Supporting Documents

BioScience Laboratories Study #1611494-201 SUMMARY

BIOSCIENCE LABORATORIES, INC.

AN IN-VITRO EVALUATION OF ONE TEST PRODUCT AND ONE REFERNCE PRODUCT FOR ITS ANTIMICROBIAL PROPERTIES USING THE TIME-KILL METHOD

An In-Vitro Time-Kill evaluation of one test product and one reference product was performed versus suspensions of 16 microorganisms. The percent and $\log_{10}$ reduction in the microbial population of each challenge strain was determined following exposure to each test material for 60 seconds, 10 minutes, 20 minutes, and 30 minutes. Testing was performed in triplicate. All agar-plating was performed in duplicate. For the results listed below, the average of the three replicates will be reported. The Study Protocol was amended once in order to add a 24 hour exposure time for the following 5 challenge microorganisms: *Candida albicans* (ATCC #10231), *Enterobacter aerogenes* (ATCC #13048), *Fusarium solani* (ATCC #36031), *Klebsiella pneumoniae* DR (ATCC #BAA-1705), and *Staphylococcus aureus* MRSA (ATCC #33592). This additional data has the Protocol #1611494-201.01. The Protocol Amendment is included in Addendum 1 and summarized in Section 12.0 of this Final Report.

The Test Product, Broad Spectrum Hygiene Management (Lot #16180-1), reduced the population of *Escherichia coli* (ATCC #11229) by an average of less than 2.8 $\log_{10}$ following the 1 minute, 10 minute, and 20 minute time points, and by greater than 3.4 $\log_{10}$ following the 30 minute time point. The Test Product reduced the population of *Staphylococcus haemolyticus* (ATCC #29970) by an average of less than 2.5 $\log_{10}$ following the 1 minute and 10 minute time points, and by greater than 3.1 $\log_{10}$ following the 20 minute and 30 minute time points. The Test Product reduced the population of *Enterococcus faecalis* VRE (ATCC #51575) and *Pseudomonas aeruginosa* MDR (Clinical Isolate BSLI #030116Pa5) by an average of less than 1.6 $\log_{10}$ following the 1 minute time point, and by greater than 3.2 $\log_{10}$ following the 10 minute, 20 minute, and 30 minute time points.

The Test Product, Broad Spectrum Hygiene Management (Lot #16180-1), reduced the population of *Candida albicans* (ATCC #10231) and *Klebsiella pneumoniae* DR (ATCC #BAA-1705) by an average of less than 0.39 $\log_{10}$ following the 1 minute, 10 minute, 20 minute, and 30 minute time points, and by greater than 6.1 $\log_{10}$ following the 24 hour time point. The Test Product reduced the population of *Enterobacter aerogenes* (ATCC #13048) and *Fusarium solani* (ATCC #36031) by an average of less than or equal to 1.5 $\log_{10}$ following the 1 minute, 10 minute, 20 minute, and 30 minute time points, and by greater than 5.0 $\log_{10}$ following the 24 hour time point. The Test

Product reduced the population of *Staphylococcus aureus* MRSA (ATCC #33592) by an average of less than 2.7 $\log_{10}$ following the 1 minute, 10 minute, 20 minute, and 30 minute time points, and by greater than 6.3 $\log_{10}$ following the 24 hour time point.

The Test Product, Broad Spectrum Hygiene Management (Lot #16180-1), reduced the populations of 7 challenge microorganisms - *Acinetobacter baumannii* MDR (ATCC #BAA-1605), *Haemophilus influenzae* (ATCC #19418), *Pseudomonas aeruginosa* (ATCC #15442), *Staphylococcus epidermidis* (ATCC #12228), *Staphylococcus hominis* (ATCC #700236), *Streptococcus pneumoniae* (ATCC #49619), and *Streptococcus pyogenes* (ATCC #19615) - by an average of greater than 3.4 $\log_{10}$ following the 1 minute time point and maintained or increased these reductions through all the remaining appropriate time points.
The Reference Product, Dyna-Hex 2® (2% Chlorhexidine Gluconate; diluted 1:10 in warm, sterile tap water [Lot #1021-912]), reduced the populations of all 16 challenge microorganisms - *Acinetobacter baumannii* MDR (ATCC #BAA-1605), *Candida albicans* (ATCC #10231), *Enterobacter aerogenes* (ATCC #13048), *Enterococcus faecalis* VRE (ATCC #51575), *Escherichia coli* (ATCC #11229), *Fusarium solani* (ATCC #36031), *Haemophilus influenzae* (ATCC #19418), *Klebsiella pneumoniae* DR (ATCC #BAA-1705), *Pseudomonas aeruginosa* (ATCC #15442), *Pseudomonas aeruginosa* MDR (Clinical Isolate - BSLI #030116Pa5), *Staphylococcus aureus* MRSA (ATCC #33592), *Staphylococcus epidermidis* (ATCC #12228), *Staphylococcus haemolyticus* (ATCC #29970), *Staphylococcus hominis* (ATCC #700236), *Streptococcus pneumoniae* (ATCC #49619), and *Streptococcus pyogenes* (ATCC #19615) - by an average of greater than 4.4 $\log_{10}$ following the 1 minute time point and maintained or increased these reductions through all the remaining appropriate time points.

NEUTRALIZATION STUDY – RESULTS (TABLE 1):

Neutralization studies of each test material were performed versus *Escherichia coli* (ATCC #11229), *Staphylococcus aureus* MRSA (ATCC #33592), and *Streptococcus pneumoniae* (ATCC #49619) to ensure that the neutralizing solution employed (Butterfield's Phosphate Buffer solution with product neutralizers [BBP++]) was effective in neutralizing the antimicrobial properties of each test material and was non-toxic to these challenge strains. These neutralization procedures were based on guidelines set forth in ASTM E1054-08(2013), *Standard Test Methods for Evaluation of Inactivators of Antimicrobial Agents*. All results from the Neutralization Validation Studies are presented in Table 1. When challenged with *Escherichia coli* (ATCC #11229), *Staphylococcus aureus* MRSA (ATCC #33592), and *Streptococcus pneumoniae* (ATCC #49619), BBP++ was demonstrated to be non-toxic to these challenge species and to effectively neutralize the antimicrobial properties of each test material.

TABLE 1

Neutralization Verification – Results

Organism	Neutralization Phase	Replicate	Post-Exposure Population (Log_{10})	Log_{10} Average Post-Exposure	Results of Neutralization❶
Escherichia coli (ATCC #11229)	Initial Population (Test C)	1	2.5855	2.5123	N/A
		2	2.4330		
		3	2.5185		
	Neutralizer Efficacy (Test A) Test Product Broad Spectrum Hygiene Management (Lot #16180-1)	1	2.4510	2.4157	Neutralizer Efficacious❶
		2	2.4241		
		3	2.3720		
	Neutralizer Efficacy (Test A) Reference Product Dyna-Hex 2® (Lot #1021-912) Diluted 1:10 in warm, sterile tap water	1	2.5966	2.4973	Neutralizer Efficacious❶
		2	2.5051		
		3	2.3901		
	Neutralizer Toxicity (Test B) Butterfield's Phosphate Buffer solution with product neutralizers (BBP++)	1	2.4502	2.4549	Neutralizer Non-Toxic❶
		2	2.4706		
		3	2.4440		

❶ = The 95% Confidence Interval for this population overlapped that of the Initial Population and/or the mean log_{10} population was not more than 0.2 log_{10} lower than the initial population.

