A Time-Kill Kinetic Study of Four Antiseptic Active Ingredients Versus Strains of Twenty-six Species of Medically Relevant Bacteria and Yeast

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Abstract

In recent years, the Food and Drug Administration (FDA) has redefined the requirements for demonstrating the effectiveness and safety of topical antiseptic ingredients. To provide in vivo efficacy data fulfilling the FDA requirements, a large-scale Time-Kill study was undertaken using ASTM E2783-16: Standard Test Method for Assessment of Antimicrobial Activity for Water Miscible Compounds Using a Time-Kill Procedure\textsuperscript{1}.

Methods

- Preliminary neutralization study per ASTM Standard Method E1014


- Activity of the antiseptic ingredients was evaluated against 269 microorganisms in two yeast species, including many clinical and/or multi-resistant strains.

- Significant decreases in microbial viability were achieved in 15 and 30 seconds.

- The test materials produced at least 3 log\textsubscript{10}, or greater reductions for 100% of the microorganisms exposed to Benzalkonium Chloride, Benzethonium Chloride, Chloroxylenol, Ethanol and 99% of the microorganisms exposed to Chloroxylenol.

- The data resulting from this study fulfill one of FDA’s new requirements for demonstration of in vivo efficacy of antimicrobial ingredients for healthcare and consumer settings.

Conclusions

- The results from this study demonstrate that these active ingredients provide rapid and broad-spectrum microbial efficacy. Their use in antiseptic hand products may play a key role in the reduction of bacteria and yeast on hands and provide less opportunity for the spread of infectious microorganisms in healthcare, foodhandler and consumer settings.

References


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