

## An *in-vitro* Comparison of a Novel Biofilm Disrupting Technology and PuraPly in Preventing Biofilm Growth

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The Colony Drip Flow Reactor Method was utilized to compare the prevention of the growth of MRSA and *P. aeruginosa* dual species biofilms on an antimicrobial wound matrix (PuraPly) and a biofilm disrupting technology (BlastX) used to protect a graft material. Untreated gauze was used as a control.


The CDFR is a model for growing in vitro biofilms that mimic the chronic wound environment. In these experiments, dual species biofilms composed of methicillin-resistant *Staphylococcus aureus* (MRSA, MBL Strain 10943) and *Pseudomonas aeruginosa* (MBL Strain 215) were grown using a 4-channel CDFR. The membranes were inoculated with 5.1-5.2 log CFU/membrane of *P. aeruginosa* and 6.3-6.6 log CFU/membrane of *S. aureus*. Flow of growth medium (exudate) was then initiated 24 hours. Measurements of Colony Forming Units (CFUs) and Confocal Scanning Electron Microscopy (CSLM) were analyzed to determine the efficacy of each biofilm prevention methodology

In these experiments, the antimicrobial matrix product demonstrated no statistically significant decrease on the biofilm growth as compared to the gauze control. Alternatively, the biofilm disrupting technology demonstrated a large, statistically significant reduction in biofilm growth versus both organisms; 6.81 log vs. MRSA and greater than 8 log vs. *P. aeruginosa*.

### Speaker Biography

Matthew J Regulski is the director of the wound institute of ocean county NJ and Senior partner with ocean county foot and ankle surgical associates. He is also board of directors of the international federation of podiatric educators. He was triple board-certified member. He has been pi on 12 RCT's. he has published multiple articles in peer reviewed journals and authored chapters in surgical texts. He acts as a reviewer for 6 peer reviewed journals and the associate editor for the Journal of Dermatology and Cosmetology. He treats over 6,000 chronic wounds in a year.

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