TABLE 1 (continued)

Neutralization Verification – Results

Organism	Neutralization Phase	Replicate	Post-Exposure Population (Log_{10})	Log_{10} Average Post-Exposure	Results of Neutralization❶
Staphylococcus aureus MRSA (ATCC #33592)	Initial Population (Test C)	1	2.9566	2.9853	N/A
		2	2.9845		
		3	3.0149		
	Neutralizer Efficacy (Test A) Test Product Broad Spectrum Hygiene Management (Lot #16180-1)	1	2.9661	2.9692	Neutralizer Efficacious❶
		2	2.9800		
		3	2.9614		
	Neutralizer Efficacy (Test A) Reference Product Dyna-Hex 2® (Lot #1021-912) Diluted 1:10 in warm, sterile tap water	1	2.9590	2.9658	Neutralizer Efficacious❶
		2	2.9890		
		3	2.9494		
	Neutralizer Toxicity (Test B) Butterfield's Phosphate Buffer solution with product neutralizers (BBP++)	1	3.0128	3.0471	Neutralizer Non-Toxic❶
		2	3.0512		
		3	3.0774		

❶ = The 95% Confidence Interval for this population overlapped that of the Initial Population and/or the mean log_{10} population was not more than 0.2 log_{10} lower than the initial population.

MRSA = Methicillin-Resistant *Staphylococcus*

TABLE 1 (continued)

Neutralization Verification – Results

Organism	Neutralization Phase	Replicate	Post-Exposure Population (Log_{10})	Log_{10} Average Post-Exposure	Results of Neutralization❶
Streptococcus pneumoniae (ATCC #49619)	Initial Population (Test C)	1	3.0273	3.0298	N/A
		2	3.0149		
		3	3.0473		
	Neutralizer Efficacy (Test A) Test Product Broad Spectrum Hygiene Management (Lot #16180-1)	1	2.9345	2.9341	Neutralizer Efficacious❶
		2	2.8722		
		3	2.9956		
	Neutralizer Efficacy (Test A) Reference Product Dyna-Hex 2® (Lot #1021-912) Diluted 1:10 in warm, sterile tap water	1	2.9518	2.9493	Neutralizer Efficacious❶
		2	2.9542		
		3	2.9420		
	Neutralizer Toxicity (Test B) Butterfield's Phosphate Buffer solution with product neutralizers (BBP++)	1	2.9518	2.9548	Neutralizer Non-Toxic❶
		2	2.9191		
		3	2.9934		

❶ = The 95% Confidence Interval for this population overlapped that of the Initial Population and/or the mean log_{10} population was not more than 0.2 log_{10} lower than the initial population.

1.0 <u>IN-VITRO TIME-KILL EVALUATION – RESULTS (TABLES 2 AND 3)</u>:

Table 2 presents the Numbers Control Population (CFU/mL and log_{10}) of each of the 16 challenge microorganisms and the Post-Exposure Populations (CFU/mL and log_{10}), at each appropriate exposure time, and the log_{10} reductions produced by the Test Product, Broad Spectrum Hygiene Management (Lot #16180-1), when tested in three replicates.

Table 3 presents the Numbers Control Population (CFU/mL and log_{10}) of each of the 16 challenge microorganisms and the Post-Exposure Populations (CFU/mL and log_{10}), at each appropriate exposure time, and the log_{10} reductions produced by the Reference Product, Dyna-Hex 2® (Lot #1021-912), when tested in three replicates.

TABLE 2

Test Product: Broad Spectrum Hygiene Management

Lot Number 16180-1

Microorganism Species (ATCC #)	Exposure Time	Numbers Control		Replicate	Post-Exposure Population		Log_{10} Reduction	Average Log_{10} Reduction
		CFU/mL	Log_{10}		CFU/mL	Log_{10}		
Acinetobacter baumannii MDR (ATCC #BAA-1605)	1 minute	2.90×10^7	7.4624	1	$< 1.00 \times 10^1$	< 1.0000	> 6.4624	> 6.4624
				2	$< 1.00 \times 10^1$	< 1.0000	> 6.4624	
				3	$< 1.00 \times 10^1$	< 1.0000	> 6.4624	
	10 minutes	3.20×10^7	7.5051	1	$< 1.00 \times 10^1$	< 1.0000	> 6.5051	> 6.5051
				2	$< 1.00 \times 10^1$	< 1.0000	> 6.5051	
				3	$< 1.00 \times 10^1$	< 1.0000	> 6.5051	
	20 minutes	3.130×10^7	7.4955	1	$< 1.00 \times 10^1$	< 1.0000	> 6.4955	> 6.4955
				2	$< 1.00 \times 10^1$	< 1.0000	> 6.4955	
				3	$< 1.00 \times 10^1$	< 1.0000	> 6.4955	
	30 minutes	2.1750×10^7	7.3375	1	$< 1.00 \times 10^1$	< 1.0000	> 6.3375	> 6.3375
				2	$< 1.00 \times 10^1$	< 1.0000	> 6.3375	
				3	$< 1.00 \times 10^1$	< 1.0000	> 6.3375	
Candida albicans (ATCC #10231)	1 minute	9.80×10^6	6.9912	1	1.1250×10^7	7.0512	0.0000	0.0053
				2	1.0250×10^7	7.0107	0.0000	
				3	9.450×10^6	6.9754	0.0158	
	10 minutes	8.10×10^6	6.9085	1	8.30×10^6	6.9191	0.0000	0.0275
				2	8.150×10^6	6.9112	0.0000	
				3	6.70×10^6	6.8261	0.0824	

	20 minutes	1.0150×10^7	7.0065	1	4.250×10^6	6.6284	0.3781	0.2868
				2	5.750×10^6	6.7597	0.2468	
				3	5.90×10^6	6.7709	0.2356	
	30 minutes	9.350×10^6	6.9708	1	2.9950×10^6	6.4764	0.4944	0.3876
				2	4.750×10^6	6.6767	0.2941	
				3	3.950×10^6	6.5966	0.3742	
	24 hours	1.5050×10^7	7.1775	1	$< 1.00 \times 10^1$	< 1.0000	> 6.1775	> 6.1775
				2	$< 1.00 \times 10^1$	< 1.0000	> 6.1775	
				3	$< 1.00 \times 10^1$	< 1.0000	> 6.1775	

MDR = Multi-Drug Resistant

TABLE 2 (continued)

