



SURFACE SHIELD LABORATORY FINDINGS

Summary Prepared by: Mark Byron Lane, Ph.D. CE Nuturell Corporation / CEO September 21, 2020



Nuturell submitted its formulation for our all-natural, organic, "Green" Non-Toxic Surface Shield to Sanders Laboratories.

Sanders Laboratories received twenty-four (24) samples of the Nuturell Surface Shield, and these samples were treated with both gram-positive and gram-negative pathogens.¹ The **Treated Washed Panels** were panels where Nuturell was applied and then washed using dish soap. The **Treated Panels** were panels where Nuturell was applied and not washed.

Below is a summary of Sanders Laboratories' findings fourteen (14) days after Nuturell was applied to the surface to show the long-term efficacy of the product:

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Gram Negative	cfu/cm	Percent Kill After 14 Days
Treated Washed Panels Inside	250,000	99.952%
Treated Panels Inside	250,000	99.992%
Treated Washed Panels Outside	250,000	90.4%
Treated Panels Outside	250,000	99.16%

¹ Gram-positive and gram-negative and gram stain pathogens, include, but are not limited to, Staphylococcus, Streptococcus, Bacillus, and Listeria.

14 Day Laboratory Results

Gram Positive	cfu/cm	Percent Kill After 14 Days
Treated Washed Panels Inside	250,000	98.84%
Treated Panels Inside	250,000	99.972%
Treated Washed Panels Outside	250,000	94%
Treated Panels Outside	250,000	99.936%

Below is a summary of Sanders Laboratories' findings ninety (90) days after Nuturell was applied to the surface to show the long-term efficacy of the product:

90 Day Laboratory Results

Gram Negative	cfu/cm	Percent Kill After 90 Days
Treated Washed Panels Inside	250,000	97%
Treated Panels Inside	250,000	99.64%
Treated Washed Panels Outside	250,000	94.8%
Treated Panels Outside	250,000	96%

1. Gram-positive and gram-negative and gram stain pathogens, include, but are not limited to, Staphylococcus, Streptococcus, Bacillus, and Listeria.

90 Day Laboratory Results

Gram Positive	cfu/cm	Percent Kill After 90 Days
Treated Washed Panels Inside	250,000	97.6%
Treated Panels Inside	250,000	99.96%
Treated Washed Panels Outside	250,000	99.2%
Treated Panels Outside	250,000	99.36%

14 Day Conclusion ~ The findings of Sanders Laboratories shows that Nuturell Surface Shield keeps actively killing pathogens at an average rate of 99.9% inside and 99.5% outside for up to fourteen (14) days after Nuturell Surface Shield has been applied to a surface.

Further, the study shows even after Nuturell Surface Shield was applied to the surface, and then the surface was washed, Nuturell Surface Shield keeps actively killing pathogens at an average rate of 99.3% inside and 92.2% outside for up to fourteen (14) days.

90 Day Conclusion ~ The findings of Sanders Laboratories shows that Nuturell Surface Shield keeps actively killing pathogens at an average rate of 99.8% inside and 97.7% outside for up to ninety (90) days after Nuturell Surface Shield has been applied to a surface.

^{1.} Gram-positive and gram-negative and gram stain pathogens, include, but are not limited to, Staphylococcus, Streptococcus, Bacillus, and Listeria.

Continued ~ 90 Day Conclusion

Further, the study shows even after Nuturell Surface Shield was applied to the surface, and then the surface was washed, Nuturell Surface Shield keeps actively killing pathogens at an average rate of 97.3% inside and 97.1% outside for up to ninety (90) days.

The full report from Sanders Laboratories is enclosed herewith.

1. Gram-positive and gram-negative and gram stain pathogens, include, but are not limited to, Staphylococcus, Streptococcus, Bacillus, and Listeria.

TECHNICAL REPORT

For

Nuturell Corporation 8823 Napa Landing Boerne, Texas 78015

Mark Byron Lane, PhD.

ISO 22196 Measurement of Antibacterial Activity on Solid Surfaces

Treated Sheet Metal resistance to Escherichia coli and Staphylococcus aureus

Report for Day 1 and Day 7

Analysis performed by

John Limbach Microbiology Technical Director

Initiation Date: June 19, 2020

Completion Date: June 30, 2020

Sanders Laboratory Number 2006672 and 2006733

1. Materials submitted for Testing:

Control and Treated samples of sheet metal material had been received by Sanders Laboratories for ISO 22196 antibacterial activity testing.

- A. Untreated 3"x3" sheet metal (36 pieces)
- B. Treated 3"x3" sheet metal (36 pieces)
- 2. Significance and Use:

This international Standard specifies a method of evaluating the antimicrobial activity of antimicrobial-treated, non-porous plastic products (including intermediate Products). Any results obtained with this International Standard should always refer to this standard and the conditions used. Results obtained with this International Standard indicate antimicrobial activity under the specified experimental conditions used herein, and do not reflect activity under other circumstances where a variety of factors, such as temperature, humidity, different bacterial or mold species, nutrient conditions, etc., have to be considered. A minimum diffusion of the antimicrobial agent/chemicals into the test inoculum is normally necessary with this procedure.

3. <u>Procedure:</u>

<u>Pre-culture of bacteria.</u> The *Escherichia coli* (ATCC #25922) and *Staphylococcus aureus* (ATCC #6538) were cultured on BHI (Brain Heart Infusion) Agar slants from the laboratory stock cultures. After 24 hours of cultivation, each was transferred to a second BHI Agar slant and cultured for an additional 22 hours.

<u>Preparation of test specimens:</u> Each plastic sample was handled with latex gloves to prevent finger prints and was cleaned with a sterile cloth and sterile DI water to remove most traces of bacteria. The use of heat or alcohol sterilization was avoided as the surface coating may have been compromised.

<u>Inoculation of the test specimens:</u> A 3 inch x 3 inch square of the sheet metal was placed in a sterile petri dish and a 0.4mL aliquot of the test inoculum was placed in the center of the surface of the specimen. The *E. coli* inoculum had a viable count of 2.5 x 10^5 colony forming units (cfu)/mL. The *Staphylococcus aureus* inoculum had a viable count of 7 x 10^5 cfu/mL.

The 0.4 mL aliquot of the test inoculum was into 10 mL of phosphate buffer and initial pour plate counts were determined. A 1 inch x 1 inch square sterile film (2/1000 inch thick) was placed upon each 0.4 mL drop to prevent evaporation and

maintain equal test exposure areas of 1 square inch. The petri dish lids were replaced to help prevent evaporative losses.

<u>Incubation of the inoculated test specimens:</u> Each sample was incubated at room temperature of 77° F (25° C) for 1 hour and 4 hours. Each sample was then washed with 10 mL of phosphate buffer and pour plate counts were determined.

