

Background

StaphAseptic® first aid antiseptic pain relieving gel was developed for use as a first aid antimicrobial wound treatment. The aim of the study was to evaluate the antimicrobial efficacy of StaphAseptic when challenged with 5 different microorganism strains.

Methods

An independent analytical laboratory performed *in vitro* tests according to the Food and Drug Administration's method published in the Federal Register Vol. 56, No. 140, July 22, 1991, page 33678, "§333.70 Testing of first aid antiseptic drug products." The procedure specifies three common microorganisms to represent the spectrum of gram positive and gram negative bacteria:

- *Escherichia coli* (ATCC No. 8739)
- *Pseudomonas aeruginosa* (ATCC No. 9027)
- *Staphylococcus aureus* (ATCC No. 6538)

The method was modified slightly to add the following organisms:

- *Streptococcus pyogenes* (ATCC No. 19165)
- *Staphylococcus aureus*, methicillin resistant (ATCC 33591)

All bacteria were subjected to the bactericidal assay procedure, which evaluated the number of bacteria killed in 10 minutes, and the bacteriostatic assay procedure, which evaluated StaphAseptic's ability to prevent an increase in the number of organisms for 48 hours.

Results

Bactericidal assay: The results for all organisms exceeded the three log reduction criteria as outlined in the Federal Register, Vol. 56, No. 140.

Organism	Average CFU Recovered	Log ^a	Average Positive Control CFU Recovered	Log ^b	Log Reduction	Percent Reduction
Methicillin resistant <i>S. aureus</i>	1.65 x 10 ⁷	7.22	2.88 x 10 ¹⁰	10.5	3.28	>99.942
<i>S. pyogenes</i>	1.90 x 10 ²	2.30	4.4 x 10 ⁷	7.6	5.3	>99.999
<i>E. coli</i>	20	1.30	2.3 x 10 ⁸	8.4	7.1	>99.99999
<i>S. aureus</i>	133	2.10	2.5 x 10 ⁸	8.4	6.3	>99.9999
<i>P. aeruginosa</i>	163	2.20	3.2 x 10 ⁸	8.5	6.3	>99.9999

^a Log of average CFU recovered.

^b Log of average positive control CFU recovered.

Bacteriostatic assay: The test sample (StaphAseptic) prevented an increase in the number of all organism species tested in an inoculum of 10⁸ when incubated at 32°C for 48 hours.

Conclusion

StaphAseptic first aid antiseptic pain relieving gel was found to effectively kill and prevent an increase in the number of pathogens that cause skin infection, including methicillin resistant staphylococcus aureus.