Test Product: Broad Spectrum Hygiene Management

Lot Number 16180-1

Microorganism Species (ATCC #)	Exposure Time	Numbers Control		Replicate	Post-Exposure Population		Log_{10} Reduction	Average Log_{10} Reduction
		CFU/mL	Log_{10}		CFU/mL	Log_{10}		
Enterobacter aerogenes (ATCC #13048)	1 minute	5.150×10^7	7.7118	1	2.70×10^7	7.4314	0.2804	0.3070
				2	2.7650×10^7	7.4417	0.2701	
				3	2.1950×10^7	7.3414	0.3704	
	10 minutes	1.7150×10^7	7.2343	1	8.70×10^6	6.9395	0.2948	0.3341
				2	7.850×10^6	6.8949	0.3394	
				3	7.350×10^6	6.8663	0.3680	
	20 minutes	3.650×10^7	7.5623	1	2.9850×10^6	6.4749	1.0874	1.1237
				2	2.740×10^6	6.4378	1.1245	
				3	2.530×10^6	6.4031	1.1592	
	30 minutes	3.40×10^7	7.5315	1	1.130×10^6	6.0531	1.4784	1.5074
				2	9.050×10^5	5.9566	1.5749	
				3	1.1550×10^6	6.0626	1.4689	
	24 hours	1.780×10^7	7.2504	1	$< 1.00 \times 10^1$	< 1.0000	> 6.2504	> 6.2504
				2	$< 1.00 \times 10^1$	< 1.0000	> 6.2504	
				3	$< 1.00 \times 10^1$	< 1.0000	> 6.2504	
Enterococcus faecalis VRE (ATCC #51575)	1 minute	1.410×10^8	8.1492	1	$> 3.00 \times 10^7$	> 7.4771	< 0.6721	< 0.6721
				2	$> 3.00 \times 10^7$	> 7.4771	< 0.6721	
				3	$> 3.00 \times 10^7$	> 7.4771	< 0.6721	

	10 minutes	9.650×10^7	7.9845	1	6.40×10^4	4.8062	3.1783	3.2239
				2	4.90×10^4	4.6902	3.2943	
				3	6.10×10^4	4.7853	3.1992	
	20 minutes	9.150×10^7	7.9614	1	4.50×10^1	1.6532	6.3082	6.0807
				2	6.50×10^1	1.8129	6.1485	
				3	1.50×10^2	2.1761	5.7853	
	30 minutes	9.650×10^7	7.9845	1	$< 1.00 \times 10^1$	< 1.0000	> 6.9845	> 6.9845
				2	$< 1.00 \times 10^1$	< 1.0000	> 6.9845	
				3	1.00×10^1	1.0000	6.9845	

VRE = Vancomycin-Resistant *Enterococcus*

TABLE 2 (continued)

Test Product: Broad Spectrum Hygiene Management

Lot Number 16180-1

Microorganism Species (ATCC #)	Exposure Time	Numbers Control		Replicate	Post-Exposure Population		Log_{10} Reduction	Average Log_{10} Reduction
		CFU/mL	Log_{10}		CFU/mL	Log_{10}		
Escherichia coli (ATCC #11229)	1 minute	2.3850×10^7	7.3775	1	1.080×10^7	7.0334	0.3441	0.3077
				2	1.1450×10^7	7.0588	0.3187	
				3	1.310×10^7	7.1173	0.2602	
	10 minutes	1.9550×10^7	7.2911	1	6.20×10^5	5.7924	1.4987	1.4661
				2	7.350×10^5	5.8663	1.4248	
				3	6.550×10^5	5.8162	1.4749	
	20 minutes	1.8150×10^7	7.2589	1	2.950×10^4	4.4698	2.7891	2.7282
				2	4.650×10^4	4.6675	2.5914	
				3	2.850×10^4	4.4548	2.8041	
	30 minutes	2.2150×10^7	7.3454	1	7.80×10^3	3.8921	3.4533	3.4156
				2	9.40×10^3	3.9731	3.3723	
				3	8.40×10^3	3.9243	3.4211	
Fusarium solani (ATCC #36031)	1 minute	4.350×10^5	5.6385	1	1.1350×10^5	5.0550	0.5835	0.5228
				2	1.380×10^5	5.1399	0.4986	
				3	1.420×10^5	5.1523	0.4862	
	10 minutes	4.30×10^5	5.6335	1	5.30×10^4	4.7243	0.9092	0.9231
				2	4.40×10^4	4.6435	0.9900	
				3	5.80×10^4	4.7634	0.8701	

	20 minutes	4.450×10^5	5.6484	1	2.950×10^4	4.4698	1.1786	1.1192
				2	3.050×10^4	4.4843	1.1641	
				3	4.30×10^4	4.6335	1.0149	
	30 minutes	3.250×10^5	5.5119	1	2.40×10^4	4.3802	1.1317	1.3025
				2	1.7350×10^4	4.2393	1.2726	
				3	1.020×10^4	4.0086	1.5033	
	24 hours	1.110×10^6	6.0453	1	$< 1.00 \times 10^1$	< 1.0000	> 5.0453	> 5.0453
				2	$< 1.00 \times 10^1$	< 1.0000	> 5.0453	
				3	$< 1.00 \times 10^1$	< 1.0000	> 5.0453	

TABLE 2 (continued)

Test Product: Broad Spectrum Hygiene Management

Lot Number 16180-1

Microorganism Species (ATCC #)	Exposure Time	Numbers Control		Replicate	Post-Exposure Population		Log_{10} Reduction	Average Log_{10} Reduction
		CFU/mL	Log_{10}		CFU/mL	Log_{10}		
Haemophilus influenzae (ATCC #19418)	1 minute	4.10×10^7	7.6128	1	$< 1.00 \times 10^1$	< 1.0000	> 6.6128	> 5.8443
				2	$< 1.00 \times 10^1$	< 1.0000	> 6.6128	
				3	2.020×10^3	3.3054	4.3074	
	10 minutes	3.250×10^7	7.5119	1	$< 1.00 \times 10^1$	< 1.0000	> 6.5119	> 6.5119
				2	$< 1.00 \times 10^1$	< 1.0000	> 6.5119	
				3	$< 1.00 \times 10^1$	< 1.0000	> 6.5119	
	20 minutes	4.450×10^7	7.6484	1	$< 1.00 \times 10^1$	< 1.0000	> 6.6484	> 6.6484
				2	$< 1.00 \times 10^1$	< 1.0000	> 6.6484	
				3	$< 1.00 \times 10^1$	< 1.0000	> 6.6484	
	30 minutes	3.750×10^7	7.5740	1	$< 1.00 \times 10^1$	< 1.0000	> 6.5740	> 6.5740
				2	$< 1.00 \times 10^1$	< 1.0000	> 6.5740	
				3	$< 1.00 \times 10^1$	< 1.0000	> 6.5740	
Klebsiella pneumoniae DR (ATCC #BAA-1705)	1 minute	4.050×10^7	7.6075	1	2.6950×10^7	7.4306	0.1769	0.1188
				2	3.1550×10^7	7.4990	0.1085	
				3	3.440×10^7	7.5366	0.0709	
	10 minutes	3.450×10^7	7.5378	1	1.8250×10^7	7.2613	0.2765	0.2419
				2	2.3250×10^7	7.3664	0.1714	
				3	1.820×10^7	7.2601	0.2777	

	20 minutes	3.950×10^7	7.5966	1	1.230×10^7	7.0899	0.5067	0.4417
				2	1.520×10^7	7.1818	0.4148	
				3	1.560×10^7	7.1931	0.4035	
	30 minutes	3.90×10^7	7.5911	1	1.0450×10^7	7.0191	0.5720	0.5382
				2	1.2950×10^7	7.1123	0.4788	
				3	1.0650×10^7	7.0273	0.5638	
	24 hours	1.560×10^7	7.1931	1	$< 1.00 \times 10^1$	< 1.0000	> 6.1931	> 6.1931
				2	$< 1.00 \times 10^1$	< 1.0000	> 6.1931	
				3	$< 1.00 \times 10^1$	< 1.0000	> 6.1931	

