

# NON SILVER ANTIMICROBIAL DRESSING SHOWS PROMISING PERFORMANCE AFTER 28 DAYS WEAR TIME

A new antimicrobial wound dressing has demonstrated promising early results with significant efficacy 1-hour after application and has a potential 28-day wear-time.

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### INTRODUCTION

A new, highly absorbent, gel forming wound dressing has been developed that contains polyhexamethylenebiguanide (PHMB) and a novel anti-biofilm formulation. It has three technologies that work together to manage three predominant barriers to wound healing: biofilm, contamination by microorganisms, and excess exudate.

1. The novel anti-biofilm formulation helps to reduce or disrupt the formation of biofilm within the dressing.
2. PHMB helps to reduce microbial contamination within the dressing.
3. Carboxymethyl cellulose (CMC) fibre technology captures microbial contamination, exudate and wound debris which helps to reduce or to minimise cross infection and prevent maceration.

The gelling dressing containing PHMB is soft, conformable and highly absorbent. The dressing is produced from sodium carboxymethyl cellulose and strengthening cellulose fibre(s) with antimicrobial PHMB and a novel anti-biofilm formulation.

Even when the dressing is moist the structure remains intact. The high vertical absorption of exudate into the dressing forms a gel which assists in maintaining a moist wound environment, supporting autolytic debridement, protects the wound edge and surrounding skin from maceration, thus supporting the healing process.

The dressing is indicated for the following types of wounds: partial thickness burns, leg ulcers, pressure ulcers, diabetic ulcers, surgical wounds or other traumatic wounds such as post-operative, lacerations and donor or graft sites.

The current study demonstrates the efficacy of the dressing against bacterial infection in the AATCC 100 method.

### METHOD

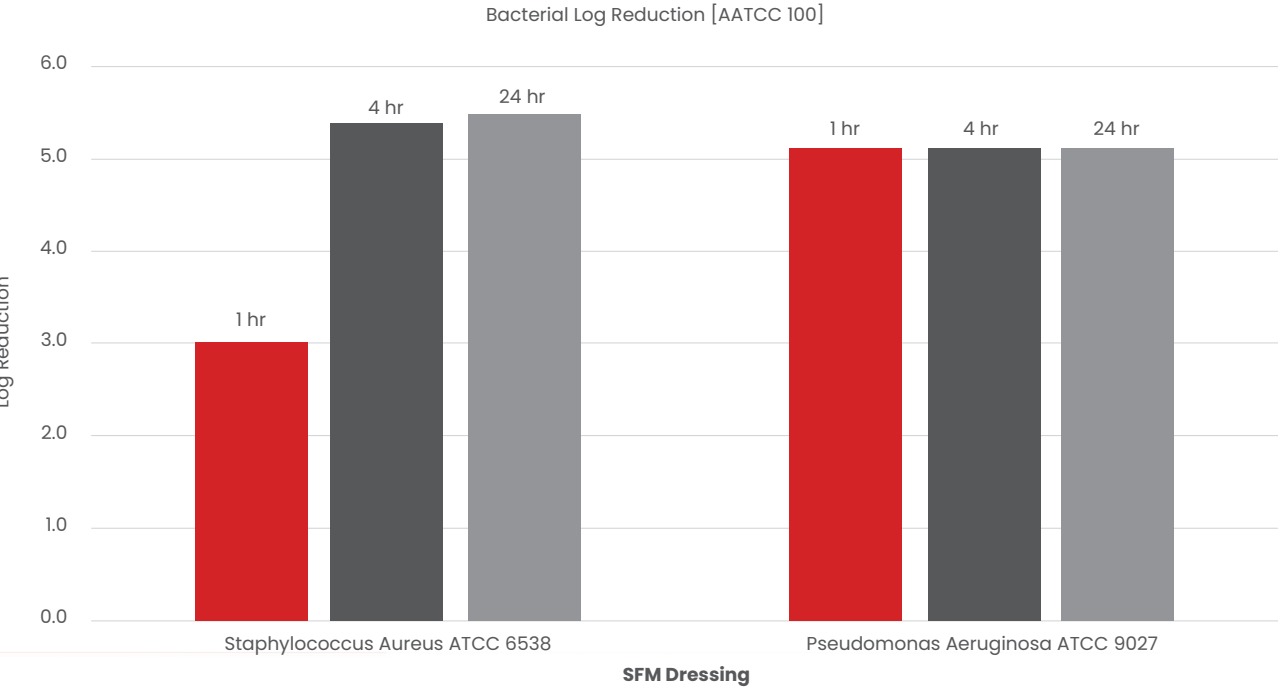
The antimicrobial efficacy of the dressing was assessed with the test method for antibacterial finishes on textile materials (AATCC 100). In the first part of the experiment, the dressings were preconditioned with simulated wound fluid for 6 days, inoculated with bacteria, and then assessed for microorganism reduction at three timepoints 1 hour, 4 hours and 24 hours.