			Antibacterial
<u>Sample ID For Day 1</u>	<u>cfu/cm²</u>	<u>% Kill</u>	Activity
Escherichia coli			
Untreated Metal - Inside			
Initial count	250,000		
1 hour count	9,800	96.08	1.40
4 hour count	0	100.00	5.39
Treated Metal - Inside			
Initial count	250,000		
1 hour count	0	100.00	5.39
4 hour count	0	100.00	5.39
Untreated Metal – Outside			
Initial count	250,000		
1 hour count	28,000	88.80	0.91
4 hour count	2,300	99.08	2.03
Treated Metal – Outside			
Initial count	250,000		
1 hour count	5,900	97.64	1.62
4 hour count	8	99.99	4.49
Staphylococcus aureus			
Untreated Metal - Inside			
Initial count	250,000		
1 hour count	120,000	52.00	0.31
4 hour count	300	99.88	2.91
Treated Metal - Inside			
Initial count	250,000		
1 hour count	28,000	88.80	0.94
4 hour count	45	99.98	3.74

<u>Untreated Metal – Outside</u>

Initial count	250,000		
1 hour count	110,000	56.00	0.35
4 hour count	5,500	97.80	1.65
Treated Metal – Outside			
Initial count	250,000		
1 hour count	16,000	93.6	1.19
4 hour count	2,000	99.20	2.09
			Antibacterial
<u>Sample ID For Day 7</u>	<u>cfu/cm²</u>	<u>% Kill</u>	Activity
Escherichia coli			
Untreated Metal - Inside			
Initial count	250,000		
1 hour count	130,000	48.00	0.28
4 hour count	120	99.95	3.31
Treated Metal - Inside			
Initial count	250,000		
1 hour count	8,400	96.64	2.10
4 hour count	20	99.99	4.09
Untreated Metal – Outside			
Initial count	250,000		
1 hour count	50,000	80.00	0.70
4 hour count	24,000	90.40	1.01
Treated Metal – Outside			
Initial count	250,000		
1 hour count	160,000	36.00	0.70
4 hour count	4,600	98.16	1.73
Staphylococcus aureus			
Untreated Metal - Inside			
Initial count	250,000		
1 hour count	110,000	56.00	0.35
4 hour count	2,900	98.84	1.93
Treated Metal - Inside			
Initial count	250,000		
1 hour count	6,900	97.24	1.56
4 hour count	70	99.97	3.55

Page 4 of 6

250,000		
30,000	88.00	0.92
15,000	94.00	1.22
250,000		
100,000	60.00	0.39
160	99.94	3.19
	250,000 30,000 15,000 250,000 100,000 160	250,000 30,000 88.00 15,000 94.00 250,000 100,000 60.00 160 99.94

<u>Calculate the "Antibacterial Activity"</u>: This is the difference in the logarithm of the viable cell count found on an antimicrobial-treated product and an untreated product after inoculation with and incubation of the bacteria. The following equation is used: $R = (U_t-U_o) - (A_t-U_o) = U_t-A_t$

Where: R = the "Antibacterial Activity"

 U_o = the average of the common logarithm of the number of viable bacteria (bacteria/cm²) recovered from the untreated test specimens immediately after inoculation.

 U_t = the average of the common logarithm of the number of viable bacteria (bacteria/cm²) recovered from the untreated test specimens after 1 hour and 4 hours of incubation.

 A_t = the average of the common logarithm of the number of viable bacteria (bacteria/cm²) recovered from the treated test specimens after 1 hour and 4 hours of incubation.

Antibacterial Activity	%Kill Compared to control	Comment
<1.5	<96.8	poor
1.5 to 2.0	96.8 to 99.0	borderline
2.0 to 3.0	99.0 to 99.9	good
>3.0	>99.9	excellent

4.0 Conclusions:

- A. Day 1 inside samples tested with Escherichia coli for 4 hours. Untreated sheet metal had 100% kill. Treated sheet metal had 100% kill. Neither the untreated sheet metal nor the treated sheet metal showed any sign of physical degradation.
- B. Day 1 outside samples tested with Escherichia coli for 4 hours. Untreated sheet metal had 99.08% kill. Treated sheet metal had 99.99% kill.
 Neither the untreated sheet metal nor the treated sheet metal showed any sign of physical degradation.

- C. Day 1 inside samples tested with Staphylococcus aureus for 4 hours. Untreated sheet metal had 99.88% kill. Treated sheet metal had 99.98% kill. Neither the untreated sheet metal nor the treated sheet metal showed any sign of physical degradation.
- D. Day 1 outside samples tested with Staphylococcus aureus for 4 hours. Untreated sheet metal had 97.80% kill. Treated sheet metal had 99.20% kill. Neither the untreated sheet metal nor the treated sheet metal showed any sign of physical degradation.
- E. Day 7 inside samples tested with Escherichia coli for 4 hours. Untreated sheet metal had 99.95% kill. Treated sheet metal had 99.99% kill. Neither the untreated sheet metal nor the treated sheet metal showed any sign of physical degradation following 7 days inside.
- F. Day 7 outside samples tested with Escherichia coli for 4 hours. Untreated sheet metal had 90.40% kill. Treated sheet metal had 98.16% kill. Neither the untreated sheet metal nor the treated sheet metal showed any sign of physical degradation following 7 days outside.
- G. Day 7 inside samples tested with Staphylococcus aureus for 4 hours. Untreated sheet metal had 98.84% kill. Treated sheet metal had 99.97% kill. Neither the untreated sheet metal nor the treated sheet metal showed any sign of physical degradation
- H. Day 7 outside samples tested with Staphylococcus aureus for 4 hours. Untreated sheet metal had 94.00% kill. Treated sheet metal had 99.94% kill. Neither the untreated sheet metal nor the treated sheet metal showed any sign of physical degradation following 7 days outside.



June 30, 2020

Mark Lane Nuturell Corporation 8823 Napa Landing Boerne, TX 78015 TEL: (210) 605-5627 FAX:

RE: Antimicrobial Testing

Ft. Myers Lab02 10090 Bavaria Rd. Fort Myers, FL 33913 TEL: (239) 590-0337 FAX: (239) 590-0536 Website: www.sanderslabs.net

Order No.: 2006733

Dear Mark Lane:

Sanders Laboratories, Inc received 24 sample(s) on 6/17/2020 for the analyses presented in the following report.

These results only pertain to the samples as received. These pages may include, but are not limited to: Analytical Data, Chains of Custodies, Subcontracted Data and Case Narratives for samples. Results relate only to the samples in the report.

Reports are archived for a minimum of 5 years. Copies of reports are available for a fee of \$50.00. Copies will be provided within 2 weeks of the time of the request. Laboratory PQL's are available upon request.