DR = Drug Resistant

TABLE 2 (continued)

Test Product: Broad Spectrum Hygiene Management

Lot Number 16180-1

Microorganism Species (ATCC # or BSLI #)	Exposure Time	Numbers Control		Replicate	Post-Exposure Population		Log_{10} Reduction	Average Log_{10} Reduction
		CFU/mL	Log_{10}		CFU/mL	Log_{10}		
Pseudomonas aeruginosa (ATCC #15442)	1 minute	1.6850×10^7	7.2266	1	$< 1.00 \times 10^1$	< 1.0000	> 6.2266	> 6.2266
				2	$< 1.00 \times 10^1$	< 1.0000	> 6.2266	
				3	$< 1.00 \times 10^1$	< 1.0000	> 6.2266	
	10 minutes	1.9850×10^7	7.2978	1	$< 1.00 \times 10^1$	< 1.0000	> 6.2978	> 6.2978
				2	$< 1.00 \times 10^1$	< 1.0000	> 6.2978	
				3	$< 1.00 \times 10^1$	< 1.0000	> 6.2978	
	20 minutes	1.9050×10^7	7.2799	1	$< 1.00 \times 10^1$	< 1.0000	> 6.2799	> 6.2799
				2	$< 1.00 \times 10^1$	< 1.0000	> 6.2799	
				3	$< 1.00 \times 10^1$	< 1.0000	> 6.2799	
	30 minutes	1.6750×10^7	7.2240	1	$< 1.00 \times 10^1$	< 1.0000	> 6.2240	> 6.2240
				2	$< 1.00 \times 10^1$	< 1.0000	> 6.2240	
				3	$< 1.00 \times 10^1$	< 1.0000	> 6.2240	
Pseudomonas aeruginosa MDR Clinical Isolate (BSLI #030116Pa5)	1 minute	3.70×10^7	7.5682	1	8.90×10^5	5.9494	1.6188	1.6003
				2	9.050×10^5	5.9566	1.6116	
				3	9.950×10^5	5.9978	1.5704	
	10 minutes	2.3750×10^7	7.3757	1	$< 1.00 \times 10^1$	< 1.0000	> 6.3757	> 6.3757
				2	$< 1.00 \times 10^1$	< 1.0000	> 6.3757	
				3	$< 1.00 \times 10^1$	< 1.0000	> 6.3757	

	20 minutes	2.3050×10^7	7.3627	1	$< 1.00 \times 10^1$	< 1.0000	> 6.3627	> 6.3627
				2	$< 1.00 \times 10^1$	< 1.0000	> 6.3627	
				3	$< 1.00 \times 10^1$	< 1.0000	> 6.3627	
	30 minutes	3.90×10^7	7.5911	1	$< 1.00 \times 10^1$	< 1.0000	> 6.5911	> 6.5911
				2	$< 1.00 \times 10^1$	< 1.0000	> 6.5911	
				3	$< 1.00 \times 10^1$	< 1.0000	> 6.5911	

MDR = Multi-Drug Resistant

TABLE 2 (continued)

Test Product: Broad Spectrum Hygiene Management

Lot Number 16180-1

Microorganism Species (ATCC #)	Exposure Time	Numbers Control		Replicate	Post-Exposure Population		Log_{10} Reduction	Average Log_{10} Reduction
		CFU/mL	Log_{10}		CFU/mL	Log_{10}		
Staphylococcus aureus MRSA (ATCC #33592)	1 minute	7.90×10^7	7.8976	1	3.10×10^7	7.4914	0.4062	0.3782
				2	3.5350×10^7	7.5484	0.3492	
				3	3.30×10^7	7.5185	0.3791	
	10 minutes	8.450×10^7	7.9269	1	4.250×10^6	6.6284	1.2985	1.2371
				2	4.80×10^6	6.6812	1.2457	
				3	5.750×10^6	6.7597	1.1672	
	20 minutes	8.250×10^7	7.9165	1	7.70×10^5	5.8865	2.0300	2.1425
				2	4.70×10^5	5.6721	2.2444	
				3	5.80×10^5	5.7634	2.1531	
	30 minutes	5.90×10^7	7.7709	1	1.310×10^5	5.1173	2.6536	2.6307
				2	1.2850×10^5	5.1089	2.6620	
				3	1.5650×10^5	5.1945	2.5764	
	24 hours	2.1750×10^7	7.3375	1	$< 1.00 \times 10^1$	< 1.0000	> 6.3375	> 6.3375
				2	$< 1.00 \times 10^1$	< 1.0000	> 6.3375	
				3	$< 1.00 \times 10^1$	< 1.0000	> 6.3375	
Staphylococcus epidermidis (ATCC #12228)	1 minute	1.890×10^8	8.2765	1	6.050×10^4	4.7818	3.4947	3.4374
				2	7.350×10^4	4.8663	3.4102	
				3	7.40×10^4	4.8692	3.4073	

	10 minutes	1.60×10^8	8.2041	1	$< 1.00 \times 10^1$	< 1.0000	> 7.2041	> 7.2041
				2	$< 1.00 \times 10^1$	< 1.0000	> 7.2041	
				3	$< 1.00 \times 10^1$	< 1.0000	> 7.2041	
	20 minutes	1.640×10^8	8.2148	1	$< 1.00 \times 10^1$	< 1.0000	> 7.2148	> 7.2148
				2	$< 1.00 \times 10^1$	< 1.0000	> 7.2148	
				3	$< 1.00 \times 10^1$	< 1.0000	> 7.2148	
	30 minutes	1.60×10^8	8.2041	1	$< 1.00 \times 10^1$	< 1.0000	> 7.2041	> 7.2041
				2	$< 1.00 \times 10^1$	< 1.0000	> 7.2041	
				3	$< 1.00 \times 10^1$	< 1.0000	> 7.2041	

MRSA = Methicillin-Resistant *Staphylococcus*

TABLE 2 (continued)

Test Product: Broad Spectrum Hygiene Management

Lot Number 16180-1

Microorganism Species (ATCC #)	Exposure Time	Numbers Control		Replicate	Post-Exposure Population		Log_{10} Reduction	Average Log_{10} Reduction
		CFU/mL	Log_{10}		CFU/mL	Log_{10}		
Staphylococcus haemolyticus (ATCC #29970)	1 minute	1.7750×10^7	7.2492	1	2.880×10^6	6.4594	0.7898	0.7540
				2	2.950×10^6	6.4698	0.7794	
				3	3.60×10^6	6.5563	0.6929	
	10 minutes	1.520×10^7	7.1818	1	5.30×10^4	4.7243	2.4575	2.4785
				2	6.150×10^4	4.7889	2.3929	
				3	3.950×10^4	4.5966	2.5852	
	20 minutes	1.0550×10^7	7.0233	1	7.00×10^3	3.8451	3.1782	3.1237
				2	8.350×10^3	3.9217	3.1016	
				3	8.550×10^3	3.9320	3.0913	
	30 minutes	8.50×10^6	6.9294	1	3.60×10^3	3.5563	3.3731	3.5204
				2	2.2250×10^3	3.3473	3.5821	
				3	2.1050×10^3	3.3233	3.6061	
Staphylococcus hominis (ATCC #700236)	1 minute	2.2950×10^7	7.3608	1	$< 1.00 \times 10^1$	< 1.0000	> 6.3608	> 5.2311
				2	1.2250×10^4	4.0881	3.2727	
				3	2.00×10^1	1.3010	6.0598	
	10 minutes	2.320×10^7	7.3655	1	$< 1.00 \times 10^1$	< 1.0000	> 6.3655	> 6.3655
				2	$< 1.00 \times 10^1$	< 1.0000	> 6.3655	
				3	$< 1.00 \times 10^1$	< 1.0000	> 6.3655	

