nutra RESEARCH

Microbiological Testing of OPA Life (Nutra OPA)

TEST 1

USP Challenge Test of Organic Plant Acids (OPA)

Background of Test

The USP Challenge test is an accepted well-documented test showing the ability of a substance to retard the growth of tested pathogens, much like a preservative protects the contents of a bottle. Known microbial pathogens were exposed to OPA on microbial growth/support media. These results show that OPA destroyed all of the five pathogens tested, and they did not return during the entire 28 day testing period.

Sample Description:

Sample:	Test Performed:	Method:
OPA	USP Challenge Test	USP 23

Results: **Table Summary**

Micro Organism	**Initial Inoculum/ml**	**Day 7**	**Day 14**	**Day 21**	**Day 28**
		Colony Forming Units/ml			
A. niger	1.9×10^5	<10	<10	<10	<10
B. albicans	2.2×10^5	<10	<10	<10	<10
E. coli	1.7×10^5	<10	<10	<10	<10
P. aeruginosa	3.5×10^5	<10	<10	<10	<10
S. aureus	2.4×10^5	<10	<10	<10	<10

Microbiology Analytical Report

Sample	Test Performed	Method
OPA	Zone of Inhibition	USP 23

Results:

Zone of Inhibition	OPA	Negative Control	Novobiotin
Staphylococcus aureus	27.9 mm	No Zone	27.8 mm

Interpretation:

The pathogen retarding capability of the product examined is effective if:

1. The concentration of viable bacteria is reduced to not more than 0.1% of the initial concentration by the 14th day,
2. The concentration of viable yeasts and molds remains at or below the initial concentration during the first 14 days,
3. The concentration of each test microorganism remains at or below these designated levels during the remainder of the 28 day test period, and;
4. A clear zone of inhibition of a bacteria indicates properties similar to the antibiotic novobiotin and no bacteria growth.

TEST 2

OPA – A highly effective cleanser, detoxifier, and immune system protector.

Antimicrobial Effectiveness Test/Category 1C

Background of Test
The Preservative Effectiveness Test demonstrates the effectiveness of a substance, such as OPA, when used as a preservative or additive – to stop the growth of such pathogenic organisms as E.coli, Aspergillus niger, Candida albicans, Pseudomonas aeruginosa, and Staphylococcus aureus.

Sample Description:

Sample:	Test Performed:	Method:
OPA	Pres./Effect Test	USP 23, 8th Sup.

Sample Preparation:
The following organisms – *Aspergillus niger, Candida albicans, Escherichia coli, Pseudomonas aeruginosa, and Staphylococcus aureus* – are used to challenge the specimen for twenty-eight (28) days. Microorganism survival is monitored at fourteen (14) and twenty-eight (28) day intervals.

Results: **Table Summary**

Micro Organism	**Initial Inoculum/ml**	Colony Forming Units/ml 14 days	28 days	Log reduction from Initial 14 days	28 days
A. niger	1.9×10^5	<10	<10	4.28	4.28
B. albicans	2.2×10^5	<10	<10	4.34	4.34
E. coli	1.7×10^5	<10	<10	4.23	4.23
P. aeruginosa	3.5×10^5	<10	<10	4.54	4.54
S. aureus	2.4×10^5	<10	<10	4.39	4.38

Interpretation:

For Category 1C Products, the preservative is effective in the product examined if:

a.) Not less than or equal to 1.0 log reduction from the initial count at 14 days, and no increase* from the 14 day count at 25 days is observed in the bacterial samples.

b.) No increase* from the initial calculated count at 14 and 28 days is observed in the yeast and mold samples.

* No increase is defined as not more than 0.5 log unit higher than the previous value measured.

Conclusion:

The above test results meet the current USP criteria for the Antimicrobial Effectiveness Test.

TEST 3

Microbial Report: Log Reduction

Background of Test

The Microbiological Test for Log reduction tests for a product's ability to kill such pathogenic organisms as E.coli, Pseudomonas aeruginosa, and Staphylococcus aureus in drinking water.
Comparison is to Sterile Buffered Water (SBW).

Sample Description:

Sample:	Test Performed:	Method:	Lot:
OPA	Log Reduction	USP 23/8	091808

Escherichia coli ATCC 8739

Exposure Time	Concentration of Organism (CFU/ml)		% Reduction		Log Reduction	
	Control	Product	Control	Product	Control	Product
Initial	2.7×10^5	2.7×10^5	---	---	---	---
01 Minute	2.7×10^5	2.2×10^5	0.0	18.5	0.0	0.3
05 Minute	2.6×10^5	1.7×10^5	3.7	37.0	0.0	0.5
15 Minute	2.7×10^5	1.3×10^5	0.0	51.9	0.0	0.7

Pseudomonas aeruginosa ATCC 9027

Exposure Time	Concentration of Organism (CFU/ml)		% Reduction		Log Reduction	
	Control	Product	Control	Product	Control	Product
Initial	2.2×10^5	2.1×10^5	---	---	---	---
01 Minute	2.2×10^5	1.1×10^5	0.0	50.0	0.0	0.7
05 Minute	2.2×10^5	6.5×10^4	0.0	70.5	0.0	0.8
15 Minute	2.2×10^5	3.0×10^4	0.0	86.4	0.0	0.9

Staphylococcus aureus ATCC 6538

Exposure Time	Concentration of Organism (CFU/ml)		% Reduction		Log Reduction	
	Control	Product	Control	Product	Control	Product
Initial	1.9×10^5	1.9×10^5	---	---	---	---
01 Minute	1.9×10^5	6.4×10^4	0.0	66.3	0.0	0.8
05 Minute	1.9×10^5	4.1×10^4	0.0	78.4	0.0	0.9
15 Minute	1.9×10^5	9.8×10^3	0.0	94.8	0.0	1.0

The superiority of OPA as a trace mineral/electrolyte supplement

Background of Test

The essentiality of trace minerals/electrolyte supplementation as from OPA is to reduce our neuro resistance and increase the speed (velocity) with which these nerve impulses tell our bodies what to do. The best was to accomplish this is to increase intake of trace minerals and electrolytes.

