



Special Issue Reprint

Molecular Mechanisms and Biological Procedures of Biomaterials in Medical Applications

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Biomaterials have emerged as a potentially powerful paradigm in clinical medicine due to their unique physicochemical properties such as topographical cues, charges, etc. Many efforts have been made to explore various avenues to process tailored nanomaterials for medical applications, including regenerative medicine, therapeutic delivery, and additive manufacturing. Intriguingly, many studies have identified the existence of bio–nano interactions, which play important roles in biological procedures. Furthermore, biomaterials with diverse physical and/or chemical characteristics will induce different biological effects. However, their detailed mechanisms are unclear. The translational application of biomaterials for clinical medicine is still in progress. Here, the molecular mechanisms and biological procedures of biomaterials in medical applications include the technologies for processing biomaterials, techniques for characterizing physiochemical properties and analyzing bio–nano interactions, biological behaviors and mechanisms, indications for medical applications etc. This Special Issue of the *Journal of Functional Biomaterials*, entitled “Molecular Mechanisms and Biological Procedures of Biomaterials in Medical Applications”, aimed to collect articles on topics that included, but were not limited to, biological procedures induced by biomaterials, interactions between biomaterials and biological cells, medical applications of biomaterials etc.

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