	20 minutes	2.450×10^7	7.3892	1	$< 1.00 \times 10^1$	< 1.0000	> 6.3892	> 6.3892
				2	$< 1.00 \times 10^1$	< 1.0000	> 6.3892	
				3	$< 1.00 \times 10^1$	< 1.0000	> 6.3892	
	30 minutes	2.6150×10^7	7.4175	1	$< 1.00 \times 10^1$	< 1.0000	> 6.4175	> 6.4175
				2	$< 1.00 \times 10^1$	< 1.0000	> 6.4175	
				3	$< 1.00 \times 10^1$	< 1.0000	> 6.4175	

TABLE 2 (continued)

Test Product: Broad Spectrum Hygiene Management

Lot Number 16180-1

Microorganism Species (ATCC #)	Exposure Time	Numbers Control		Replicate	Post-Exposure Population		Log_{10} Reduction	Average Log_{10} Reduction
		CFU/mL	Log_{10}		CFU/mL	Log_{10}		
Streptococcus pneumoniae (ATCC #49619)	1 minute	9.050×10^6	6.9566	1	$< 1.00 \times 10^1$	< 1.0000	> 5.9566	> 5.9566
				2	$< 1.00 \times 10^1$	< 1.0000	> 5.9566	
				3	$< 1.00 \times 10^1$	< 1.0000	> 5.9566	
	10 minutes	8.30×10^6	6.9191	1	$< 1.00 \times 10^1$	< 1.0000	> 5.9191	> 5.9191
				2	$< 1.00 \times 10^1$	< 1.0000	> 5.9191	
				3	$< 1.00 \times 10^1$	< 1.0000	> 5.9191	
	20 minutes	9.450×10^6	6.9754	1	$< 1.00 \times 10^1$	< 1.0000	> 5.9754	> 5.9754
				2	$< 1.00 \times 10^1$	< 1.0000	> 5.9754	
				3	$< 1.00 \times 10^1$	< 1.0000	> 5.9754	
	30 minutes	6.250×10^6	6.7959	1	$< 1.00 \times 10^1$	< 1.0000	> 5.7959	> 5.7959
				2	$< 1.00 \times 10^1$	< 1.0000	> 5.7959	
				3	$< 1.00 \times 10^1$	< 1.0000	> 5.7959	
Streptococcus pyogenes (ATCC #19615)	1 minute	2.440×10^7	7.3874	1	1.410×10^3	3.1492	4.2382	4.3872
				2	1.2250×10^3	3.0881	4.2993	
				3	5.80×10^2	2.7634	4.6240	
	10 minutes	2.770×10^7	7.4425	1	1.00×10^1	1.0000	6.4425	> 6.4425
				2	$< 1.00 \times 10^1$	< 1.0000	> 6.4425	
				3	$< 1.00 \times 10^1$	< 1.0000	> 6.4425	

	20 minutes	2.4950×10^7	7.3971	1	$< 1.00 \times 10^1$	< 1.0000	> 6.3971	> 6.3971
				2	$< 1.00 \times 10^1$	< 1.0000	> 6.3971	
				3	$< 1.00 \times 10^1$	< 1.0000	> 6.3971	
	30 minutes	2.640×10^7	7.4216	1	$< 1.00 \times 10^1$	< 1.0000	> 6.4216	> 6.4216
				2	$< 1.00 \times 10^1$	< 1.0000	> 6.4216	
				3	$< 1.00 \times 10^1$	< 1.0000	> 6.4216	

TABLE 3

Reference Product: Dyna-Hex 2®

Diluted 1:10 in warm, sterile tap water

Lot Number 1021-912

Microorganism Species (ATCC #)	Exposure Time	Numbers Control		Replicate	Post-Exposure Population		Log_{10} Reduction	Average Log_{10} Reduction
		CFU/mL	Log_{10}		CFU/mL	Log_{10}		
Acinetobacter baumannii MDR (ATCC #BAA-1605)	1 minute	2.90×10^7	7.4624	1	$< 1.00 \times 10^1$	< 1.0000	> 6.4624	> 6.4624
				2	$< 1.00 \times 10^1$	< 1.0000	> 6.4624	
				3	$< 1.00 \times 10^1$	< 1.0000	> 6.4624	
	10 minutes	3.20×10^7	7.5051	1	$< 1.00 \times 10^1$	< 1.0000	> 6.5051	> 6.5051
				2	$< 1.00 \times 10^1$	< 1.0000	> 6.5051	
				3	$< 1.00 \times 10^1$	< 1.0000	> 6.5051	
	20 minutes	3.130×10^7	7.4955	1	$< 1.00 \times 10^1$	< 1.0000	> 6.4955	> 6.4955
				2	$< 1.00 \times 10^1$	< 1.0000	> 6.4955	
				3	$< 1.00 \times 10^1$	< 1.0000	> 6.4955	
	30 minutes	2.1750×10^7	7.3375	1	$< 1.00 \times 10^1$	< 1.0000	> 6.3375	> 6.3375
				2	$< 1.00 \times 10^1$	< 1.0000	> 6.3375	
				3	$< 1.00 \times 10^1$	< 1.0000	> 6.3375	
Candida albicans (ATCC #10231)	1 minute	9.80×10^6	6.9912	1	$< 1.00 \times 10^1$	< 1.0000	> 5.9912	> 5.9912
				2	$< 1.00 \times 10^1$	< 1.0000	> 5.9912	
				3	$< 1.00 \times 10^1$	< 1.0000	> 5.9912	
	10 minutes	8.10×10^6	6.9085	1	$< 1.00 \times 10^1$	< 1.0000	> 5.9085	> 5.9085
				2	$< 1.00 \times 10^1$	< 1.0000	> 5.9085	
				3	$< 1.00 \times 10^1$	< 1.0000	> 5.9085	

	20 minutes	1.0150×10^7	7.0065	1	$< 1.00 \times 10^1$	< 1.0000	> 6.0065	> 6.0065
				2	$< 1.00 \times 10^1$	< 1.0000	> 6.0065	
				3	$< 1.00 \times 10^1$	< 1.0000	> 6.0065	
	30 minutes	9.350×10^6	6.9708	1	$< 1.00 \times 10^1$	< 1.0000	> 5.9708	> 5.9708
				2	$< 1.00 \times 10^1$	< 1.0000	> 5.9708	
				3	$< 1.00 \times 10^1$	< 1.0000	> 5.9708	
	24 hours	1.5050×10^7	7.1775	1	$< 1.00 \times 10^1$	< 1.0000	> 6.1775	> 6.1775
				2	$< 1.00 \times 10^1$	< 1.0000	> 6.1775	
				3	$< 1.00 \times 10^1$	< 1.0000	> 6.1775	

MDR = Multi-Drug Resistant

TABLE 3 (continued)