Here is the result of a recent electrical conductivity test comparing a group of mineral/electrolyte products: the goal was to activate a 50cc reverse osmosis water activated circuit

Note: All electrolyte solutions were diluted 1:10 before testing. Unreacted sulfuric acid or mineral acids are known to cause false positive results.

Results: Reverse Osmosis Conductivity Test

Deionized Water	No Effect
OPA	13 drops activated the 50 cc reverse osmosis circuit.
Progressive Trace Mineral Solution	27 drops activated the circuit.
Real Willard Water	>150 drops activated circuit.

Modified from: An excerpt from a report by Dr. Richard Weber, O.M.D., PhD, N.M.D., H.M.D., Dipl. (NCAA) (ND) (HOM) – July 16, 1996.

This procedure is a good measure of the efficacy of a trace mineral and electrolyte or free proton source. The higher the number of drops required in our test, the weaker the product; the lower the number, the stronger the product. The OPA product was stronger in conductivity than a standardized purchased mineral solution.

TEST 1

USP Challenge Test of Oreganal Oil

Background of Test

The USP Challenge test is an accepted well-documented test showing the ability of a substance to retard the growth of tested pathogens, much like a preservative protects the contents of a bottle. Known microbial pathogens were exposed to Oreganal Oil on microbial growth/support media. These results show that Oreganal Oil destroyed all of the five pathogens tested, and they did not return during the entire 28 day testing period.

Sample Description:

Sample:	Test Performed:	Method:
OREGANAL OIL	USP Challenge Test	USP 23

Results: **Table Summary**

Micro Organism	**Initial Inoculum/ml**	**Day 7**	**Day 14**	**Day 21**	**Day 28**
		Colony Forming Units/ml			
A. niger	1.9×10^5	8.1×10^4	4.3×10^4	3.6×10^3	3.1×10^3
B. albicans	2.2×10^5	1.1×10^5	9.2×10^4	6.7×10^4	2.6×10^4
E. coli	1.7×10^5	1.4×10^5	1.3×10^5	1.1×10^5	0.9×10^5
P. aeruginosa	3.5×10^5	3.2×10^5	2.3×10^5	1.8×10^5	1.7×10^5
S. aureus	2.4×10^5	1.5×10^5	1.1×10^5	0.9×10^5	0.5×10^5

Microbiology Analytical Report

Sample	Test Performed	Method
OREGANAL OIL	Zone of Inhibition	USP 23

Results:

Zone of Inhibition	OREGANAL OIL	Negative Control	Novobiotin
Staphylococcus aureus	4.2 mm	No Zone	27.8 mm

Interpretation:

The pathogen retarding capability of the product examined is effective if:

1. The concentration of viable bacteria is reduced to not more than 0.1% of the initial concentration by the 14^{th} day,
2. The concentration of viable yeasts and molds remains at or below the initial concentration during the first 14 days,
3. The concentration of each test microorganism remains at or below these designated levels during the remainder of the 28 day test period, and;
4. A clear zone of inhibition of a bacteria indicates properties similar to the antibiotic novobiotin and no bacteria growth.

TEST 2

OREGANAL OIL – A highly effective cleanser, detoxifier, and immune system protector.

Antimicrobial Effectiveness Test/Category 1C

Background of Test
The Preservative Effectiveness Test demonstrates the effectiveness of a substance, such as OREGANAL OIL, when used as a preservative or additive – to stop the growth of such pathogenic organisms as E.coli, Aspergillus niger, Candida albicans, Pseudomonas aeruginosa, and Staphylococcus aureus.

Sample Description:

Sample:	Test Performed:	Method:
OREGANAL OIL	Pres./Effect Test	USP 23, 8th Sup.

Sample Preparation:
The following organisms – *Aspergillus niger, Candida albicans, Escherichia coli, Pseudomonas aeruginosa, and Staphylococcus aureus* – are used to challenge the specimen for twenty-eight (28) days. Microorganism survival is monitored at fourteen (14) and twenty-eight (28) day intervals.

Results: **Table Summary**

Micro Organism	**Initial Inoculum/ml**	Colony Forming Units/ml 14 days	28 days		Log reduction from Initial 14 days	28 days
A. niger	1.9×10^5	4.3×10^4	3.1×10^3		1.9	2.99
B. albicans	2.2×10^5	9.2×10^4	2.6×10^4	1.8	2.9	
E. coli	1.7×10^5	1.3×10^5	0.9×10^5		0.2	0.3
P. aeruginosa	3.5×10^5	2.3×10^5	1.7×10^5		0.2	0.7
S. aureus	2.4×10^5	1.1×10^5	0.5×10^5		0.7	0.9

Interpretation:

For Category 1C Products, the preservative is effective in the product examined if:

a.) Not less than or equal to 1.0 log reduction from the initial count at 14 days, and no increase* from the 14 day count at 25 days is observed in the bacterial samples.

b.) No increase* from the initial calculated count at 14 and 28 days is observed in the yeast and mold samples.

* No increase is defined as not more than 0.5 log unit higher than the previous value measured.

Conclusion:

The above test results meet the current USP criteria for the Antimicrobial Effectiveness Test.

TEST 3

Microbial Report: Log Reduction

Background of Test

The Microbiological Test for Log reduction tests for a product's ability to kill such pathogenic organisms as E.coli, Pseudomonas aeruginosa, and Staphylococcus aureus in drinking water.
Comparison is to Sterile Buffered Water (SBW).

