



Short Communication

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Wonder Spray (HOCL) Kills the Bacteria that Cause Strep Throat and Pneumonia

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Abstract

The bacteria that is the cause of strep throat is *Streptococcus pyogenes* and one cause of pneumonia is infection with *Streptococcus pneumoniae*. Wonder spray is a new product with an active ingredient of Hypochlorous acid (HOCL) that has been FDA cleared for use in wound healing. HOCL is used by the body's white blood cells to kill all pathogens; bacteria, virus, yeast mold and fungus [1]. We performed a kill time study to determine if HOCL was effective in killing *Streptococcus pyogenes* and *Streptococcus pneumoniae*. We discovered that HOCL kills these bacteria with a 6-log reduction in less than 15 seconds. Healthcare professionals may wish to consider using HOCL as an alternative to standard antibiotic regimens.

Procedure Summary

This study was performed at Micro Quality Labs, Inc in Burbank California. The organisms were prepared by inoculating the surface of 5% Sheep blood agar plates, incubated at 30 to 35°C for 18 to 24 hours. Following the incubation period, the plates are washed with sterile Serological Saline Solution to harvest the microorganisms used and dilutions with Saline were made, plated on blood agar and incubated at 30 to 35°C for 24-48 hours to determine the concentration. The inoculum level was then adjusted to 108 cfu/ml for use as a stock suspension. Stock suspensions were well mixed and homogenized at each inoculation interval. The following microorganisms were used in this Kill Time Study to demonstrate the antimicrobial properties of the Wonder Spray against common pathogenic organisms: Microbiologies Kwik-Stik *Streptococcus pyogenes* ATCC 49399, *Streptococcus pneumoniae* ATCC 49619.

Positive controls were performed at initiation and completion by spread plating to enumerate inoculum levels and verify culture purity during testing and Negative controls are performed to establish sterility of media, reagents, and materials used at

initiation. Neutralizer Suitability using Modified Lethen Broth (MLB) was performed concurrently with Kill Time testing to confirm the recovery of <100 CFU of the test organism in the subculture media in the presence of product. Duplicate 10 ml containers for each treated specimen or material concentration was prepared, equilibrated to 25±2°C, and 0.1ml of inoculum is added to each container to achieve a final concentration of 106 cfu/ml.

Serial dilutions from each replicate were made at intervals of 15 second, 30 second, 1 minute and 5 minutes using 1ml of the inoculated test product into 9ml MLB from 1:10 to 1:1000000. Subsequently, 1ml from each dilution was spread plated on 5% Sheep Blood agar plate in duplicate, incubated at 30 to 35°C for 48 hours. After the incubation period, all plates were counted to determine the number of microorganisms, results are averaged and reported as log 10 reductions.

Data Calculation

(Table 1, Table 2).

Table 1: *Streptococcus Pneumoniae* ATCC 49619.

Exposure Time	Concentration of Organism cfu/ml		Percent Reduction		Log10 Reduction	
	Control	Product	Control	Product	Control	Product
Initial	1.14 x 10 ⁶	N/A	N/A	N/A	N/A	N/A
Time 15 sec	N/A	< 10	N/A	99.99%	N/A	6.057

Time 30 sec	N/A	< 10	N/A	99.99%	N/A	6.057
Time 1 minute	N/A	<10	N/A	99.99%	N/A	6.057
Time 5 minute	N/A	<10	N/A	99.99%	N/A	6.057

Table 2: Streptococcus Pyogenes ATCC 49399.

Exposure Time	Concentration of Organism cfu/ml		Percent Reduction		Log10 Reduction	
	Control	Product	Control	Product	Control	Product
Initial	1.22 x 10 ⁶	N/A	N/A	N/A	N/A	N/A
Time 15 sec	N/A	<10	N/A	99.99%	N/A	6.086
Time 30 sec	N/A	<10	N/A	99.99%	N/A	6.086
Time 1 minute	N/A	<10	N/A	99.99%	N/A	6.086
Time 5 minute	N/A	<10	N/A	99.99%	N/A	6.086

Conclusion

Wonder spray (HOCL) is a powerful, yet safe, product, cleared by the FDA for wound care due to its ability to kill all pathogens. In this study, bacteria that cause strep throat and pneumonia are effectively killed by HOCL in less than 15 seconds. Healthcare professionals most often prescribe penicillin or amoxicillin to treat these bacterial infections. Side effects of penicillin antibiotics include diarrhea, dizziness, heartburn, insomnia, nausea, itching, vomiting, confusion, abdominal pain, easy bruising, bleeding, rash, and allergic reactions. The most common side effects of amoxicillin are nausea, vomiting, stomach pain and diarrhea. These are typically short-lived and resolve once you stop taking the antibiotic.

Although amoxicillin destroys infection-causing bacteria, it will also destroy the good bacteria that naturally reside in the body. This can lead to an overgrowth of yeast, which may not only produce diarrhea but also cause yeast infections, especially in the mouth and vagina. In addition, oral amoxicillin exposure caused marked shifts

in microbiome composition that lasted approximately 30 days on average and were observed for more than 2 months in some of the treated individuals [2]. The additional concern about resistance to antibiotics is well known. Bacteria have not been known to develop a resistance to HOCL nor is it known to cause any of the side effects listed above. Healthcare professionals may wish to consider using HOCL in their office or recommending it to patients for use at home.

Acknowledgement

None.

Conflict of Interest

No conflict of interest.

References

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