Reference Product: Dyna-Hex 2®

Diluted 1:10 in warm, sterile tap water

Lot Number 1021-912

Microorganism Species (ATCC #)	Exposure Time	Numbers Control		Replicate	Post-Exposure Population		Log_{10} Reduction	Average Log_{10} Reduction
		CFU/mL	Log_{10}		CFU/mL	Log_{10}		
Enterobacter aerogenes (ATCC #13048)	1 minute	5.150×10^7	7.7118	1	$< 1.00 \times 10^1$	< 1.0000	> 6.7118	6.6531
				2	$< 1.00 \times 10^1$	< 1.0000	> 6.7118	
				3	1.50×10^1	1.1761	6.5357	
	10 minutes	1.7150×10^7	7.2343	1	$< 1.00 \times 10^1$	< 1.0000	> 6.2343	> 6.2343
				2	$< 1.00 \times 10^1$	< 1.0000	> 6.2343	
				3	$< 1.00 \times 10^1$	< 1.0000	> 6.2343	
	20 minutes	3.650×10^7	7.5623	1	$< 1.00 \times 10^1$	< 1.0000	> 6.5623	> 6.5623
				2	$< 1.00 \times 10^1$	< 1.0000	> 6.5623	
				3	$< 1.00 \times 10^1$	< 1.0000	> 6.5623	
	30 minutes	3.40×10^7	7.5315	1	$< 1.00 \times 10^1$	< 1.0000	> 6.5315	> 6.5315
				2	$< 1.00 \times 10^1$	< 1.0000	> 6.5315	
				3	$< 1.00 \times 10^1$	< 1.0000	> 6.5315	
	24 hours	1.780×10^7	7.2504	1	$< 1.00 \times 10^1$	< 1.0000	> 6.2504	> 6.2504
				2	$< 1.00 \times 10^1$	< 1.0000	> 6.2504	
				3	$< 1.00 \times 10^1$	< 1.0000	> 6.2504	
Enterococcus faecalis VRE (ATCC #51575)	1 minute	1.410×10^8	8.1492	1	$< 1.00 \times 10^1$	< 1.0000	> 7.1492	> 7.1492
				2	$< 1.00 \times 10^1$	< 1.0000	> 7.1492	
				3	$< 1.00 \times 10^1$	< 1.0000	> 7.1492	

	10 minutes	9.650×10^7	7.9845	1	$< 1.00 \times 10^1$	< 1.0000	> 6.9845	> 6.9845
				2	$< 1.00 \times 10^1$	< 1.0000	> 6.9845	
				3	$< 1.00 \times 10^1$	< 1.0000	> 6.9845	
	20 minutes	9.150×10^7	7.9614	1	$< 1.00 \times 10^1$	< 1.0000	> 6.9614	> 6.9614
				2	$< 1.00 \times 10^1$	< 1.0000	> 6.9614	
				3	$< 1.00 \times 10^1$	< 1.0000	> 6.9614	
	30 minutes	9.650×10^7	7.9845	1	$< 1.00 \times 10^1$	< 1.0000	> 6.9845	> 6.9845
				2	$< 1.00 \times 10^1$	< 1.0000	> 6.9845	
				3	$< 1.00 \times 10^1$	< 1.0000	> 6.9845	

VRE = Vancomycin-Resistant *Enterococcus*

TABLE 3 (continued)

Reference Product: Dyna-Hex 2®

Diluted 1:10 in warm, sterile tap water

Lot Number 1021-912

Microorganism Species (ATCC #)	Exposure Time	Numbers Control		Replicate	Post-Exposure Population		Log_{10} Reduction	Average Log_{10} Reduction
		CFU/mL	Log_{10}		CFU/mL	Log_{10}		
Escherichia coli (ATCC #11229)	1 minute	2.3850×10^7	7.3775	1	$< 1.00 \times 10^1$	< 1.0000	> 6.3775	> 6.3775
				2	$< 1.00 \times 10^1$	< 1.0000	> 6.3775	
				3	$< 1.00 \times 10^1$	< 1.0000	> 6.3775	
	10 minutes	1.9550×10^7	7.2911	1	1.00×10^1	1.0000	6.2911	> 6.2911
				2	$< 1.00 \times 10^1$	< 1.0000	> 6.2911	
				3	$< 1.00 \times 10^1$	< 1.0000	> 6.2911	
	20 minutes	1.8150×10^7	7.2589	1	$< 1.00 \times 10^1$	< 1.0000	> 6.2589	> 6.2589
				2	$< 1.00 \times 10^1$	< 1.0000	> 6.2589	
				3	$< 1.00 \times 10^1$	< 1.0000	> 6.2589	
	30 minutes	2.2150×10^7	7.3454	1	$< 1.00 \times 10^1$	< 1.0000	> 6.3454	> 6.3454
				2	$< 1.00 \times 10^1$	< 1.0000	> 6.3454	
				3	$< 1.00 \times 10^1$	< 1.0000	> 6.3454	
Fusarium solani (ATCC #36031)	1 minute	4.350×10^5	5.6385	1	$< 1.00 \times 10^1$	< 1.0000	> 4.6385	> 4.4795
				2	3.00×10^1	1.4771	4.1614	
				3	$< 1.00 \times 10^1$	< 1.0000	> 4.6385	
	10 minutes	4.30×10^5	5.6335	1	$< 1.00 \times 10^1$	< 1.0000	> 4.6335	> 4.6335
				2	$< 1.00 \times 10^1$	< 1.0000	> 4.6335	
				3	$< 1.00 \times 10^1$	< 1.0000	> 4.6335	

	20 minutes	4.450×10^5	5.6484	1	$< 1.00 \times 10^1$	< 1.0000	> 4.6484	> 4.6484
				2	$< 1.00 \times 10^1$	< 1.0000	> 4.6484	
				3	$< 1.00 \times 10^1$	< 1.0000	> 4.6484	
	30 minutes	3.250×10^5	5.5119	1	$< 1.00 \times 10^1$	< 1.0000	> 4.5119	> 4.5119
				2	$< 1.00 \times 10^1$	< 1.0000	> 4.5119	
				3	$< 1.00 \times 10^1$	< 1.0000	> 4.5119	
	24 hours	1.110×10^6	6.0453	1	$< 1.00 \times 10^1$	< 1.0000	> 5.0453	> 5.0453
				2	$< 1.00 \times 10^1$	< 1.0000	> 5.0453	
				3	$< 1.00 \times 10^1$	< 1.0000	> 5.0453	

TABLE 3 (continued)