Test results meet all the requirements of the NELAP standards, unless otherwise noted. Nokomis Certificate # E84380 Fort Myers Certificate # E85457

A statement of estimated uncertainty of results is available upon request.

Laboratory report shall not be reproduced except in full, without the written approval of Sanders Laboratories.

Sanders Laboratories follows DEP standard operating procedures for field sampling, unless otherwise noted.

Katie Strothman Laboratory Director



Ft. Myers Lab02 10090 Bavaria Rd. Fort Myers, FL 33913 TEL: (239) 590-0337 FAX: (239) 590-0536 Website: www.sanderslabs.net

Definition Only

WO#: 2006733 Date: 6/30/2020

Definitions:

B: Results based upon colony counts outside the acceptable range.

G: Sample value indicates that the analyte was detected at or above the method detection limit in both the sample and the associated field blank, equipment blank, or trip blank, and the blank value was greater than 10% of the associated sample value. The value in the blank shall not be subtracted from associated samples.

I: The reported value is greater than or equal to the laboratory MDL but less than the laboratory PQL.

J: Estimated Value.

J7: Excessive amounts of Sodium Sulfite used to dechlorinate the sample due to high levels of chlorine present.

K: Off scale low, actual value is known to be less than the value given.

L: Off scale high, actual value is known to be greater than the value given.

NC: Not Certified. Parameter was ran but is not covered under laboratory accredited scopes.

Q: Sample held beyond acceptable holding time.

U: The compound was analyzed for, but not detected.

V: Indicates that the analyte was detected at or above the MDL in both the sample and the associated method blank and the value of 10 times the blank value was equal to or greater than the associated sample value.

Y: The laboratory analysis was from an improperly preserved sample.

Z: Too many colonies were present for accurate counting.

Sander: Laborato Environmental Testin	S Cories	TEL: (239) 5	Fc 90-0337 F. Website: w	Ft. M 10090 ort Myer AX: (239 www.sand	Iyers Lab02 Bavaria Rd. s, FL 33913)) 590-0536 derslabs.net	Analy WO#: Date Rep	rtical Report (continuous) 2006733 ported: 6/30/2020
CLIENT: Nuture Project: Antimi	ll Corporation crobial Testing]	Lab Order:	2006733
Lab ID: Client Sample ID:	2006733-001	it E coli count			Collection Dat Matri	e: 6/17/2020	0 11:30:00 AM
Analyses	Inside Ontreated - In	Result	MDL	Qual	Units	DF	Date Analyzed
MICROBIAL RESIS	TANCE				ISO 2219	6	Analyst: JL
Antibacterial Activity		250,000	10,000		CFU/Sq. inch	1	6/26/2020 10:00:00 AM
Lab ID: Client Sample ID:	2006733-002 Inside Untreated - 11	nr E.coli count			Collection Dat Matri	e: 6/17/2020 x: SOLID	0 11:30:00 AM
Analyses		Result	MDL	Qual	Units	DF	Date Analyzed
MICROBIAL RESIS	TANCE				ISO 2219	6	Analyst: JL
Antibacterial Activity		130,000	10,000		CFU/Sq. inch	1	6/26/2020 10:00:00 AM
Lab ID: Client Sample ID:	2006733-003	r E coli count			Collection Dat Matri	e: 6/17/2020) 11:30:00 AM
Analyses	mside Unitedieu - 41	Result	MDL	Qual	Units	DF	Date Analyzed
MICROBIAL RESIS	TANCE				ISO 2219	6	Analyst: JL
Antibacterial Activity		120	1.00		CFU/Sq. inch	1	6/26/2020 10:00:00 AM

PL Permit Limit

W Sample container temperature is out of limit as specified at testcode

ND Not Detected at the Reporting Limit

Sander	■		Fa	Ft. M 10090 I ort Myer.	1yers Lab02 Bavaria Rd. s, FL 33913	Analy	tical (continue	Report
Environmental Testing	g Services	TEL: (239) 5	90-0337 FA Website: w	AX: (239 ww.sand	9) 590-0536 derslabs.net	WO#: Date Rej	ported:	2006733 6/30/2020
CLIENT: Nuture Project: Antimi	ll Corporation crobial Testing				La	ıb Order:	20	006733
Lab ID:	2006733-004				Collection Date:	6/17/202	0 11:30:	00 AM
Client Sample ID:	Inside Treated - Init E	.coli count			Matrix:	SOLID		
Analyses		Result	MDL	Qual	Units	DF	Date A	Analyzed
MICROBIAL RESIS	TANCE				ISO 22196			Analyst: JL
Antibacterial Activity		250,000	1,000		CFU/Sq. inch	1	6/26/202	20 10:00:00 AM
Lab ID: Client Sample ID:	2006733-005 Inside Treated - 1hr E	.coli count			Collection Date: Matrix:	6/17/202 SOLID	0 11:30:	00 AM
Analyses		Result	MDL	Qual	Units	DF	Date A	Analyzed
MICROBIAL RESIS	TANCE				ISO 22196			Analyst: JL
Antibacterial Activity		8,400	100		CFU/Sq. Inch	1	6/26/202	20 10:00:00 AM
Lab ID:	2006733-006				Collection Date:	6/17/202	0 11:30:	00 AM
Client Sample ID:	Inside Treated - 4hr E	.coli count			Matrix:	SOLID		
Analyses		Result	MDL	Qual	Units	DF	Date A	Analyzed
MICROBIAL RESIS	TANCE				ISO 22196			Analyst: JL
Antibacterial Activity		20.0	1.00		CFU/Sq. Inch	1	6/26/202	20 10:00:00 AM

