







Special Issue Reprint

Antimicrobial Biomaterials: Recent Progress

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Edited by Helena Felgueiras

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Biomaterials can be used as implantable devices or drug delivery platforms with a significant influence on a patients' quality of life. Indeed, every year a substantial number of new biomaterials and scaffolding systems are engineered and introduced in the biomedical field with increased potential for biomedical uses. However, their long-term use can be threatened by the adhesion and proliferation of microorganisms, which can interact and form biofilms, or the formation of fibrosis, with cytotoxic responses being very common. Pathogenic microorganisms may cause local infection and consequent implant failure; furthermore, they can hinder the delivery of therapeutic molecules by specialized delivery platforms, turning them ineffective. Many alternatives have been proposed over the years to prevent such events, including the use of antiseptics and antibiotics or the physical modification of the biomaterial surface, with the incorporation of biomolecules of interest. From specialized polymers and functional groups to silver and, more recently, antimicrobial peptides and natural extracts, different functionalization/modification techniques have been employed in this fight against pathogenic agents.





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