Reference Product: Dyna-Hex 2®

Diluted 1:10 in warm, sterile tap water

Lot Number 1021-912

Microorganism Species (ATCC #)	Exposure Time	Numbers Control		Replicate	Post-Exposure Population		Log_{10} Reduction	Average Log_{10} Reduction
		CFU/mL	Log_{10}		CFU/mL	Log_{10}		
Haemophilus influenzae (ATCC #19418)	1 minute	4.10×10^7	7.6128	1	$< 1.00 \times 10^1$	< 1.0000	> 6.6128	> 6.6128
				2	$< 1.00 \times 10^1$	< 1.0000	> 6.6128	
				3	$< 1.00 \times 10^1$	< 1.0000	> 6.6128	
	10 minutes	3.250×10^7	7.5119	1	$< 1.00 \times 10^1$	< 1.0000	> 6.5119	> 6.5119
				2	$< 1.00 \times 10^1$	< 1.0000	> 6.5119	
				3	$< 1.00 \times 10^1$	< 1.0000	> 6.5119	
	20 minutes	4.450×10^7	7.6484	1	$< 1.00 \times 10^1$	< 1.0000	> 6.6484	> 6.6484
				2	$< 1.00 \times 10^1$	< 1.0000	> 6.6484	
				3	$< 1.00 \times 10^1$	< 1.0000	> 6.6484	
	30 minutes	3.750×10^7	7.5740	1	$< 1.00 \times 10^1$	< 1.0000	> 6.5740	> 6.5740
				2	$< 1.00 \times 10^1$	< 1.0000	> 6.5740	
				3	$< 1.00 \times 10^1$	< 1.0000	> 6.5740	
Klebsiella pneumoniae DR (ATCC #BAA-1705)	1 minute	4.050×10^7	7.6075	1	$< 1.00 \times 10^1$	< 1.0000	> 6.6075	> 6.3481
				2	6.00×10^1	1.7782	5.8293	
				3	$< 1.00 \times 10^1$	< 1.0000	> 6.6075	
	10 minutes	3.450×10^7	7.5378	1	$< 1.00 \times 10^1$	< 1.0000	> 6.5378	> 6.1364
				2	1.60×10^2	2.2041	5.3337	
				3	$< 1.00 \times 10^1$	< 1.0000	> 6.5378	

	20 minutes	3.950×10^7	7.5966	1	4.00×10^1	1.6021	5.9945	> 6.3959
				2	$< 1.00 \times 10^1$	< 1.0000	> 6.5966	
				3	$< 1.00 \times 10^1$	< 1.0000	> 6.5966	
	30 minutes	3.90×10^7	7.5911	1	$< 1.00 \times 10^1$	< 1.0000	> 6.5911	> 6.5911
				2	1.00×10^1	1.0000	6.5911	
				3	$< 1.00 \times 10^1$	< 1.0000	> 6.5911	
	24 hours	1.560×10^7	7.1931	1	$< 1.00 \times 10^1$	< 1.0000	> 6.1931	> 6.1931
				2	$< 1.00 \times 10^1$	< 1.0000	> 6.1931	
				3	$< 1.00 \times 10^1$	< 1.0000	> 6.1931	

DR = Drug Resistant

TABLE 3 (continued)

Reference Product: Dyna-Hex 2®

Diluted 1:10 in warm, sterile tap water

Lot Number 1021-912

Microorganism Species (ATCC # or BSLI #)	Exposure Time	Numbers Control		Replicate	Post-Exposure Population		Log_{10} Reduction	Average Log_{10} Reduction
		CFU/mL	Log_{10}		CFU/mL	Log_{10}		
Pseudomonas aeruginosa (ATCC #15442)	1 minute	1.6850×10^7	7.2266	1	$< 1.00 \times 10^1$	< 1.0000	> 6.2266	> 6.2266
				2	$< 1.00 \times 10^1$	< 1.0000	> 6.2266	
				3	$< 1.00 \times 10^1$	< 1.0000	> 6.2266	
	10 minutes	1.9850×10^7	7.2978	1	$< 1.00 \times 10^1$	< 1.0000	> 6.2978	> 6.2978
				2	$< 1.00 \times 10^1$	< 1.0000	> 6.2978	
				3	$< 1.00 \times 10^1$	< 1.0000	> 6.2978	
	20 minutes	1.9050×10^7	7.2799	1	$< 1.00 \times 10^1$	< 1.0000	> 6.2799	> 6.2799
				2	$< 1.00 \times 10^1$	< 1.0000	> 6.2799	
				3	$< 1.00 \times 10^1$	< 1.0000	> 6.2799	
	30 minutes	1.6750×10^7	7.2240	1	$< 1.00 \times 10^1$	< 1.0000	> 6.2240	> 6.2240
				2	$< 1.00 \times 10^1$	< 1.0000	> 6.2240	
				3	$< 1.00 \times 10^1$	< 1.0000	> 6.2240	
Pseudomonas aeruginosa MDR Clinical Isolate (BSLI #030116Pa5)	1 minute	3.70×10^7	7.5682	1	$< 1.00 \times 10^1$	< 1.0000	> 6.5682	> 6.5682
				2	$< 1.00 \times 10^1$	< 1.0000	> 6.5682	
				3	$< 1.00 \times 10^1$	< 1.0000	> 6.5682	
	10 minutes	2.3750×10^7	7.3757	1	$< 1.00 \times 10^1$	< 1.0000	> 6.3757	> 6.3757
				2	1.00×10^1	1.0000	6.3757	
				3	$< 1.00 \times 10^1$	< 1.0000	> 6.3757	

	20 minutes	2.3050×10^7	7.3627	1	$< 1.00 \times 10^1$	< 1.0000	> 6.3627	> 6.3627
				2	$< 1.00 \times 10^1$	< 1.0000	> 6.3627	
				3	$< 1.00 \times 10^1$	< 1.0000	> 6.3627	
	30 minutes	3.90×10^7	7.5911	1	$< 1.00 \times 10^1$	< 1.0000	> 6.5911	> 6.5911
				2	$< 1.00 \times 10^1$	< 1.0000	> 6.5911	
				3	$< 1.00 \times 10^1$	< 1.0000	> 6.5911	

MDR = Multi-Drug Resistant

TABLE 3 (continued)

Reference Product: Dyna-Hex 2®

Diluted 1:10 in warm, sterile tap water

Lot Number 1021-912

Microorganism Species (ATCC #)	Exposure Time	Numbers Control		Replicate	Post-Exposure Population		Log_{10} Reduction	Average Log_{10} Reduction
		CFU/mL	Log_{10}		CFU/mL	Log_{10}		
Staphylococcus aureus MRSA (ATCC #33592)	1 minute	7.90×10^7	7.8976	1	2.6750×10^3	3.4273	4.4703	> 5.3627
				2	1.5050×10^3	3.1775	4.7201	
				3	$< 1.00 \times 10^1$	< 1.0000	> 6.8976	
	10 minutes	8.450×10^7	7.9269	1	$< 1.00 \times 10^1$	< 1.0000	> 6.9269	> 6.9269
				2	$< 1.00 \times 10^1$	< 1.0000	> 6.9269	
				3	1.00×10^1	1.0000	6.9269	
	20 minutes	8.250×10^7	7.9165	1	2.00×10^1	1.3010	6.6155	> 6.7158
				2	2.00×10^1	1.3010	6.6155	
				3	$< 1.00 \times 10^1$	< 1.0000	> 6.9165	
	30 minutes	5.90×10^7	7.7709	1	$< 1.00 \times 10^1$	< 1.0000	> 6.7709	> 6.7709
				2	$< 1.00 \times 10^1$	< 1.0000	> 6.7709	
				3	$< 1.00 \times 10^1$	< 1.0000	> 6.7709	
	24 hours	2.1750×10^7	7.3375	1	$< 1.00 \times 10^1$	< 1.0000	> 6.3375	> 6.3375
				2	$< 1.00 \times 10^1$	< 1.0000	> 6.3375	
				3	$< 1.00 \times 10^1$	< 1.0000	> 6.3375	
Staphylococcus epidermidis (ATCC #12228)	1 minute	1.890×10^8	8.2765	1	$< 1.00 \times 10^1$	< 1.0000	> 7.2765	> 7.2765
				2	$< 1.00 \times 10^1$	< 1.0000	> 7.2765	
				3	$< 1.00 \times 10^1$	< 1.0000	> 7.2765	