In the second experiment, the preconditioning time was extended to 27-days. The dressings were inoculated, and the bacterial log reduction assessed after 24 hours. In addition, a competitor dressing containing silver was also tested.

### RESULTS

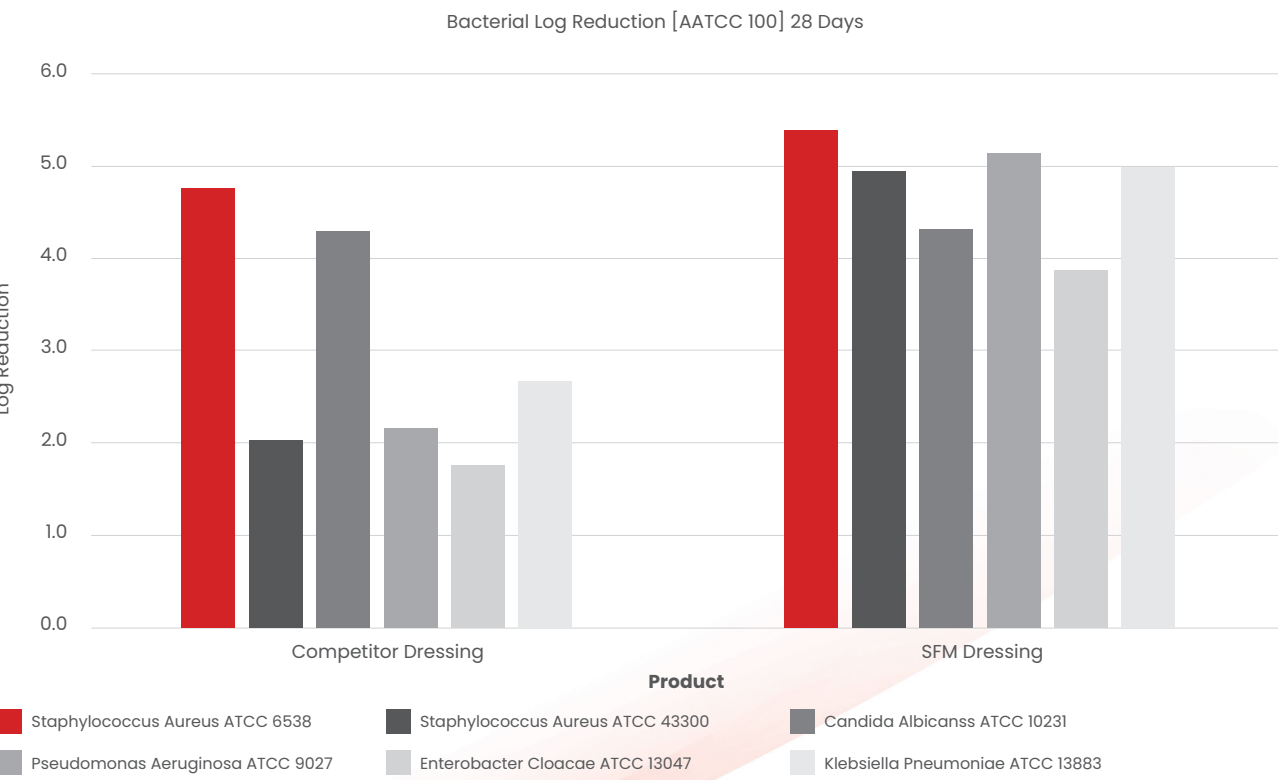
#### Speed of bacterial kill

The new antimicrobial wound dressing produced >4log reduction for P.aeruginosa after only one hour in the AATCC 100 test. For S.aureus >4log reduction was achieved after 4hour.



