Antibacterial Coatings

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Since a long time, the bacterial contamination of surfaces, leading to biofilm formation, is a major problem in fields as diverse as medical, food or cosmetics even with preventive hygiene protocols. In order to eliminate or reduce bacterial colonization of surfaces and biofilm formation, many strategies have emerged [1-3]. Among them, is the elaboration of antifouling surfaces based on antiadhesive coatings such as polyethyleneglycol (PEG) [4] or polysaccharide [5] to repel bacteria and prevent their initial adhesion on surfaces which is a prerequisite in the biofilm formation. Another strategy is the covalent (or not) immobilization of antimicrobial compounds, e.g., antibiotics [6], quaternary ammonium [7] or silver [8], to design biocidal coatings able to kill bacteria by release (or not) of the active substances. In this strategy, natural compounds and in particular antimicrobial peptides [9,10] have appeared as promising candidates by limiting emergence of multiresistant bacteria. The last strategy is to disperse an established biofilm by the use of antibiofilm molecules, e.g., enzymes [11] and quorum sensing inhibitory [12]. However, the high resistance of sessile bacteria limits this strategy.

**Keywords** Bacterial contamination; Biofilm; Antibacterial coatings; Antiadhesive coatings; Biocidal coatings; Antimicrobial peptides; Antibiofilm strategies

**References**