	10 minutes	1.60×10^8	8.2041	1	$< 1.00 \times 10^1$	< 1.0000	> 7.2041	> 7.2041
				2	$< 1.00 \times 10^1$	< 1.0000	> 7.2041	
				3	$< 1.00 \times 10^1$	< 1.0000	> 7.2041	
	20 minutes	1.640×10^8	8.2148	1	$< 1.00 \times 10^1$	< 1.0000	> 7.2148	> 7.2148
				2	$< 1.00 \times 10^1$	< 1.0000	> 7.2148	
				3	$< 1.00 \times 10^1$	< 1.0000	> 7.2148	
	30 minutes	1.60×10^8	8.2041	1	$< 1.00 \times 10^1$	< 1.0000	> 7.2041	> 7.2041
				2	$< 1.00 \times 10^1$	< 1.0000	> 7.2041	
				3	$< 1.00 \times 10^1$	< 1.0000	> 7.2041	

MRSA = Methicillin-Resistant *Staphylococcus*

TABLE 3 (continued)

Reference Product: Dyna-Hex 2®

Diluted 1:10 in warm, sterile tap water

Lot Number 1021-912

Microorganism Species (ATCC #)	Exposure Time	Numbers Control		Replicate	Post-Exposure Population		Log_{10} Reduction	Average Log_{10} Reduction
		CFU/mL	Log_{10}		CFU/mL	Log_{10}		
Staphylococcus haemolyticus (ATCC #29970)	1 minute	1.7750×10^7	7.2492	1	$< 1.00 \times 10^1$	< 1.0000	> 6.2492	> 6.2492
				2	$< 1.00 \times 10^1$	< 1.0000	> 6.2492	
				3	$< 1.00 \times 10^1$	< 1.0000	> 6.2492	
	10 minutes	1.520×10^7	7.1818	1	$< 1.00 \times 10^1$	< 1.0000	> 6.1818	> 6.1818
				2	$< 1.00 \times 10^1$	< 1.0000	> 6.1818	
				3	$< 1.00 \times 10^1$	< 1.0000	> 6.1818	
	20 minutes	1.0550×10^7	7.0233	1	$< 1.00 \times 10^1$	< 1.0000	> 6.0233	> 6.0233
				2	$< 1.00 \times 10^1$	< 1.0000	> 6.0233	
				3	$< 1.00 \times 10^1$	< 1.0000	> 6.0233	
	30 minutes	8.50×10^6	6.9294	1	$< 1.00 \times 10^1$	< 1.0000	> 5.9294	> 5.9294
				2	$< 1.00 \times 10^1$	< 1.0000	> 5.9294	
				3	$< 1.00 \times 10^1$	< 1.0000	> 5.9294	
Staphylococcus hominis (ATCC #700236)	1 minute	2.2950×10^7	7.3608	1	$< 1.00 \times 10^1$	< 1.0000	> 6.3608	> 6.3608
				2	$< 1.00 \times 10^1$	< 1.0000	> 6.3608	
				3	$< 1.00 \times 10^1$	< 1.0000	> 6.3608	
	10 minutes	2.320×10^7	7.3655	1	$< 1.00 \times 10^1$	< 1.0000	> 6.3655	> 6.3655
				2	$< 1.00 \times 10^1$	< 1.0000	> 6.3655	
				3	$< 1.00 \times 10^1$	< 1.0000	> 6.3655	

	20 minutes	2.450×10^7	7.3892	1	$< 1.00 \times 10^1$	< 1.0000	> 6.3892	> 6.3892
				2	$< 1.00 \times 10^1$	< 1.0000	> 6.3892	
				3	$< 1.00 \times 10^1$	< 1.0000	> 6.3892	
	30 minutes	2.6150×10^7	7.4175	1	$< 1.00 \times 10^1$	< 1.0000	> 6.4175	> 6.4175
				2	$< 1.00 \times 10^1$	< 1.0000	> 6.4175	
				3	$< 1.00 \times 10^1$	< 1.0000	> 6.4175	

TABLE 3 (continued)

Reference Product: Dyna-Hex 2®

Diluted 1:10 in warm, sterile tap water

Lot Number 1021-912

Microorganism Species (ATCC #)	Exposure Time	Numbers Control		Replicate	Post-Exposure Population		Log_{10} Reduction	Average Log_{10} Reduction
		CFU/mL	Log_{10}		CFU/mL	Log_{10}		
Streptococcus pneumoniae (ATCC #49619)	1 minute	9.050×10^6	6.9566	1	$< 1.00 \times 10^1$	< 1.0000	> 5.9566	> 5.9566
				2	$< 1.00 \times 10^1$	< 1.0000	> 5.9566	
				3	$< 1.00 \times 10^1$	< 1.0000	> 5.9566	
	10 minutes	8.30×10^6	6.9191	1	$< 1.00 \times 10^1$	< 1.0000	> 5.9191	> 5.9191
				2	$< 1.00 \times 10^1$	< 1.0000	> 5.9191	
				3	$< 1.00 \times 10^1$	< 1.0000	> 5.9191	
	20 minutes	9.450×10^6	6.9754	1	$< 1.00 \times 10^1$	< 1.0000	> 5.9754	> 5.9754
				2	$< 1.00 \times 10^1$	< 1.0000	> 5.9754	
				3	$< 1.00 \times 10^1$	< 1.0000	> 5.9754	
	30 minutes	6.250×10^6	6.7959	1	$< 1.00 \times 10^1$	< 1.0000	> 5.7959	> 5.7959
				2	$< 1.00 \times 10^1$	< 1.0000	> 5.7959	
				3	$< 1.00 \times 10^1$	< 1.0000	> 5.7959	
Streptococcus pyogenes (ATCC #19615)	1 minute	2.440×10^7	7.3874	1	1.950×10^2	2.2900	5.0974	> 5.9574
				2	$< 1.00 \times 10^1$	< 1.0000	> 6.3874	
				3	$< 1.00 \times 10^1$	< 1.0000	> 6.3874	
	10 minutes	2.770×10^7	7.4425	1	$< 1.00 \times 10^1$	< 1.0000	> 6.4425	> 6.4425
				2	$< 1.00 \times 10^1$	< 1.0000	> 6.4425	
				3	$< 1.00 \times 10^1$	< 1.0000	> 6.4425	

	20 minutes	2.4950×10^7	7.3971	1	$< 1.00 \times 10^1$	< 1.0000	> 6.3971	> 6.3971
				2	$< 1.00 \times 10^1$	< 1.0000	> 6.3971	
				3	$< 1.00 \times 10^1$	< 1.0000	> 6.3971	
	30 minutes	2.640×10^7	7.4216	1	$< 1.00 \times 10^1$	< 1.0000	> 6.4216	> 6.4216
				2	$< 1.00 \times 10^1$	< 1.0000	> 6.4216	
				3	$< 1.00 \times 10^1$	< 1.0000	> 6.4216	