Sample Description:

Sample:	Test Performed:	Method:	Lot:
Oreganal Oil	Log Reduction	USP 23/8	30142W 12/09 (GNC)

Escherichia coli ATCC 8739

Exposure Time	Concentration of Organism (CFU/ml)		% Reduction		Log Reduction	
	Control	Product	Control	Product	Control	Product
Initial	$1.7x\ 10^5$	1.7×10^5	---	---	---	---
01 Minute	1.7×10^5	1.5×10^5	0.0	11.8	0.0	0.13
05 Minute	1.7×10^5	1.4×10^5	0.0	17.6	0.0	0.15
15 Minute	1.7×10^5	1.4×10^5	0.0	17.6	0.0	0.15

Pseudomonas aeruginosa ATCC 9027

Exposure Time	Concentration of Organism (CFU/ml)		% Reduction		Log Reduction	
	Control	Product	Control	Product	Control	Product
Initial	3.5×10^5	3.5×10^5	---	---	---	---
01 Minute	3.5×10^5	3.3×10^5	0.0	5.7	0.0	0.11
05 Minute	3.5×10^5	3.2×10^4	0.0	8.6	0.0	0.12
15 Minute	3.5×10^5	3.2×10^4	0.0	8.6	0.0	0.12

Staphylococcus aureus ATCC 6538

Exposure Time	Concentration of Organism (CFU/ml)		% Reduction		Log Reduction	
	Control	Product	Control	Product	Control	Product
Initial	$2.4 \times\ 10^5$	2.4×10^5	---	---	---	---
01 Minute	2.4×10^5	2.1×10^4	0.0	12.5	0.0	0.13
05 Minute	2.4×10^5	2.0×10^4	0.0	16.7	0.0	0.16
15 Minute	2.4×10^5	1.8×10^3	0.0	25.0	0.0	0.18

Results: Reverse Osmosis Conductivity Test

Deionized Water	No Effect
Oreganal Oil	>150 drops activated the 50 cc reverse osmosis circuit.
Progressive Trace Mineral Solution	27 drops activated the circuit.
Real Willard Water	>150 drops activated circuit.

Modified from: An excerpt from a report by Dr. Richard Weber, O.M.D., PhD, N.M.D., H.M.D., Dipl. (NCAA) (ND) (HOM) – July 16, 1996.

This procedure is a good measure of the efficacy of a trace mineral and electrolyte or free proton source. The higher the number of drops required in our test, the weaker the product; the lower the number, the stronger the product. The Oreganal Oil product was stronger in conductivity than a standardized purchased mineral solution.

TEST 1

USP Challenge Test of Grapeseed Extract

Background of Test

The USP Challenge test is an accepted well-documented test showing the ability of a substance to retard the growth of tested pathogens, much like a preservative protects the contents of a bottle. Known microbial pathogens were exposed to 10% aqueous solution of Grapeseed Extract on microbial growth/support media. These results show that Grapeseed Extract partially destroyed all of the five pathogens tested.

Sample Description:

Sample:	Test Performed:	Method:
Grapeseed Extract	USP Challenge Test	USP 23

Results: **Table Summary**

Micro Organism	**Initial Inoculum/ml**	**Day 7**	**Day 14**	**Day 21**	**Day 28**
		Colony Forming Units/ml			
A. niger	1.9×10^5	1.6×10^4	1.3×10^3	1.9×10^3	0.9×10^2
B. albicans	2.2×10^5	2.1×10^5	2.0×10^4	2.0×10^5	2.0×10^5
E. coli	1.7×10^5	1.4×10^5	1.2×10^5	0.9×10^5	0.6×10^5
P. aeruginosa	3.5×10^5	3.1×10^5	2.5×10^5	2.2×10^5	1.6×10^5
S. aureus	2.4×10^5	1.7×10^5	1.1×10^5	9.0×10^4	7.3×10^4

Microbiology Analytical Report

Sample	Test Performed	Method
Grapeseed Extract	Zone of Inhibition	USP 23

Results:

Zone of Inhibition	Grapeseed Extract	Negative Control	Novobiotin
Staphylococcus aureus	8.2 mm	No Zone	27.8 mm

Interpretation:

The pathogen retarding capability of the product examined is effective if:

1. The concentration of viable bacteria is reduced to not more than 0.1% of the initial concentration by the 14^{th} day,
2. The concentration of viable yeasts and molds remains at or below the initial concentration during the first 14 days,
3. The concentration of each test microorganism remains at or below these designated levels during the remainder of the 28 day test period, and;
4. A clear zone of inhibition of a bacteria indicates properties similar to the antibiotic novobiotin and no bacteria growth.

TEST 2

GRAPESEED EXTRACT – A highly effective cleanser, detoxifier, and immune system protector.

Antimicrobial Effectiveness Test/Category 1C

Background of Test
The Preservative Effectiveness Test demonstrates the effectiveness of a substance, such as Grapeseed Extract, when used as a preservative or additive – to stop the growth of such pathogenic organisms as E.coli, Aspergillus niger, Candida albicans, Pseudomonas aeruginosa, and Staphylococcus aureus.

Sample Description:

Sample:	Test Performed:	Method:
Grapeseed Extract	Pres./Effect Test	USP 23, 8th Sup.

Sample Preparation:

The following organisms – *Aspergillus niger, Candida albicans, Escherichia coli, Pseudomonas aeruginosa, and Staphylococcus aureus* – are used to challenge the specimen for twenty-eight (28) days. Microorganism survival is monitored at fourteen (14) and twenty-eight (28) day intervals.

Results: **Table Summary**

Micro Organism	**Initial Inoculum/ml**	Colony Forming Units/ml 14 days	28 days	Log reduction from Initial 14 days	28 days
A. niger	1.9×10^5	1.3×10^3	9.0×10^1	0.1	0.1
B. albicans	2.2×10^5	2.0×10^5	2.0×10^5	0.9	0.9
E. coli	1.7×10^5	1.2×10^5	6.1×10^4	0.2	0.2
P. aeruginosa	3.5×10^5	2.5×10^5	1.6×10^5	0.5	1.7
S. aureus	2.4×10^5	1.1×10^5	7.3×10^4	1.7	1.9

Interpretation:

For Category 1C Products, the preservative is effective in the product examined if:

a.) Not less than or equal to 1.0 log reduction from the initial count at 14 days, and no increase* from the 14 day count at 25 days is observed in the bacterial samples.

b.) No increase* from the initial calculated count at 14 and 28 days is observed in the yeast and mold samples.

* No increase is defined as not more than 0.5 log unit higher than the previous value measured.

Conclusion:

The above test results meet the current USP criteria for the Antimicrobial Effectiveness Test.

TEST 3

Microbial Report: Log Reduction

Background of Test

The Microbiological Test for Log reduction tests for a product's ability to kill such pathogenic organisms as E.coli, Pseudomonas aeruginosa, and Staphylococcus aureus in drinking water.
Comparison is to Sterile Buffered Water (SBW).