PL Permit Limit

W Sample container temperature is out of limit as specified at testcode

ND Not Detected at the Reporting Limit

Sanders Laborato Environmental Testing	s évices	TEL: (239) 59 W	Fo 0-0337 F. Vebsite: w	Ft. M 10090 I ort Myer AX: (239 www.sand	(yers Lab02 Bavaria Rd. s, FL 33913)) 590-0536 lerslabs.net	Analy WO#: Date Rep	(continuous) 2006733 ported: 6/30/2020
CLIENT: Nuturel Project: Antimic	l Corporation crobial Testing				La	ıb Order:	2006733
Lab ID: Client Sample ID:	2006733-007 Outside Untreated - Int	it E.coli count			Collection Date: Matrix:	6/17/2020 SOLID) 11:30:00 AM
Analyses		Result	MDL	Qual	Units	DF	Date Analyzed
	TANCE				ISO 22196		Analyst: JL
Antibacterial Activity		250,000	10,000		CFU/Sq. Inch	1	6/26/2020 10:00:00 AM
Lab ID:	2006733-008				Collection Date: Matrix	6/17/2020 SOLID) 11:30:00 AM
Client Sample ID:	Outside Untreated - 1h	r E.coli count	MDI	Oual	Unita	DE	Data Analyzad
Chent Sample ID: Analyses	Outside Untreated - 1h	r E.coli count Result	MDL	Qual	Units	DF	Date Analyzed
Analyses MICROBIAL RESIST	Outside Untreated - 1h	ir E.coli count Result	MDL	Qual	Units ISO 22196	DF	Date Analyzed Analyst: JL
Analyses MICROBIAL RESIST Antibacterial Activity	Outside Untreated - 1h	r E.coli count Result 50,000	MDL 10,000	Qual	Units ISO 22196 CFU/Sq. Inch	DF	Date Analyzed Analyst: JL 6/26/2020 10:00:00 AM
Analyses MICROBIAL RESIST Antibacterial Activity	Outside Untreated - 1h	fr E.coli count Result	MDL	Qual	Units ISO 22196 CFU/Sq. Inch	DF	Date Analyzed Analyst: JL 6/26/2020 10:00:00 AM
Analyses MICROBIAL RESIST Antibacterial Activity Lab ID:	Outside Untreated - 1h	r E.coli count Result	MDL	Qual	Units ISO 22196 CFU/Sq. Inch	DF 1 6/17/2020	Date Analyzed Analyst: JL 6/26/2020 10:00:00 AM
Analyses MICROBIAL RESIST Antibacterial Activity Lab ID: Client Sample ID:	Outside Untreated - 1h FANCE 2006733-009 Outside Untreated - 4h	r E.coli count Result 50,000 rr E.coli count	MDL 10,000	Qual	Units ISO 22196 CFU/Sq. Inch Collection Date: Matrix:	DF 1 6/17/2020 SOLID	Date Analyzed Analyst: JL 6/26/2020 10:00:00 AM
Analyses MICROBIAL RESIST Antibacterial Activity Lab ID: Client Sample ID: Analyses	Outside Untreated - 1h FANCE 2006733-009 Outside Untreated - 4h	r E.coli count Result 50,000 rr E.coli count Result	MDL 10,000 MDL	Qual	Units ISO 22196 CFU/Sq. Inch Collection Date: Matrix: Units	DF 1 6/17/2020 SOLID DF	Date Analyzed Analyst: JL 6/26/2020 10:00:00 AM 0 11:30:00 AM Date Analyzed
Analyses MICROBIAL RESIST Antibacterial Activity Lab ID: Client Sample ID: Analyses MICROBIAL RESIST	Outside Untreated - 1h TANCE 2006733-009 Outside Untreated - 4h TANCE	r E.coli count Result 50,000 Ir E.coli count Result	MDL 10,000 MDL	Qual Qual	Units ISO 22196 CFU/Sq. Inch Collection Date: Matrix: Units ISO 22196	DF 1 6/17/2020 SOLID DF	Date Analyzed Analyst: JL 6/26/2020 10:00:00 AM Date Analyzed Analyzed Analyst: JL

PL Permit Limit

W Sample container temperature is out of limit as specified at testcode

ND Not Detected at the Reporting Limit

Sander	- S		Fa	Ft. M 10090 . ort Myer	1yers Lab02 Bavaria Rd. s, FL 33913	Analy	(continuous)
Environmental Testin	ng Services	TEL: (239) 5	90-0337 F. Website: w	AX: (239 vww.san	9) 590-0536 derslabs.net	WO#: Date Rep	2006733 ported: 6/30/2020
CLIENT: Nuture Project: Antim	ell Corporation icrobial Testing				La	ab Order:	2006733
Lab ID:	2006733-010				Collection Date:	6/17/2020	0 11:30:00 AM
Client Sample ID:	Outside Treated - Init	E.coli count			Matrix:	SOLID	
Analyses		Result	MDL	Qual	Units	DF	Date Analyzed
MICROBIAL RESIS	STANCE				ISO 22196		Analyst: JL
Antibacterial Activity	,	250,000	10,000		CFU/Sq. Inch	1	6/26/2020 10:00:00 AM
Lab ID: Client Sample ID: Analyses	2006733-011 Outside Treated - 1hr	E.coli count Result	MDL	Oual	Collection Date: Matrix: Units	6/17/2020 SOLID DF	D 11:30:00 AM Date Analyzed
				<u> </u>			
MICROBIAL RESIS	STANCE				ISO 22196		Analyst: JL
Antibacterial Activity	,	160,000	10,000		CFU/Sq. Inch	1	6/26/2020 10:00:00 AM
Lab ID:	2006733-012			(Collection Date:	6/17/2020	0 11:30:00 AM
Client Sample ID:	Outside Treated - 4hr	E.coli count			Matrix:	SOLID	
Analyses		Result	MDL	Qual	Units	DF	Date Analyzed
MICROBIAL RESIS	STANCE				ISO 22196		Analyst: JL
Antibacterial Activity	,	4,600	100		CFU/Sq. Inch	1	6/26/2020 10:00:00 AM

PL Permit Limit

W Sample container temperature is out of limit as specified at testcode

ND Not Detected at the Reporting Limit

Sanders	■		Fa	Ft. M 10090 ort Myer	1yers Lab02 Bavaria Rd. s, FL 33913	Analy	tical Report
Caborato Environmental Testing	g Services	TEL: (239) 59	90-0337 F. Website: w	AX: (239 vww.san	9) 590-0536 derslabs.net	WO#: Date Rep	2006733 ported: 6/30/2020
CLIENT: Nuture Project: Antimi	ll Corporation crobial Testing				La	b Order:	2006733
Lab ID:	2006733-013				Collection Date:	6/17/2020) 11:30:00 AM
Client Sample ID:	Inside Untreated - Init	Staph count			Matrix:	SOLID	
Analyses		Result	MDL	Qual	Units	DF	Date Analyzed
	TANCE				ISO 22196		Analyst: JL
Antibacterial Activity		250,000	10,000		CFU/Sq. Inch	1	6/26/2020 10:00:00 AM
Lab ID: Client Sample ID:	2006733-014 Inside Untreated - 1hr	Staph count			Collection Date: Matrix:	6/17/2020 SOLID) 11:30:00 AM
Analyses		Result	MDL	Qual	Units	DF	Date Analyzed
MICROBIAL RESIS	TANCE				ISO 22196		Analyst: JL
Antibacterial Activity		110,000	10,000		CFU/Sq. Inch	1	6/26/2020 10:00:00 AM
Lab ID:	2006733-015			(Collection Date:	6/17/2020) 11:30:00 AM
Client Sample ID:	Inside Untreated - 4hr	Staph count			Matrix:	SOLID	
Analyses		Result	MDL	Qual	Units	DF	Date Analyzed
MICROBIAL RESIS	TANCE				ISO 22196		Analyst: JL