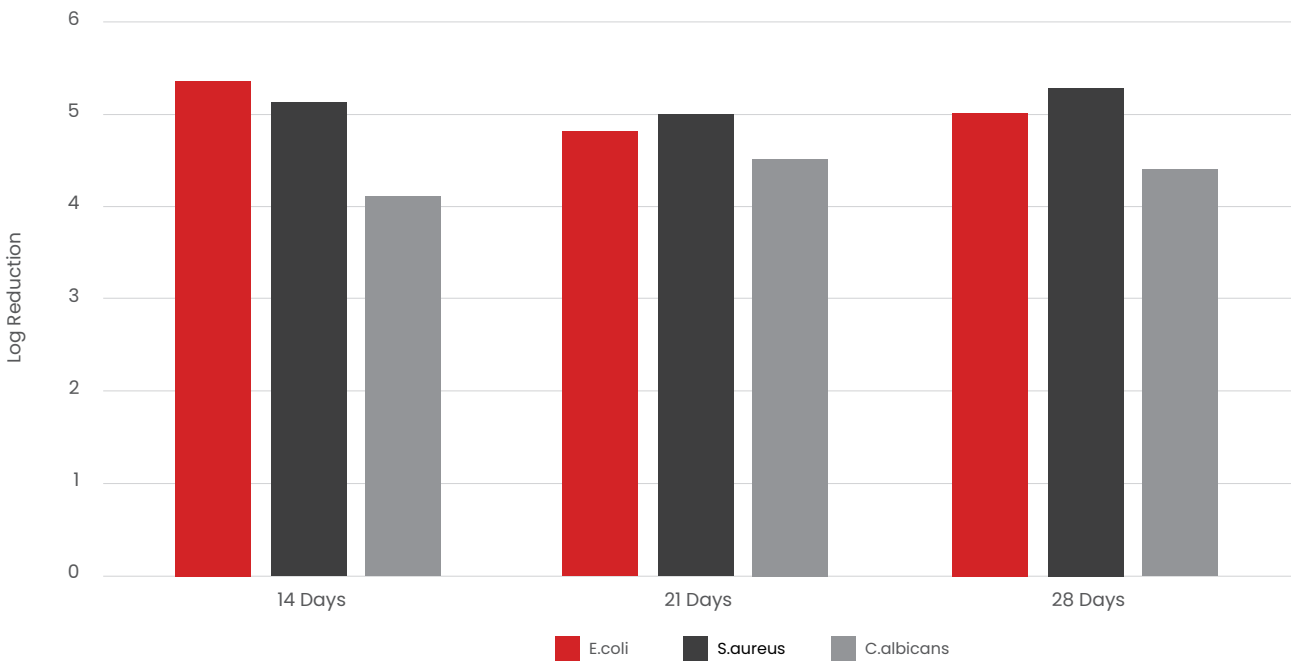
When the new dressing was preconditioned for 27 days the following bacteria and yeast species produced >4log reduction after 24h; S.aureus ATCC 6538, S.aureus ATCC 43300, C.albicans ATCC 10231, P.aeruginosa ATCC 9027, E.cloacae ATCC 13047 and K.pneumoniae ATCC 13883.

A silver-based competitor dressing only achieved >4log at 27 days for S.aureus ATCC 43300 and the yeast C.albicans. The remainder of the bacteria were <4log.



**Figure 1:** Antimicrobial performance of the new dressing containing CMC and PHMB at 28 days.

In addition, the new antimicrobial dressing also demonstrated efficacy at 14 and 21 days.



**Figure 2:** Antimicrobial performance of the new dressing containing CMC and PHMB at 21 and 14-days

### DISCUSSIONS

The results indicate the new SFM antimicrobial wound dressing significantly reduced bacterial infection after 1 hour and achieving almost total kill after 24 hours. With 27-days preconditioning, the antimicrobial dressing produced >4log reduction against a range of gram-positive bacteria, gram-negative bacteria and a yeast species. In comparison, the competitor dressing was only able to achieve a 2-log reduction for many of these species. The new antimicrobial dressing has also demonstrated to be effective at 14 and 21-day timepoints.