Sample Description:

Sample:	Test Performed:	Method:	Lot:
Grapeseed Extract	Log Reduction	USP 23/8	GSE070715 (DNP)

Escherichia coli ATCC 8739

Exposure Time	Concentration of Organism (CFU/ml)		% Reduction		Log Reduction	
	Control	Product	Control	Product	Control	Product
Initial	2.7×10^5	2.7×10^5	---	---	---	---
01 Minute	2.7×10^5	2.4×10^5	0.0	11.1	0.0	0.1
05 Minute	2.6×10^5	2.3×10^5	0.0	14.8	0.0	0.2
15 Minute	2.7×10^5	2.3×10^5	0.0	14.5	0.0	0.2

Pseudomonas aeruginosa ATCC 9027

Exposure Time	Concentration of Organism (CFU/ml)		% Reduction		Log Reduction	
	Control	Product	Control	Product	Control	Product
Initial	2.2×10^5	2.1×10^5	---	---	---	---
01 Minute	2.2×10^5	2.0×10^5	0.0	9.1	0.0	0.1
05 Minute	2.2×10^5	1.8×10^5	0.0	18.2	0.0	0.3
15 Minute	2.2×10^5	1.7×10^5	0.0	22.7	0.0	0.4

Staphylococcus aureus ATCC 6538

Exposure Time	Concentration of Organism (CFU/ml)		% Reduction		Log Reduction	
	Control	Product	Control	Product	Control	Product
Initial	1.9×10^5	1.9×10^5	---	---	---	---
01 Minute	1.9×10^5	1.6×10^5	0.0	15.8	0.0	0.2
05 Minute	1.9×10^5	1.4×10^5	0.0	26.3	0.0	0.4
15 Minute	1.9×10^5	1.2×10^5	0.0	36.8	0.0	0.6

The superiority of Grapeseed Extract as a trace mineral/electrolyte supplement

Background of Test

The essentiality of trace minerals/electrolyte supplementation as from Grapeseed Extract is to reduce our neuro resistance and increase the speed (velocity) with which these nerve impulses tell our bodies what to do. The best was to accomplish this is to increase intake of trace minerals and electrolytes.

Here is the result of a recent electrical conductivity test comparing a group of mineral/electrolyte products: the goal was to activate a 50cc reverse osmosis water activated circuit

Note: All electrolyte solutions were diluted 1:10 before testing. Unreacted sulfuric acid or mineral acids are known to cause false positive results.

Results: Reverse Osmosis Conductivity Test

Deionized Water	No Effect
Grapeseed Extract (10%)	>150 drops activated the 50 cc reverse osmosis circuit.
Progressive Trace Mineral Solution	27 drops activated the circuit.
Real Willard Water	>150 drops activated circuit.

Modified from: An excerpt from a report by Dr. Richard Weber, O.M.D., PhD, N.M.D., H.M.D., Dipl. (NCAA) (ND) (HOM) – July 16, 1996.

This procedure is a good measure of the efficacy of a trace mineral and electrolyte or free proton source. The higher the number of drops required in our test, the weaker the product; the lower the number, the stronger the product. The grapeseed extract was non-conductive.

TEST 1

USP Challenge Test of Detox Body Cleanser (DBC)

Background of Test
The USP Challenge test is an accepted well-documented test showing the ability of a substance to retard the growth of tested pathogens, much like a preservative protects the contents of a bottle. Known microbial pathogens were exposed to 10% aqueous solution of Detox Body Cleanser (DBC) on microbial growth/support media. These results show that Detox Body Cleanser (DBC) partially destroyed all of the five pathogens tested.

Sample Description:

Sample:	Test Performed:	Method:
DBC	USP Challenge Test	USP 23

Results: **Table Summary**

Micro Organism	**Initial Inoculum/ml**	**Day 7**	**Day 14**	**Day 21**	**Day 28**
		Colony Forming Units/ml			
A. niger	1.9×10^5	8.4×10^4	1.2×10^4	1.1×10^4	9.2×10^3
B. albicans	2.2×10^5	1.4×10^5	9.4×10^4	5.8×10^4	1.3×10^4
E. coli	1.7×10^5	1.1×10^5	7.2×10^4	1.6×10^4	5.9×10^3
P. aeruginosa	3.5×10^5	2.0×10^5	9.8×10^4	6.1×10^4	2.8×10^4
S. aureus	2.4×10^5	1.1×10^5	6.9×10^4	2.1×10^4	9.0×10^3

Microbiology Analytical Report

Sample	Test Performed	Method
DBC	Zone of Inhibition	USP 23

Results:

Zone of Inhibition	DBC	Negative Control	Novobiotin
Staphylococcus aureus	19.2 mm	No Zone	27.8 mm

Interpretation:
The pathogen retarding capability of the product examined is effective if:

1. The concentration of viable bacteria is reduced to not more than 0.1% of the initial concentration by the 14^{th} day,
2. The concentration of viable yeasts and molds remains at or below the initial concentration during the first 14 days,
3. The concentration of each test microorganism remains at or below these designated levels during the remainder of the 28 day test period, and;
4. A clear zone of inhibition of a bacteria indicates properties similar to the antibiotic novobiotin and no bacteria growth.

TEST 2

DETOX BODY CLEANSER (DBC) – A highly effective cleanser, detoxifier, and immune system protector.

Antimicrobial Effectiveness Test/Category 1C

Background of Test
The Preservative Effectiveness Test demonstrates the effectiveness of a substance, such as Detox Body Cleanser (DBC), when used as a preservative or additive – to stop the growth of such pathogenic organisms as E.coli, Aspergillus niger, Candida albicans, Pseudomonas aeruginosa, and Staphylococcus aureus.

Sample Description:

Sample:	Test Performed:	Method:
DBC	Pres./Effect Test	USP 23, 8th Sup.

Sample Preparation:
The following organisms – *Aspergillus niger, Candida albicans, Escherichia coli, Pseudomonas aeruginosa, and Staphylococcus aureus* – are used to challenge the specimen for twenty-eight (28) days. Microorganism survival is monitored at fourteen (14) and twenty-eight (28) day intervals.