PL Permit Limit

Antibacterial Activity

W Sample container temperature is out of limit as specified at testcode

2,900

100

ND Not Detected at the Reporting Limit

1

RL Reporting Detection Limit

CFU/Sq. Inch

6/26/2020 10:00:00 AM

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Environmental Testin	g Services	TEL: (239)	590-0337 F. Website: w	AX: (239 vww.sand	9) 590-0536 derslabs.net	WO#: Date Re	ported:	2006733 6/30/2020
CLIENT: Nuture Project: Antimi	ll Corporation crobial Testing				L	ab Order:	20	006733
Lab ID:	2006733-016				Collection Date:	6/17/202	0 11:30:	00 AM
Client Sample ID:	Inside Treated - Init S	Staph count			Matrix:	SOLID		
Analyses		Result	MDL	Qual	Units	DF	Date A	nalyzed
MICROBIAL RESIS	TANCE				ISO 22196		,	Analyst: JL
Antibacterial Activity		250,000	10,000		CFU/Sq. Inch	1	6/26/202	0 10:00:00 AM
Lab ID: Client Sample ID:	2006733-017 Inside Treated - 1hr S	Staph count			Collection Date: Matrix:	6/17/202 SOLID	0 11:30:	00 AM
Analyses		Result	MDL	Qual	Units	DF	Date A	nalyzed
MICROBIAL RESIS	TANCE				ISO 22196		,	Analyst: JL
Antibacterial Activity		6,900	100		CFU/Sq. Inch	1	6/26/202	0 10:00:00 AM
Lab ID:	2006733-018				Collection Date:	6/17/202	0 11:30:	00 AM
Client Sample ID:	Inside Treated - 4hr S	Staph count			Matrix:	SOLID		
Analyses		Result	MDL	Qual	Units	DF	Date A	analyzed
MICROBIAL RESIS	TANCE				ISO 22196		,	Analyst: JL
Antibacterial Activity		70.0	1.00		CFU/Sq. Inch	1	6/26/202	0 10:00:00 AM

PL Permit Limit

W Sample container temperature is out of limit as specified at testcode

ND Not Detected at the Reporting Limit

Sander	≤ ▲		Fa	Ft. M 10090 ort Myer	Iyers Lab02 Bavaria Rd. s, FL 33913	Analy	(continuous)
Coborato Environmental Testin	g Services	TEL: (239) 59	90-0337 F. Website: w	AX: (239 vww.san	9) 590-0536 derslabs.net	WO#: Date Rej	2006733 ported: 6/30/2020
CLIENT: Nuture Project: Antimi	ll Corporation crobial Testing				L	ab Order:	2006733
Lab ID:	2006733-019				Collection Date	: 6/17/202	0 11:30:00 AM
Client Sample ID:	Outside Untreated - In	nit Staph count			Matrix	: SOLID	
Analyses		Result	MDL	Qual	Units	DF	Date Analyzed
MICROBIAL RESIS	TANCE				ISO 22196	i	Analyst: JL
Antibacterial Activity		250,000	10,000		CFU/Sq. Inch	1	6/26/2020 10:00:00 AM
Lab ID: Client Sample ID: Analyses	2006733-020 Outside Untreated - 1	hr Staph count Result	MDL	Qual	Collection Date Matrix Units	: 6/17/202 : SOLID DF	0 11:30:00 AM Date Analyzed
MICROBIAL RESIS	TANCE				ISO 22196	i	Analyst: JL
Antibacterial Activity		30,000	10,000		CFU/Sq. Inch	1	6/26/2020 10:00:00 AM
I ah ID:	2006733 021				Collection Deta	• 6/17/202	0 11-30-00 AM
Client Sample ID•	Outside Untreated - 4	hr Staph count			Matrix	: SOLID	0 11.30.00 AW
Analyses		Result	MDL	Qual	Units	DF	Date Analyzed
MICROBIAL RESIS	TANCE				ISO 22196	i	Analyst: JL
Antibacterial Activity		15,000	100		CFU/Sq. Inch	1	6/26/2020 10:00:00 AM

PL Permit Limit

W Sample container temperature is out of limit as specified at testcode

ND Not Detected at the Reporting Limit

Sande	rs		Fe	Ft. M 10090 . ort Myer	Iyers Lab02 Bavaria Rd. s, FL 33913	Ana	lytical	Report
Environmental Test	ories ting Services	TEL: (239) 5	590-0337 F Website: v	AX: (239 vww.san	9) 590-0536 derslabs.net	WO#: Date F	Reported:	2006733 6/30/2020
CLIENT: Nutu Project: Antir	rell Corporation nicrobial Testing				I	ab Orde	r: 20	006733
Lab ID:	2006733-022				Collection Date	: 6/17/20)20 11:30:	00 AM
Client Sample ID	: Outside Treated - In	nit Staph count			Matrix	: SOLID	I.	
Analyses		Result	MDL	Qual	Units	DF	Date A	Analyzed
MICROBIAL RESI	STANCE				ISO 22196	;	Ĺ	Analyst: JL
Antibacterial Activit	ÿ	250,000	10,000		CFU/Sq. Inch	1	6/26/202	20 10:00:00 AM
Lab ID: Client Sample ID	2006733-023 Outside Treated - 1	hr Staph count			Collection Date Matrix	: 6/17/20 : SOLID)20 11:30:	00 AM
Analyses		Result	MDL	Qual	Units	DF	Date A	Analyzed
MICROBIAL RESI	STANCE				ISO 22196	5	,	Analyst: JL
Antibacterial Activit	y	100,000	10,000		CFU/Sq. inch	1	6/26/202	20 10:00:00 AM
Lab ID:	2006733-024				Collection Date	: 6/17/20)20 11:30:	00 AM
Client Sample ID	: Outside Treated - 4	hr Staph count			Matrix	: SOLID	1	
Analyses		Result	MDL	Qual	Units	DF	Date A	Analyzed
MICROBIAL RESI	STANCE				ISO 22196	5	,	Analyst: JL

Antibacterial Activity

Qualifiers:

