

Biova LLC
 Attn: Tai Misra
 2325 North Loop Dr.
 Suite 6400
 Ames, IA 50010

CERTIFICATE OF ANALYSIS

AR-19-JD-023253-01

Test	Result	Theoretical Level
UMAEK - Salmonella - AOAC 2003.09 Completed: 05/02/2019		
AOAC 2003.09 Salmonella spp.	Not Detected per 25 g	Negative /25 g
UMHBM - Staphylococcus aureus - BAM Chapter 12 Completed: 05/02/2019		
BAM Chapter 12 Staphylococcus aureus	< 10 cfu/g	≤ 10 cfu/g
UMJP9 - Aerobic Plate Count - CMMEF Chapter 8.72 Completed: 05/02/2019		
CMMEF Chapter 8.72 Aerobic Plate Count	< 10 cfu/g	≤ 2,500 cfu/g
UMKP7 - Coliforms - BAM Chapter 4 Completed: 05/02/2019		
FDA BAM Chapter 4 Total Coliforms	< 3 MPN/g	≤ 10 mpn/g
UMVUE - Escherichia coli - BAM Chapter 4 Completed: 05/02/2019		
FDA BAM Chapter 4 E. coli	< 3 MPN/g	≤ 5 mpn/g
UMW78 - Moulds - AACC 42-50 Completed: 05/05/2019		
AACC Method 42-50 Mold	< 10 cfu/g	≤ 200 cfu/g
Yeast	< 10 cfu/g	≤ 10 cfu/g

Eurofins Sample Code: 473-2019-04300405**Client Sample Code:** T9074-1 WP1Respectfully Submitted,
Eurofins Scientific Inc.

Christopher Ekuban

Lab Supervisor

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All results are reported on an "As Received" basis unless otherwise stated.
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Eurofins Scientific, Inc. Measurement of Uncertainty can be obtained upon request.

Biological Testing
Cert:3329:01

Eurofins Sample Code: 473-2019-04300406
Sample Description: Whirl-Pak bag 2 (Eggshell Membrane Powder)
Client Sample Code: T9074-1 WP2
PO Number: 190430-10-5050-JHB-02
Client Code: JD0000028

Entry Date: 04/30/2019
Reporting Date: 05/05/2019

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CERTIFICATE OF ANALYSIS

AR-19-JD-023254-01

Test	Result	Theoretical Level
UMA EK - Salmonella - AOAC 2003.09 Completed: 05/02/2019		
AOAC 2003.09 Salmonella spp.	Not Detected per 25 g	Negative /25 g
UMHBM - Staphylococcus aureus - BAM Chapter 12 Completed: 05/02/2019		
BAM Chapter 12 Staphylococcus aureus	< 10 cfu/g	≤ 10 cfu/g
UMJP9 - Aerobic Plate Count - CMMEF Chapter 8.72 Completed: 05/02/2019		
CMMEF Chapter 8.72 Aerobic Plate Count	< 10 cfu/g	≤ 2,500 cfu/g
UMKP7 - Coliforms - BAM Chapter 4 Completed: 05/02/2019		
FDA BAM Chapter 4 Total Coliforms	< 3 MPN/g	≤ 10 mpn/g
UMVUE - Escherichia coli - BAM Chapter 4 Completed: 05/02/2019		
FDA BAM Chapter 4 E. coli	< 3 MPN/g	≤ 5 mpn/g
UMW78 - Moulds - AACC 42-50 Completed: 05/05/2019		
AACC Method 42-50 Mold	< 10 cfu/g	≤ 200 cfu/g
Yeast	< 10 cfu/g	≤ 10 cfu/g

Eurofins Sample Code: 473-2019-04300406**Client Sample Code:** T9074-1 WP2Respectfully Submitted,
Eurofins Scientific Inc.

Christopher Ekuban

Lab Supervisor

Biological Testing
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Eurofins Sample Code: 473-2019-04300407
Sample Description: Whirl-Pak bag 3 (Eggshell Membrane Powder)
Client Sample Code: T9074-1 WP3
PO Number: 190430-10-5050-JHB-02
Client Code: JD0000028

