Antimicrobial Peptide Amphiphile Film Coatings for Medical Products

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Technology description

University of Missouri Office of Technology Management & Industry Relations Non-Confidential Abstract of Invention UM Disclosure No. 16UMC067 Antimicrobial Film Coatings for Medical Products Innovation: This invention consists of novel medical product coatings that harnesses the antimicrobial properties of antimicrobial peptides and can prevent bacterial colonization and subsequent hospital-acquired (nosocomial) infections. The unique method of applying the coating allows for self-assembled films that are robust enough for in vivo use. Background: Nosocomial infections are a significant problem in the healthcare industry as evidenced by the fact that there were an estimated 722,000 cases leading to approximately 75,000 deaths in the United States in 2011. A significant portion of these infections are caused by the use of invasive medical products like endotracheal tubes and catheters. If the surfaces of these products could be modified to prevent bacterial growth, then the incidence of nosocomial infections could be greatly decreased. This technology has solved the issue of the solubility of a series of peptides possessing antimicrobial behavior and capable of inhibiting biofilm development. As a result, an antimicrobial coating consisting of this series of hybrid peptides can resist dilution which provides a consistent, robust solution to the issue of nosocomial infections. Applications: Medical devices and implements, particularly those that are made from hydrophobic materials, such as PVC, polyethylene, PTFE, HDPE, etc.

Advantages

• 8x the concentration of active antimicrobial peptide after first rinse as compared to state of the art peptide coating
• active peptide functions as an immunomodulator that enhances immunity
• Applicable to a wide range of broad sprectrum peptide antibiotics

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