Results: **Table Summary**

Micro	**Initial**	Colony Forming Units/ml		Log reduction from Initial	
Organism	**Inoculum/ml**	14 days	28 days	14 days	28 days
A. niger	1.9×10^5	1.2×10^4	9.2×10^3	1.97	2.98
B. albicans	2.2×10^5	9.4×10^4	1.3×10^4	1.76	1.97
E. coli	1.7×10^5	7.2×10^4	5.9×10^3	1.76	2.98
P. aeruginosa	3.5×10^5	9.8×10^4	2.8×10^4	1.86	1.96
S. aureus	2.4×10^5	6.9×10^4	9.0×10^3	1.90	2.98

Interpretation:

For Category 1C Products, the preservative is effective in the product examined if:

a.) Not less than or equal to 1.0 log reduction from the initial count at 14 days, and no increase* from the 14 day count at 25 days is observed in the bacterial samples.

b.) No increase* from the initial calculated count at 14 and 28 days is observed in the yeast and mold samples.

* No increase is defined as not more than 0.5 log unit higher than the previous value measured.

Conclusion:

The above test results meet the current USP criteria for the Antimicrobial Effectiveness Test.

TEST 3

Microbial Report: Log Reduction

Background of Test
The Microbiological Test for Log reduction tests for a product's ability to kill such pathogenic organisms as E.coli, Pseudomonas aeruginosa, and Staphylococcus aureus in drinking water.
Comparison is to Sterile Buffered Water (SBW).

Sample Description:

Sample:	Test Performed:	Method:	Lot:
DBC	Log Reduction	USP 23/8	06/2008 (Nutra)

Escherichia coli ATCC 8739

Exposure Time	Concentration of Organism (CFU/ml)		% Reduction		Log Reduction	
	Control	Product	Control	Product	Control	Product
Initial	2.7×10^5	2.7×10^5	---	---	---	---
01 Minute	2.7×10^5	2.3×10^5	0.0	14.8	0.0	0.21
05 Minute	2.7×10^5	1.9×10^5	0.0	29.6	0.0	0.47
15 Minute	2.7×10^5	1.6×10^5	0.0	40.7	0.0	0.61

Pseudomonas aeruginosa ATCC 9027

Exposure Time	Concentration of Organism (CFU/ml)		% Reduction		Log Reduction	
	Control	Product	Control	Product	Control	Product
Initial	2.2×10^5	2.1×10^5	---	---	---	---
01 Minute	2.2×10^5	1.7×10^5	0.0	22.7	0.0	0.36
05 Minute	2.2×10^5	1.1×10^5	0.0	50.0	0.0	0.70
15 Minute	2.2×10^5	8.9×10^4	0.0	59.5	0.0	0.77

Staphylococcus aureus ATCC 6538

Exposure Time	Concentration of Organism (CFU/ml)		% Reduction		Log Reduction	
	Control	Product	Control	Product	Control	Product
Initial	1.9×10^5	1.9×10^5	---	---	---	---
01 Minute	1.9×10^5	1.2×10^5	0.0	36.8	0.0	0.57
05 Minute	1.9×10^5	9.2×10^4	0.0	51.8	0.0	0.71
15 Minute	1.9×10^5	7.4×10^4	0.0	61.1	0.0	0.79

The superiority of Detox Body Cleanser (DBC) as a trace mineral/electrolyte supplement

Background of Test

The essentiality of trace minerals/electrolyte supplementation as from Detox Body Cleanser (DBC) is to reduce our neuro resistance and increase the speed (velocity) with which these nerve impulses tell our bodies what to do. The best was to accomplish this is to increase intake of trace minerals and electrolytes.

Here is the result of a recent electrical conductivity test comparing a group of mineral/electrolyte products: the goal was to activate a 50cc reverse osmosis water activated circuit

Note: All electrolyte solutions were diluted 1:10 before testing. Unreacted sulfuric acid or mineral acids are known to cause false positive results.

Results: Reverse Osmosis Conductivity Test

Deionized Water	No Effect
Detox Body Cleanser (DBC)	120 drops activated the 50 cc reverse osmosis circuit.
Progressive Trace Mineral Solution	27 drops activated the circuit.
Real Willard Water	>150 drops activated circuit.

Modified from: An excerpt from a report by Dr. Richard Weber, O.M.D., PhD, N.M.D., H.M.D., Dipl. (NCAA) (ND) (HOM) – July 16, 1996.

This procedure is a good measure of the efficacy of a trace mineral and electrolyte or free proton source. The higher the number of drops required in our test, the weaker the product; the lower the number, the stronger the product.

TEST 1

USP Challenge Test of Tropicleanse

Background of Test

The USP Challenge test is an accepted well-documented test showing the ability of a substance to retard the growth of tested pathogens, much like a preservative protects the contents of a bottle. Known microbial pathogens were exposed to 10% aqueous solution of Tropicleanse on microbial growth/support media. These results show that Tropicleanse partially destroyed all of the five pathogens tested.

Sample Description:

Sample:	Test Performed:	Method:
Tropicleanse	USP Challenge Test	USP 23

Results: **Table Summary**

Micro Organism	**Initial Inoculum/ml**	**Day 7**	**Day 14**	**Day 21**	**Day 28**
		Colony Forming Units/ml			
A. niger	1.9×10^5	1.2×10^3	0.9×10^2	<10	<10
B. albicans	2.2×10^5	1.9×10^3	3.5×10^2	1.2×10^2	<10
E. coli	1.7×10^5	1.0×10^3	4.5×10^2	2.9×10^2	1.4×10^2
P. aeruginosa	3.5×10^5	2.8×10^4	1.6×10^4	7.3×10^3	2.6×10^3
S. aureus	2.4×10^5	1.8×10^4	8.2×10^3	7.1×10^3	5.2×10^3

Microbiology Analytical Report

Sample	Test Performed	Method
Tropicleanse	Zone of Inhibition	USP 23

Results:

Zone of Inhibition	Tropicleanse	Negative Control	Novobiotin
Staphylococcus aureus	19.7 mm	No Zone	27.8 mm

Interpretation:

The pathogen retarding capability of the product examined is effective if:

1. The concentration of viable bacteria is reduced to not more than 0.1% of the initial concentration by the 14^{th} day,
2. The concentration of viable yeasts and molds remains at or below the initial concentration during the first 14 days,
3. The concentration of each test microorganism remains at or below these designated levels during the remainder of the 28 day test period, and;
4. A clear zone of inhibition of a bacteria indicates properties similar to the antibiotic novobiotin and no bacteria growth.