Н

Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

1

RL Reporting Detection Limit

CFU/Sq. inch

PL Permit Limit

W Sample container temperature is out of limit as specified at testcode

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Original Page 10 of 10

6/26/2020 10:00:00 AM

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Lab	oratories						-	-				(Lab	Use	Only)						
Environme	ental Testing Services			dimension of the second										<u> </u>	1	-	-	1	1		
Client:	Nuturell Corporation		P	Report To:	Mark By	ron	Lan	e Ph	ID.	-	_	Pn	ojeci	Nam	ie:		90	day	effica	су	
Address:	8823 Nana Landing			C-mail :	markiggi		rell.c	om		-	-	Pr	oject	Loca	ation:		L				
	Rearran Trues 70045			Bill to:		1	_					Cu	iston	ner Ty	/pe:						
	Boeme Texas 78015			P.O, #						-		Kit	#:								-
Phone:	210-605-5627		Preservativ	ve: HCL =	H, HNC)3=1	N, Na	12S2	O3 = ST			Re	ques	sted E	Due D	Date:		T	T		Г
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Client:	Nuturell Corporation			Report To:	Mark Byr	on L	ane P	hD.			P	rojec	t Nar	ne:		90 d	ay effi	cacy	
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1001055.	0023 Napa Landing			Bill to:							C	ustor	ner T	ype:	T	T	T	1	1
	Boerne Texas 78015			P.O. #							K	it #:	T		ł				1
² hone:	210-605-5627		Preservat	ive: HCL =	H, HNO3	= N,	Na ₂ S	203 =	ST	-	R	eque	sted	Due	Date:	-	Т	-	Т
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Environme	ental Testing Services				1			1		_		+	Des	1	<u> </u>	1	+	+-		1		1_
Client:	Nuturell Corporation			E-mail	Mark B	yror	Lan	e Ph	ID.	-	1		PIC	ject	Nam	16:		90	day	effica	acy	
Address:	8823 Napa Landing			Dill ter	markice	T	T	T	+	+			Pro	ject	Loca	ition	-			1		
	Boerne Texas 78015			Bill (0;		+-	+	+-	-	-	-		Cu	stor	ner Ty	/pe:						
Phone:	210-605 5627			P.O. #	L								Kit	#:								
For I	210-003-5627		Preservati	ve: HCL =	H, HNC)3=1	N, Na	12S20	O3 =	ST			Red	lues	ted [Due	Date	;	1	T		Τ
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September 21, 2020

Mark Lane Nuturell Corp.Nuturell Corporation 8823 Napa Landing Boerne, TX 78015 TEL: (210) 605-5627 FAX:

RE: Antimicrobial Testing

Order No.: 2006735

Nokomis Lab01 1050 Endeavor Court

Nokomis, FL 34275

Website: www.sanderslabs.net

TEL: (941) 234-1000 FAX: (941) 484-6774

Dear Mark Lane:

Sanders Laboratories, Inc received 24 sample(s) on 6/17/2020 for the analyses presented in the following report.

These results only pertain to the samples as received. These pages may include, but are not limited to: Analytical Data, Chains of Custodies, Subcontracted Data and Case Narratives for samples. Results relate only to the samples in the report.

Reports are archived for a minimum of 5 years. Copies of reports are available for a fee of \$50.00. Copies will be provided within 2 weeks of the time of the request. Laboratory PQL's are available upon request.

Test results meet all the requirements of the NELAP standards, unless otherwise noted. Nokomis Certificate # E84380 Fort Myers Certificate # E85457

A statement of estimated uncertainty of results is available upon request.

Laboratory report shall not be reproduced except in full, without the written approval of Sanders Laboratories.

Sanders Laboratories follows DEP standard operating procedures for field sampling, unless otherwise noted.

grach

Jeff Walsh Operations Manager



Nokomis Lab01 1050 Endeavor Court Nokomis, FL 34275 TEL: (941) 234-1000 FAX: (941) 484-6774 Website: www.sanderslabs.net

Definition Only

WO#: 2006735 Date: 9/21/2020

Definitions:

B: Results based upon colony counts outside the acceptable range.

G: Sample value indicates that the analyte was detected at or above the method detection limit in both the sample and the associated field blank, equipment blank, or trip blank, and the blank value was greater than 10% of the associated sample value. The value in the blank shall not be subtracted from associated samples.

I: The reported value is greater than or equal to the laboratory MDL but less than the laboratory PQL.

J: Estimated Value.

J7: Excessive amounts of Sodium Sulfite used to dechlorinate the sample due to high levels of chlorine present.

K: Off scale low, actual value is known to be less than the value given.

L: Off scale high, actual value is known to be greater than the value given.

NC: Not Certified. Parameter was ran but is not covered under laboratory accredited scopes.

Q: Sample held beyond acceptable holding time.

U: The compound was analyzed for, but not detected.

V: Indicates that the analyte was detected at or above the MDL in both the sample and the associated method blank and the value of 10 times the blank value was equal to or greater than the associated sample value.

Y: The laboratory analysis was from an improperly preserved sample.

Z: Too many colonies were present for accurate counting.



Antibacterial Activity

98% Complete

Oualifiers: Н

Holding times for preparation or analysis exceeded Permit Limit

PL W

Sample container temperature is out of limit as specified at testcode

ND Not Detected at the Reporting Limit

Sander	s 🍐		1	Nol 050 End Nokom	comis Lab01 eavor Court is, FL 34275	Anal	ytical (continuo	Report
Environmental Testin	g Services	TEL: (941)	234-1000 H Website:	FAX: (94 www.san	1) 484-6774 derslabs.net	WO#: Date R	eported:	2006735 9/21/2020
CLIENT: Nuture Project: Antim	ell Corp.Nuturell Corp icrobial Testing	poration				Lab Order	: 20	06735
Lab ID:	2006735-004				Collection Da	te: 6/17/202	20 11:30:0	00 AM
Analyses	Inside Treated - Init	Result	MDL	Qual	Units	DF	Date A	nalyzed
MICROBIAL RESIS	TANCE				ISO 221	96	Ą	nalyst: JL
Antibacterial Activity		250,000	10,000		CFU/sq. inch	1	9/19/2020	0 11:00:00 AM
Lab ID: Client Sample ID:	2006735-005	E coli count			Collection Da Matr	te: 6/17/202	20 11:30:0	00 AM
Analyses	inside Treated - Thi	Result	MDL	Qual	Units	DF	Date A	nalyzed
MICROBIAL RESIS	TANCE				ISO 221	96	A	nalyst: JL
Antibacterial Activity		30,000	10,000		CFU/sq. inch	1	9/19/2020	0 11:00:00 AM
Lab ID:	2006735-006	T - P - (Collection Da	te: 6/17/202	20 11:30:0	00 AM
Analyses	inside Treated - 4 hr	Result	MDL	Qual	Units	DF	Date A	nalyzed
MICROBIAL RESIS	TANCE				ISO 221	96	A	nalyst: JL

Antibacterial Activity

900

99.999% Complete

100

Qualifiers:

 H
 Holding times for preparation or analysis exceeded

 PL
 Permit Limit

PL Permit Lii W Sample co

Sample container temperature is out of limit as specified at testcode

ND Not Detected at the Reporting Limit

1

RL Reporting Detection Limit

CFU/sq. inch



9/19/2020 11:00:00 AM



Oualifiers:

