

Comparison of the Early Antibacterial Efficacy of Theraworx and Theraworx Plus Skin and Wound Cleansers

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Early antibacterial action of skin and wound cleansers against resistant bacterial strains is an increasing important need. Much of the reported efficacy with wound care products is based on testing over a 24 period even though the use of these products are limited to substantially shorter periods of time. Theraworx was designed as a skin healthy cleanser and has been found to possess antibacterial characteristics as well. Theraworx Plus adds the accepted antibacterial properties of Benzalkonium Chloride to the cleansing characteristics of the Theraworx solution. This in vitro study was performed to determine the early bactericidal capabilities of both solutions.

Procedure: Modifications of Method 100 testing were performed to allow evaluation at time intervals appropriate for duration of contact when used as a skin and wound cleanser. Sterile non-woven fabric was cut into one inch squares and pre-moistened with the Theraworx or Theraworx Plus. Known concentrations of Methicillin Resistant Staphylococcus Aureus were added to saturate the fabric samples. The samples were then incubated at room temperature for 30 seconds, 60 seconds or 120 seconds. Immediately following the timed exposure, the fabric was placed into broth containing an appropriate neutralizer and agitated for one minute. Ten microliters of the solution was then plated onto blood agar and incubated at 37 degrees for 24 hours. Quantitative analysis was then performed and log reduction calculated. This entire procedure was then repeated with Pseudomonas Aeruginosa.

Results: Quantitative analysis results are presented in the table below.

Bacteria tested	Solution tested	30 seconds	60 seconds	120 seconds
MRSA	Theraworx	>log 3 reduction	>log 3 reduction	>log 4 reduction
	Theraworx Plus	>log 3 reduction	>log 3 reduction	>log 4 reduction
Pseudomonas	Theraworx	>log 3 reduction	>log 3 reduction	>log 4 reduction
	Theraworx Plus	>log 3 reduction	>log 3 reduction	>log 4 reduction

Summary: Theraworx and Theraworx Plus provide >99.9% efficacy at 30 seconds and 60 seconds exposure to MRSA and Pseudomonas aeruginosa and >99.99% efficacy at 120 second exposure. This bactericidal activity is sufficient for both skin and wound cleansing.

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