TEST 2

TROPICLEANSE – A highly effective cleanser, detoxifier, and immune system protector.

Antimicrobial Effectiveness Test/Category 1C

Background of Test

The Preservative Effectiveness Test demonstrates the effectiveness of a substance, such as Tropicleanse, when used as a preservative or additive – to stop the growth of such pathogenic organisms as E.coli, Aspergillus niger, Candida albicans, Pseudomonas aeruginosa, and Staphylococcus aureus.

Sample Description:

Sample:	Test Performed:	Method:
Tropicleanse	Pres./Effect Test	USP 23, 8th Sup.

Sample Preparation:

The following organisms – *Aspergillus niger, Candida albicans, Escherichia coli, Pseudomonas aeruginosa, and Staphylococcus aureus* – are used to challenge the specimen for twenty-eight (28) days. Microorganism survival is monitored at fourteen (14) and twenty-eight (28) day intervals.

Results: **Table Summary**

Micro Organism	**Initial Inoculum/ml**	Colony Forming Units/ml 14 days	28 days	Log reduction from Initial 14 days	28 days
A. niger	1.9×10^5	0.9×10^2	<10	3.00	5.27
B. albicans	2.2×10^5	3.5×10^2	<10	3.99	3.50
E. coli	1.7×10^5	4.5×10^2	1.4×10^2	3.00	3.00
P. aeruginosa	3.5×10^5	1.6×10^4	2.6×10^3	1.98	2.00
S. aureus	2.4×10^5	8.2×10^3	5.2×10^3	2.98	2.99

Interpretation:

For Category 1C Products, the preservative is effective in the product examined if:

a.) Not less than or equal to 1.0 log reduction from the initial count at 14 days, and no increase* from the 14 day count at 25 days is observed in the bacterial samples.

b.) No increase* from the initial calculated count at 14 and 28 days is observed in the yeast and mold samples.

* No increase is defined as not more than 0.5 log unit higher than the previous value measured.

Conclusion:

The above test results meet the current USP criteria for the Antimicrobial Effectiveness Test.

TEST 3

Microbial Report: Log Reduction

Background of Test

The Microbiological Test for Log reduction tests for a product's ability to kill such pathogenic organisms as E.coli, Pseudomonas aeruginosa, and Staphylococcus aureus in drinking water.
Comparison is to Sterile Buffered Water (SBW).

Sample Description:

Sample:	Test Performed:	Method:	Lot:
Tropicleanse	Log Reduction	USP 23/8	09/2007 (Nutra)

Escherichia coli ATCC 8739

Exposure Time	Concentration of Organism (CFU/ml)		% Reduction		Log Reduction	
	Control	Product	Control	Product	Control	Product
Initial	2.7×10^5	2.7×10^5	---	---	---	---
01 Minute	2.7×10^5	1.4×10^5	0.0	48.1	0.0	0.60
05 Minute	2.7×10^5	1.1×10^5	0.0	59.3	0.0	0.77
15 Minute	2.7×10^5	8.9×10^4	0.0	67.0	0.0	0.83

Pseudomonas aeruginosa ATCC 9027

Exposure Time	Concentration of Organism (CFU/ml)		% Reduction		Log Reduction	
	Control	Product	Control	Product	Control	Product
Initial	2.2×10^5	2.1×10^5	---	---	---	---
01 Minute	2.2×10^5	1.7×10^5	0.0	22.7	0.0	0.36
05 Minute	2.2×10^5	1.2×10^5	0.0	45.5	0.0	0.66
15 Minute	2.2×10^5	9.2×10^4	0.0	58.2	0.0	0.77

Staphylococcus aureus ATCC 6538

Exposure Time	Concentration of Organism (CFU/ml)		% Reduction		Log Reduction	
	Control	Product	Control	Product	Control	Product
Initial	1.9×10^5	1.9×10^5	---	---	---	---
01 Minute	1.9×10^5	1.4×10^5	0.0	26.3	0.0	0.42
05 Minute	1.9×10^5	1.0×10^5	0.0	47.4	0.0	0.68
15 Minute	1.9×10^5	8.9×10^4	0.0	53.2	0.0	0.73

The superiority of Tropicleanse as a trace mineral/electrolyte supplement

Background of Test

The essentiality of trace minerals/electrolyte supplementation as from Tropicleanse is to reduce our neuro resistance and increase the speed (velocity) with which these nerve impulses tell our bodies what to do. The best was to accomplish this is to increase intake of trace minerals and electrolytes.

Here is the result of a recent electrical conductivity test comparing a group of mineral/electrolyte products: the goal was to activate a 50cc reverse osmosis water activated circuit

Note: All electrolyte solutions were diluted 1:10 before testing. Unreacted sulfuric acid or mineral acids are known to cause false positive results.

Results: Reverse Osmosis Conductivity Test

Deionized Water	No Effect
Tropicleanse	137 drops activated the 50 cc reverse osmosis circuit.
Progressive Trace Mineral Solution	27 drops activated the circuit.
Real Willard Water	>150 drops activated circuit.

Modified from: An excerpt from a report by Dr. Richard Weber, O.M.D., PhD, N.M.D., H.M.D., Dipl. (NCAA) (ND) (HOM) – July 16, 1996.

This procedure is a good measure of the efficacy of a trace mineral and electrolyte or free proton source. The higher the number of drops required in our test, the weaker the product; the lower the number, the stronger the product. The Tropicleanse product was weaker in conductivity than the Trace Mineral Solution.

TEST 1

USP Challenge Test of Organic Plant Acids (Nutra)

Background of Test

The USP Challenge test is an accepted well-documented test showing the ability of a substance to retard the growth of tested pathogens, much like a preservative protects the contents of a bottle. Known microbial pathogens were exposed to 10% aqueous solution of OPA (Nutra) on microbial growth/support media. These results show that OPA (Nutra) partially destroyed all of the five pathogens tested.