H Holding times for preparation or analysis exceeded
 PL Permit Limit

PL Permit Lin W Sample co

Sample container temperature is out of limit as specified at testcode

ND Not Detected at the Reporting Limit

Sander	-		1	Nol 050 End Nokom	komis Lab01 leavor Court is, FL 34275	Analy	ytical Repo (continuous)	rt
Coborato Environmental Testin	g Services	TEL: (941) 2	234-1000 H Website:	FAX: (94 www.san	1) 484-6774 derslabs.net	WO#: Date Re	200673: eported: 9/21/2020	;5 20
CLIENT: Nuture Project: Antim	ll Corp.Nuturell Corp	ooration			L	ab Order:	2006735	
Lab ID: Client Sample ID:	2006735-010 Outside Treated - In	it E.coli count			Collection Date Matrix	: 6/17/202 : SOLID	20 11:30:00 AM	
Analyses		Result	MDL	Qual	Units	DF	Date Analyzed	
MICROBIAL RESIS	TANCE				ISO 22196	5	Analyst: J	IL
Antibacterial Activity		250,000	10,000		CFU/sq. inch	1	9/19/2020 11:00:00	AM
Lab ID: Client Sample ID:	2006735-011 Outside Treated 1h	r E coli count			Collection Date Matrix	: 6/17/202	20 11:30:00 AM	
Analyses	Outside Treated - Th	Result	MDL	Qual	Units	DF	Date Analyzed	
MICROBIAL RESIS	TANCE				ISO 22196	5	Analyst: J	IL
Antibacterial Activity		40,000	10,000		CFU/sq. inch	1	9/19/2020 11:00:00	AM
Lab ID:	2006735-012				Collection Date	: 6/17/202	20 11:30:00 AM	
Client Sample ID:	Outside Treated - 4h	r E.coli count			Matrix	: SOLID		
Analyses		Result	MDL	Qual	Units	DF	Date Analyzed	
MICROBIAL RESIS	TANCE				ISO 22196	5	Analyst: J	JL

Antibacterial Activity

10,000

96% Complete

100

Qualifiers:

 H
 Holding times for preparation or analysis exceeded

 PL
 Permit Limit

W Sample c

Sample container temperature is out of limit as specified at testcode

ND Not Detected at the Reporting Limit

1

RL Reporting Detection Limit

CFU/sq. inch

9/19/2020 11:00:00 AM

Sander	≤ ▲		1	Nok 050 End Nokomi	comis Lab01 eavor Court is, FL 34275	Anal	ytical Repo	ort
Convironmental Testin	g Services	TEL: (941) 2	234-1000 F Website: v	FAX: (94 www.san	1) 484-6774 derslabs.net	WO#: Date Re	20067. eported: 9/21/202	35 20
CLIENT: Nuture Project: Antim	ell Corp.Nuturell Corpo icrobial Testing	ration			Ι	Lab Order	2006735	
Lab ID:	2006735-013				Collection Date	e: 6/17/202	20 11:30:00 AM	
Client Sample ID:	Inside Untreated - Init	t Staph count			Matrix	K: SOLID		
Analyses		Result	MDL	Qual	Units	DF	Date Analyzed	
MICROBIAL RESIS	TANCE				ISO 2219	6	Analyst:	JL
Antibacterial Activity		250,000	10,000		CFU/sq. inch	1	9/19/2020 11:00:00	AM
Lab ID: Client Sample ID:	2006735-014 Inside Untreated - 1ht	Staph count			Collection Date Matriy	e: 6/17/202	20 11:30:00 AM	
Analyses	Inside entreated Thi	Result	MDL	Qual	Units	DF	Date Analyzed	l
MICROBIAL RESIS	TANCE				ISO 2219	6	Analyst:	JL
Antibacterial Activity		140,000	10,000		CFU/sq. inch	1	9/19/2020 11:00:00	AM
Lab ID:	2006735-015			(Collection Date	e: 6/17/202	20 11:30:00 AM	
Client Sample ID:	Inside Untreated - 4hr	Staph count			Matrix	K: SOLID		
Analyses		Result	MDL	Qual	Units	DF	Date Analyzed	
MICROBIAL RESIS	TANCE				ISO 2219	6	Analyst:	JL
Antibacterial Activity		6,000	100		CFU/sq. inch	1	9/19/2020 11:00:00) AM

97.6% Complete

Qualifiers:

 H
 Holding times for preparation or analysis exceeded

 PL
 Permit Limit

W Sample co

Sample container temperature is out of limit as specified at testcode

ND Not Detected at the Reporting Limit

Sander	≤ ▲		1	Nol 050 End Nokom	comis Lab01 eavor Court is, FL 34275	Analytical Report			
Caborato Environmental Testin	g Services	TEL: (941)	234-1000 H Website:	FAX: (94 www.san	1) 484-6774 derslabs.net	WO#: Date Re	eported:	2006735 9/21/2020	
CLIENT: Nuture Project: Antim	ell Corp.Nuturell Corp icrobial Testing	poration]	Lab Order	: 20	006735	
Lab ID: Client Sample ID:	2006735-016 Inside Treated - Init	Staph count			Collection Dat Matri	e: 6/17/202 x: SOLID	20 11:30:	00 AM	
Analyses		Result	MDL	Qual	Units	DF	Date A	Analyzed	
MICROBIAL RESIS	TANCE				ISO 2219	6		Analyst: JL	
Antibacterial Activity		250,000	10,000		CFU/sq. inch	1	9/19/202	20 11:00:00 AM	
Lab ID: Client Sample ID:	2006735-017 Inside Treated - 1hr	Staph count			Collection Dat Matri	e: 6/17/202 x: SOLID	20 11:30:	00 AM	
Analyses		Result	MDL	Qual	Units	DF	Date A	Analyzed	
MICROBIAL RESIS	TANCE				ISO 2219	6		Analyst: JL	
Antibacterial Activity		80,000	10,000		CFU/sq. inch	1	9/19/202	20 11:00:00 AM	
Lab ID:	2006735-018	Stoph court			Collection Dat	e: 6/17/202	20 11:30:	00 AM	
Analyses	mside Treated - 4hr	Result	MDL	Qual	Units	x: SOLID DF	Date A	Analyzed	
MICROBIAL RESIS	TANCE				ISO 2219	6		Analyst: JL	

Antibacterial Activity

100

99.999% Complete

1.00

Qualifiers:

 H
 Holding times for preparation or analysis exceeded

 PL
 Permit Limit

PL Permit Lir W Sample co

Sample container temperature is out of limit as specified at testcode

ND Not Detected at the Reporting Limit

1

RL Reporting Detection Limit

CFU/sq. inch

9/19/2020 11:00:00 AM



Oualifiers:

