



**SPOTLIGHT**

**Dry Surface Biofilms**



## Study Focus: Is Hydrogen peroxide more effective against *Staphylococcus aureus* and *Pseudomonas aeruginosa* biofilms than quaternary ammonium compounds?

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### Background

Antimicrobial disinfectants are used as primary treatment options against pathogens on surfaces in healthcare facilities to help prevent healthcare associated infections (HAIs). On many surfaces, pathogenic microorganisms exist as biofilms and form an extracellular matrix that protects them from the antimicrobial effects of disinfectants. Disinfectants are used as all-purpose antimicrobials though very few specifically make biofilm efficacy claims. The objective of this study was to evaluate the efficacy of eight registered disinfectants (six registered by the Environmental Protection Agency and two products registered in by the European Chemical Agency) with general bactericidal claims, but currently no biofilm efficacy claims, against *Staphylococcus aureus* ATCC-6538 and *Pseudomonas aeruginosa* ATCC-15442 biofilms. We hypothesized that hydrogen peroxide products would be more effective than quaternary ammonium chlorides.

### Methods

This study tested the bactericidal efficacy of eight registered disinfectant products against *S. aureus* ATCC-6538 and *P. aeruginosa* ATCC-15442 grown on glass coupons using a Center for Disease Control (CDC) biofilm reactor and EPA MLB SOP MB-19. Bactericidal efficacy was determined after treating coupons with disinfectants following standard EPA MLB SOP MB-20.

### Results

Overall, hydrogen peroxide disinfectants had significantly higher bactericidal efficacies than quaternary ammonium chloride disinfectants. We also found that all tested disinfectants except for quaternary ammonium chloride disinfectants met and exceeded the EPA standard for bactericidal efficacy against biofilms.

### Conclusion

In general, bactericidal efficacy against biofilms differed by active ingredient. The efficacies of sodium hypochlorite and hydrogen peroxide disinfectants did not vary between strains, but there were significant differences between strains treated with quaternary ammonium chloride disinfectants.