Sample Description:

Sample:	Test Performed:	Method:
OPA (Nutra)	USP Challenge Test	USP 23

Results: **Table Summary**

Micro Organism	**Initial Inoculum/ml**	**Day 7**	**Day 14**	**Day 21**	**Day 28**
		Colony Forming Units/ml			
A. niger	1.9×10^5	<10	<10	<10	<10
B. albicans	2.2×10^5	<10	<10	<10	<10
E. coli	1.7×10^5	<10	<10	<10	<10
P. aeruginosa	3.5×10^5	1.8×10^2	<10	<10	<10
S. aureus	2.4×10^5	4.1×10^3	1.5×10^2	10	<10

Microbiology Analytical Report

Sample	Test Performed	Method
OPA (Nutra)	Zone of Inhibition	USP 23

Results:

Zone of Inhibition	OPA (Nutra)	Negative Control	Novobiotin
Staphylococcus aureus	26.8 mm	No Zone	27.8 mm

Interpretation:

The pathogen retarding capability of the product examined is effective if:

1. The concentration of viable bacteria is reduced to not more than 0.1% of the initial concentration by the 14^{th} day,
2. The concentration of viable yeasts and molds remains at or below the initial concentration during the first 14 days,
3. The concentration of each test microorganism remains at or below these designated levels during the remainder of the 28 day test period, and;
4. A clear zone of inhibition of a bacteria indicates properties similar to the antibiotic novobiotin and no bacteria growth.

TEST 2

OPA (NUTRA) – A highly effective cleanser, detoxifier, and immune system protector.

Antimicrobial Effectiveness Test/Category 1C

Background of Test

The Preservative Effectiveness Test demonstrates the effectiveness of a substance, such as OPA (Nutra), when used as a preservative or additive – to stop the growth of such pathogenic organisms as E.coli, Aspergillus niger, Candida albicans, Pseudomonas aeruginosa, and Staphylococcus aureus.

Sample Description:

Sample:	Test Performed:	Method:
OPA (Nutra)	Pres./Effect Test	USP 23, 8th Sup.

Sample Preparation:

The following organisms – *Aspergillus niger, Candida albicans, Escherichia coli, Pseudomonas aeruginosa, and Staphylococcus aureus* – are used to challenge the specimen for twenty-eight (28) days. Microorganism survival is monitored at fourteen (14) and twenty-eight (28) day intervals.

Results: **Table Summary**

Micro	**Initial**	Colony Forming Units/ml		Log reduction from Initial	
Organism	**Inoculum/ml**	14 days	28 days	14 days	28 days
A. niger	1.9×10^5	<10	<10	2.8	2.8
B. albicans	2.2×10^5	<10	<10	3.5	3.5
E. coli	1.7×10^5	<10	<10	2.3	2.3
P. aeruginosa	3.5×10^5	<10	<10	3.8	5.8
S. aureus	2.4×10^5	1.5 X 102	<10	3.01	3.8

Interpretation:

For Category 1C Products, the preservative is effective in the product examined if:

a.) Not less than or equal to 1.0 log reduction from the initial count at 14 days, and no increase* from the 14 day count at 25 days is observed in the bacterial samples.

b.) No increase* from the initial calculated count at 14 and 28 days is observed in the yeast and mold samples.

* No increase is defined as not more than 0.5 log unit higher than the previous value measured.

Conclusion:

The above test results meet the current USP criteria for the Antimicrobial Effectiveness Test.

TEST 3

Microbial Report: Log Reduction

Background of Test
The Microbiological Test for Log reduction tests for a product's ability to kill such pathogenic organisms as E.coli, Pseudomonas aeruginosa, and Staphylococcus aureus in drinking water.
Comparison is to Sterile Buffered Water (SBW).

Sample Description:

Sample:	Test Performed:	Method:	Lot:
OPA (Nutra)	Log Reduction	USP 23/8	09/2007 (Nutra)

Escherichia coli ATCC 8739

Exposure Time	Concentration of Organism (CFU/ml)		% Reduction		Log Reduction	
	Control	Product	Control	Product	Control	Product
Initial	$2.7x\ 10^5$	2.7×10^5	---	---	---	---
01 Minute	2.7×10^5	2.3×10^5	0.0	14.8	0.0	0.17
05 Minute	2.7×10^5	$1.9x\ 10^5$	0.0	22.2	0.0	0.35
15 Minute	2.7×10^5	1.6×10^5	0.0	40.7	0.0	0.61

Pseudomonas aeruginosa ATCC 9027

Exposure Time	Concentration of Organism (CFU/ml)		% Reduction		Log Reduction	
	Control	Product	Control	Product	Control	Product
Initial	2.2×10^5	2.1×10^5	---	---	---	---
01 Minute	2.2×10^5	1.3×10^5	0.0	40.9	0.0	0.61
05 Minute	2.2×10^5	9.4×10^4	0.0	57.3	0.0	0.76
15 Minute	2.2×10^5	4.7×10^4	0.0	78.6	0.0	0.90

Staphylococcus aureus ATCC 6538

Exposure Time	Concentration of Organism (CFU/ml)		% Reduction		Log Reduction	
	Control	Product	Control	Product	Control	Product
Initial	$1.9 \times\ 10^5$	1.9×10^5	---	---	---	---
01 Minute	1.9×10^5	1.1×10^5	0.0	42.1	0.0	0.62
05 Minute	1.9×10^5	8.1×10^4	0.0	57.4	0.0	0.76
15 Minute	1.9×10^5	2.3×10^4	0.0	87.9	0.0	0.94

The superiority of OPA (Nutra) as a trace mineral/electrolyte supplement

Background of Test

The essentiality of trace minerals/electrolyte supplementation as from OPA (Nutra) is to reduce our neuro resistance and increase the speed (velocity) with which these nerve impulses tell our bodies what to do. The best was to accomplish this is to increase intake of trace minerals and electrolytes.

Here is the result of a recent electrical conductivity test comparing a group of mineral/electrolyte products: the goal was to activate a 50cc reverse osmosis water activated circuit

Note: All electrolyte solutions were diluted 1:10 before testing. Unreacted sulfuric acid or mineral acids are known to cause false positive results.