H Holding times for preparation or analysis exceeded
 PL Permit Limit

PL Permit Li W Sample c

Sample container temperature is out of limit as specified at testcode

ND Not Detected at the Reporting Limit

RL Reporting Detection Limit

Original Page 9 of 14

Sander	s 🛕		1	Nol 050 End Nokom	Analytical Report				
Laborato Environmental Testin	ng Services	TEL: (941) 2	234-1000 H Website:	FAX: (94 www.san	1) 484-6774 derslabs.net	WO#: Date R	Reported:	2006735 9/21/2020	
CLIENT: Nutur Project: Antim	ell Corp.Nuturell Corp icrobial Testing	poration]	Lab Ordei	r: 20	006735	
Lab ID:	2006735-022				Collection Dat	e: 6/17/20	20 11:30:	00 AM	
Client Sample ID:	Outside Treated - In	it Staph count			Matri	x: SOLID			
Analyses		Result	MDL	Qual	Units	DF	Date A	nalyzed	
MICROBIAL RESIS	STANCE				ISO 2219	6	,	Analyst: JL	
Antibacterial Activity		250,000	10,000		CFU/sq. inch	1	9/19/202	0 11:00:00 AM	
Lab ID: Client Sample ID:	2006735-023 Outside Treated - 11	nr Staph count			Collection Dat Matri	e: 6/17/20 x: SOLID	20 11:30:	00 AM	
Analyses		Result	MDL	Qual	Units	DF	Date A	Analyzed	
MICROBIAL RESIS	STANCE				ISO 2219	6	,	Analyst: JL	
Antibacterial Activity		90,000	10,000		CFU/sq. inch	1	9/19/202	0 11:00:00 AM	
Lab ID:	2006735-024				Collection Dat	e: 6/17/20	020 11:30:	00 AM	
Lab ID: Client Sample ID:	2006735-024 Outside Treated - 41	nr Staph count			Collection Dat Matri	e: 6/17/20 x: SOLID	20 11:30:	00 AM	

 MICROBIAL RESISTANCE
 ISO 22196
 Analyst: JL

 Antibacterial Activity
 1,600
 100
 CFU/sq. inch
 1
 9/19/2020 11:00:00 AM

99.4% Complete

Qualifiers:

 H
 Holding times for preparation or analysis exceeded

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Sample container temperature is out of limit as specified at testcode

ND Not Detected at the Reporting Limit

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12

: page 2-f4 _____2006735 Sanders CHAIN OF CUSTODY RECORD Project # (Lab Use Only) Laboratories Environmental Testing Services Report To: Mark Byron Lane PhD. Project Name: 90 day efficacy Client: Nuturell Corporation 2 E-mail: mark@nuturell.com Project Location: Address: 8823 Napa Landing Bill to: Customer Type: Boerne Texas 78015 P.O. # Kit #: Phone: 210-605-5627 Preservative: HCL = H, HNO3= N, Na2S2O3 = ST Requested Due Date: Fax: H₂SO₄ = S, NaOH = SH, NH₄CI = NH Analysis Requested Sampled By (PRINT) LANS MARK Preservatives Sampler Signature Sample Мерох Date Time Type pH Ice Sample Description 72 metal plates with Nuturell disinfect Ory 20 Lut Exceli court 7 Erections 8 - carre 1661 9 Eren (iland 1t Fali cont 1025 BoiRe Lot # Comments Relinqueshed By/Afiliation Date: Time: Accepted By/Affiliation D Okay to Run As UPS 12 888 ONW 02/66/2507 12 Client Initial: 6 Xirkoza Kim 1

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September 2, 2020

Antiviral Evaluation of Nuturell's Disinfectant

Summary

We tested Nuturell's liquid disinfectant for its antiviral properties against the OC43 human coronavirus. Stainless steel carrier disks were inoculated with OC43 and allowed to dry. The inoculated disks were then placed into the Nuturell disinfectant for 0 and 10 min. Antiviral activity was discontinued after the incubation time by adding SCDLP Neutralization Buffer. The residual virus was recovered by vortexing and was detected by incubating with RD cells for 48 hrs. RD cells were then fixed with a 1:1 acetone:methanol mixture (to permeabilize cells) and stained with a monoclonal antibody to detect OC43 viral particles. The resultant foci are then enumerated and reported as Focus Forming Units (FFU).

Test Method Details

Test Method	Modified ASTM E2197						
Test Organism	OC43 human coronavirus						
Test Solution	Eagles Modified Medium with 2% Fetal Bovine Serum						
Test Samples	Nuturell's liquid disinfectant						
Recovery Solution	Modified SCDLP Buffer						
Method for Measuring Viral Activity	Dilution Plate Method onto RD cells, viral activity was detected by the presence of viral particles (foci) using a monoclonal antibody specific for OC43. Foci were then counted giving Foci Forming Units (FFU).						

ResInnova Laboratories 8807 Colesville Rd, 3rd Floor Silver Spring, MD 20910





Results

Modified ISO 18184: Determination of Antiviral Activity of Textile Products							
Number of Replicate Experiments	2						
Average Concentration of Inoculum	3.80+7 FFU/ml = 7.58 log FFU/ml						

	10 min	
Average CFU/disc sample	1.36E+04	7.38E+02
Percent Reduction	0.00	0.95
Log Reduction	0.00	1.27





CONFIDENTIAL TEST REPORT No. NUT-1a October 12, 2020

Nuturell

Antimicrobial Evaluation of SterilRay UV Treated Articles

Test Method Details

Test Method	Modified ASTM E2197
Test Organism	OC43 Human Coronavirus
Test Solution	Eagle's Modified Medium with 2% Fetal Bovine Serum
Test Discs	20mm diameter magnetic stainless steel discs
Inoculum Applied to Test Disc	0.010 mL applied to each disc and spread to within 1 mm of edges, then dried at room temperature
Disinfectant Application	0.050 mL applied over inoculum surface once dried. Exposed for 20 minutes \pm 10 seconds before recovering.
Recovery Solution	10 mL modified SCDLP Buffer
Measuring Method of Number of Viable Virus	Dilution Plate Method onto Rhabdomyosarcoma cells, viral particles were determined using an anti-OC43 monoclonal antibody. Foci were then counted giving Foci Forming Units (FFU).

Results – OC43 disc testing

Modified ASTM E2197: Standard Quantitative Disk Carrier Test Method										
Number of Replicate Experime	nts	1								
Number of Replicate Discs per	Experiment	3								
Exposure Time	Average Viral Burden (FFU/disc)	Average Log Viral Burden (FFU/disc)	Log Reduction (vs Control)	Percent Reduction (vs Control)						
Control	2.85E+04	4.45								
Nuturell - 20 minutes	4.80E+03	3.68	0.77	99.9996% Control 83.16%						





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