Entry Date: 04/30/2019
Reporting Date: 05/05/2019

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CERTIFICATE OF ANALYSIS

AR-19-JD-023255-01

Test	Result	Theoretical Level
UMAEK - Salmonella - AOAC 2003.09 Completed: 05/02/2019		
AOAC 2003.09 Salmonella spp.	Not Detected per 25 g	Negative /25 g
UMHBM - Staphylococcus aureus - BAM Chapter 12 Completed: 05/02/2019		
BAM Chapter 12 Staphylococcus aureus	< 10 cfu/g	≤ 10 cfu/g
UMJP9 - Aerobic Plate Count - CMMEF Chapter 8.72 Completed: 05/02/2019		
CMMEF Chapter 8.72 Aerobic Plate Count	30 (est) cfu/g	≤ 2,500 cfu/g
UMKP7 - Coliforms - BAM Chapter 4 Completed: 05/02/2019		
FDA BAM Chapter 4 Total Coliforms	< 3 MPN/g	≤ 10 mpn/g
UMVUE - Escherichia coli - BAM Chapter 4 Completed: 05/02/2019		
FDA BAM Chapter 4 E. coli	< 3 MPN/g	≤ 5 mpn/g
UMW78 - Moulds - AACC 42-50 Completed: 05/05/2019		
AACC Method 42-50 Mold	< 10 cfu/g	≤ 200 cfu/g
Yeast	< 10 cfu/g	≤ 10 cfu/g

Eurofins Sample Code: 473-2019-04300407**Client Sample Code:** T9074-1 WP3Respectfully Submitted,
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Biological Testing
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Eurofins Sample Code: 473-2019-04300408
Sample Description: Whirl-Pak bag 4 (Eggshell Membrane Powder)
Client Sample Code: T9074-1 WP4
PO Number: 190430-10-5050-JHB-02
Client Code: JD0000028

Entry Date: 04/30/2019
Reporting Date: 05/05/2019

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CERTIFICATE OF ANALYSIS

AR-19-JD-023256-01

Test	Result	Theoretical Level
UMA EK - Salmonella - AOAC 2003.09 Completed: 05/02/2019		
AOAC 2003.09 Salmonella spp.	Not Detected per 25 g	Negative /25 g
UMHBM - Staphylococcus aureus - BAM Chapter 12 Completed: 05/02/2019		
BAM Chapter 12 Staphylococcus aureus	< 10 cfu/g	≤ 10 cfu/g
UMJP9 - Aerobic Plate Count - CMMEF Chapter 8.72 Completed: 05/02/2019		
CMMEF Chapter 8.72 Aerobic Plate Count	< 10 cfu/g	≤ 2,500 cfu/g
UMKP7 - Coliforms - BAM Chapter 4 Completed: 05/02/2019		
FDA BAM Chapter 4 Total Coliforms	< 3 MPN/g	≤ 10 mpn/g
UMVUE - Escherichia coli - BAM Chapter 4 Completed: 05/02/2019		
FDA BAM Chapter 4 E. coli	< 3 MPN/g	≤ 5 mpn/g
UMW78 - Moulds - AACC 42-50 Completed: 05/05/2019		
AACC Method 42-50 Mold	< 10 cfu/g	≤ 200 cfu/g
Yeast	< 10 cfu/g	≤ 10 cfu/g

Eurofins Sample Code: 473-2019-04300408
Client Sample Code: T9074-1 WP4

Respectfully Submitted,
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Biological Testing
Cert:3329:01

Eurofins Sample Code: 473-2019-04300409
Sample Description: Whirl-Pak bag 5 (Eggshell Membrane Powder)
Client Sample Code: T9074-1 WP5
PO Number: 190430-10-5050-JHB-02
Client Code: JD0000028

Entry Date: 04/30/2019
Reporting Date: 05/05/2019

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 Ames, IA 50010

CERTIFICATE OF ANALYSIS

AR-19-JD-023257-01

Test	Result	Theoretical Level
UMA EK - Salmonella - AOAC 2003.09 Completed: 05/02/2019		
AOAC 2003.09 Salmonella spp.	Not Detected per 25 g	Negative /25 g
UMHBM - Staphylococcus aureus - BAM Chapter 12 Completed: 05/02/2019		
BAM Chapter 12 Staphylococcus aureus	< 10 cfu/g	≤ 10 cfu/g
UMJP9 - Aerobic Plate Count - CMMEF Chapter 8.72 Completed: 05/02/2019		
CMMEF Chapter 8.72 Aerobic Plate Count	< 10 cfu/g	≤ 2,500 cfu/g
UMKP7 - Coliforms - BAM Chapter 4 Completed: 05/02/2019		
FDA BAM Chapter 4 Total Coliforms	< 3 MPN/g	≤ 10 mpn/g
UMVUE - Escherichia coli - BAM Chapter 4 Completed: 05/02/2019		
FDA BAM Chapter 4 E. coli	< 3 MPN/g	≤ 5 mpn/g
UMW78 - Moulds - AACC 42-50 Completed: 05/05/2019		
AACC Method 42-50 Mold	< 10 cfu/g	≤ 200 cfu/g
Yeast	< 10 cfu/g	≤ 10 cfu/g

Eurofins Sample Code: 473-2019-04300409**Client Sample Code:** T9074-1 WP5Respectfully Submitted,
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Biological Testing
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