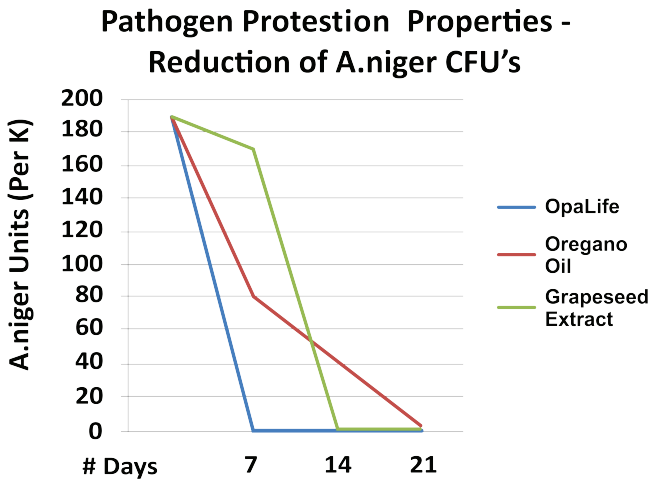
Results: Reverse Osmosis Conductivity Test

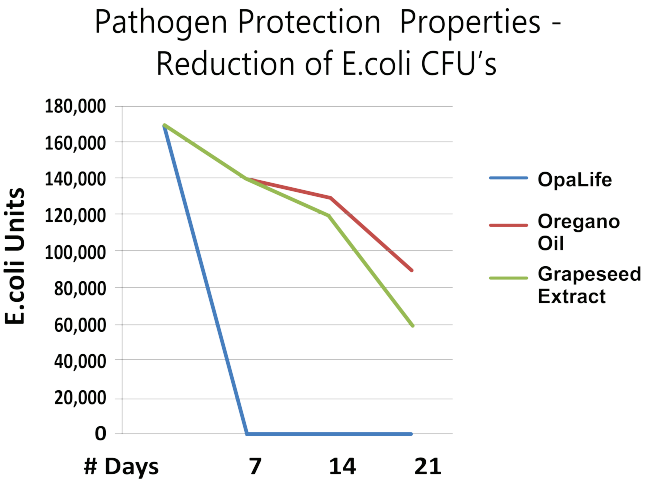
Deionized Water	No Effect
OPA (Nutra)	82 drops activated the 50 cc reverse osmosis circuit.
Progressive Trace Mineral Solution	27 drops activated the circuit.
Real Willard Water	>150 drops activated circuit.

Modified from: An excerpt from a report by Dr. Richard Weber, O.M.D., PhD, N.M.D., H.M.D., Dipl. (NCAA) (ND) (HOM) – July 16, 1996.

This procedure is a good measure of the efficacy of a trace mineral and electrolyte or free proton source. The higher the number of drops required in our test, the weaker the product; the lower the number, the stronger the product.

TEST RESULTS





NUTRA OPA Test Results

November 2008

Bacteria/ Fungi	Nutra OPA	O regano	Grapeseed Extract
A.niger			
1.9 x 10^5			
CFU 7 days	<10	8.1 x 10^4	1.7 x 10^5
CFU 14 days	<10	4.3 x 10^4	1.3 x 10^3
CFU 21 days	<10	3.1 x 10^3	0.9 x 10^2
B. albicans			
2.2 x 10^5			
CFU 7 days	<10	1.1 x 10^5	2.1 x 10^5
CFU 14 days	<10	9.2 x 10^4	2.0 x 10^4
CFU 21 days	<10	2.6 x 10^4	2.0 x 10^5
E. coli			
1.7 x 10^5			
CFU 7 days	<10	1.4 x 10^5	1.4 x 10^5
CFU 14 days	<10	1.3 x 10^5	1.2 x 10^5
CFU 21 days	<10	0.9 x 10^5	0.6 x 10^5
P. aeruginosa			
3.5 x 10^5			
CFU 7 days	<10	3.2 x 10^5	3.1 x 10^5
CFU 14 days	<10	2.3 x 10^5	2.5 x 10^5
CFU 21 days	<10	1.7 x 10^5	1.6 x 10^5
S. aureus			
2.4 x 10^5			
CFU 7 days	<10	1.5 x 10^5	107 x 10^5
CFU 14 days	<10	1.1 x 10^5	1.1 x 10^5
CFU 21 days	<10	0.5 x 10^5	7.3 x 10^4

Nutra OPA Test Results

These results show that Nutra OPA is the only tested product that destroyed all of the five pathogens. All pathogens were destroyed within 7 days and did not return during the entire 28 day testing period.

NOTE: The conductivity test (see bottom of page) demonstrated that Nutra OPA reduces our neuro resistance and increases the speed (velocity) with which our nerve impulses tell us what to do. In other words the indication is that Nutra OPA may increase the efficiency of our nervous system.

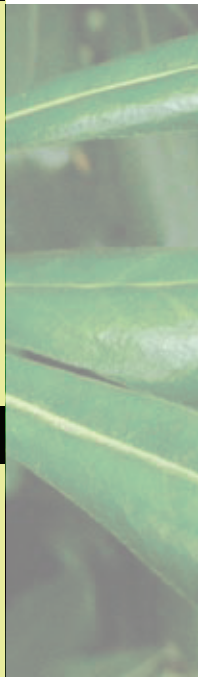
USP Challenge Test

The USP Challenge test is an accepted well documented test showing the ability of a substance to retard the growth of tested pathogens, much like a preservative protects the contents of a bottle. Known microbial pathogens were exposed to Nutra OPA on microbial growth/support media.

NOTE: Nutra OPA is currently being used for; Internal Detox Products Organic Skin Care Organic Beverages Travel Protection

Reverse Osmosis Conductivity Test

This procedure is a good measure of the efficacy of a trace mineral and electrolyte or free proton source. The higher the number of drops required in the test, the weaker the product; the lower the number, the stronger the product. The Nutra OPA product was much stronger in conductivity than a standardized mineral solution.



Reverse Osmosis Conductivity Test

Drops require to increase conductivity

Nutra OPA	13 drops
Trace MineralS	27 drops
Willard Water	>150 drops