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Paper Abstracts
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Disinfection efficacy testing of a new dual disinfectant investigational multi-purpose solution challenged against the five bacterial and fungal compendial organisms

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Purpose: A new dual disinfectant multi-purpose solution (MPS) was evaluated to determine the disinfection efficacy against bacterial and fungal organisms associated with microbial keratitis.
Method: The new borate-free investigational MPS (0.00015% polyquarternium-1 (PQ-1) and 0.0003% alexidine dihydrochloride) was tested for disinfection efficacy per ISO 14729 methodology using bacterial microbes Staphylococcus aureus (Sa), Pseudomonas aeruginosa (Pa), Serratia marcescens (Sm), and fungal microbes Candida albicans (Ca), and Fusarium solani (Fs), prepared with and without organic soil. These bacterial and fungal organisms were used to challenge the investigational MPS, and after 4 hours of disinfection each test solution was plated in triplicate and incubated. Plates were enumerated for the recovery of organisms and log reduction values (LRV) were calculated (with primary acceptance criteria per ISO 14729 being LRV of 3.0 [bacteria] and 1.0 [fungi]) and analyzed with Graphpad Prism.
Results: The mean LRVs for the bacterial organisms (Sa, Pa, and Sm) without organic soil were 4.7, 4.6, and 4.7, and with the incorporation of organic soil the LRVs were 4.6, 4.7, and 4.6, respectively. The fungal organisms (Ca and Fs) without organic soil showed mean LRVs of 3.9 and 4.5, and with the incorporation of organic soil the mean LRVs were 4.3 and 4.4, respectively.
Conclusions: This new dual disinfectant MPS was efficacious and exceeded the ISO 14729 primary acceptance criteria for each challenge organism even in the presence of organic soil. This investigational MPS demonstrated robust disinfection per ISO 14729 against bacterial and fungal organisms.

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