

One step immobilization of antimicrobial peptide on non-conventional surfaces

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Antimicrobial coating on various medical devices or treatments, such as mes, catheter, implant and contact lens, is important issue because it causes cross contamination and spreading of infectious bacteria. To prevent bacterial accumulation on the surface, there have been many efforts about antimicrobial coating using chemicals, nanoparticles, however, their low compatibility and cytotoxicity have been regarded as obstacles for application to medical device coating. On the other hand, natural antimicrobial peptides (AMPs) from amphibians are free from cytotoxicity issue, therefore, immobilization of AMP is suitable for prevention of bacterial accumulation on surfaces. Here, we proposed very simple and efficient AMP immobilization method on non-conventional surfaces. Surface material was coated with p(V4D4) via initiated vapor deposition (iCVD) and AMP with N or C-terminal cysteine residue was immobilized via simple UV radiation. Finally, efficacy of AMP coated surface against *E. coli*, *C. glutamicum* and *S. cerevisiae* was measured by using flow cytometry and the efficacy was higher than 99%.