

Biomaterials Translational – The New Vehicle for Translational Medicine

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Biomaterials research is undoubtedly one of the most exciting research fields of the past three decades. Thousands of papers have been published each year in this interdisciplinary research area, with the contribution of scientists from a variety of research fields, including but not limited to, physical and materials sciences, engineering, biology, and biomedicine. However, a practical world, one may ask the question: *what is the ultimate goal of biomaterials research?* This overarching question has led to the collaboration between a group of scientists and clinicians to launch this new journal – *Biomaterials Translational*. In spite of the complexity and cross-disciplinary nature of biomaterials research, we believe the advancement of innovative biomaterials should ultimately address the emerging needs in translational medicine.

Biomaterials Translational is an international journal publishing research works at the interface of translational medicine and biomaterials science and engineering. The journal will report high-quality, cutting-edge, peer-reviewed papers including original research articles, reviews, viewpoints and comments. Translational medicine is an interdisciplinary field that applies emerging new technologies and sciences to the prevention, diagnosis, and treatment of human disease. Thus, the journal highlights breakthrough discoveries in basic science and clinical application related to the development of biomaterials in biomedicine.

The scope of the journal covers a wide range of physical, biological and chemical sciences that underpin the design of biomaterials and the clinical disciplines in which they are used. Original articles will be considered for publication within, but not limited to, the following domains:

- Investigation of human biology with an emphasis on its application to biomaterials;
- Synthesis, characterization and biomedical potential of metallic, ceramic, polymeric, composite and hybrid biomaterials;
- *In vivo* models and the biology of the host response to increase understanding of novel biomaterials with respect to specific diseases;
- Physical, chemical, biological, pharmaceutical and toxicological features of biomaterials, as well as their short-term and long-term biocompatibility;

- Drug and gene delivery system design, with a focus on application to disease conditions;
- Design of biomaterials for modern diagnosis and therapeutic clinical practice including bioimaging, biosensing, and biotherapy.

In the inaugural issue of this journal, a selection of review and research articles are presented, which nicely reflect the ambition of the journal of *Biomaterials Translational*. Among five review papers, Tamaddon et al.¹ discuss the application of osteochondral scaffolds for the treatment of cartilage and osteochondral defects in the early stage of osteoarthritis; Guo and Lin² present a comprehensive review of the recent development of one-dimensional micro/nanomotors and their applications in translational medicine; Xu and Song³ review the application of degradable synthetic polymers for the regenerative reconstruction of critical-size long bone segmental defects; Yang et al.⁴ summarize how four representative nanoparticles promote the differentiation of mesenchymal stem cells, a workhorse cell type for regenerative medicine; and Tan et al.⁵ review recent progress in the use of hydroxyethyl starch, a biocompatible polysaccharide, to deliver diagnostic and therapeutic agents. In addition, three different biomaterials are reported in three high-quality research papers, covering bioactive glass,⁶ three-dimensional printed composite bone grafts,⁷ and plant virus-incorporated hydrogels.⁸

We hope *Biomaterials Translational* will serve as a bridge to bring basic biomaterials research and successful clinical applications together by espousing the following key measurements: (1) promoting effective dialogues between clinicians and research scientists; (2) advocating innovation and cross-boundary collaborative work; (3) applying appropriate and standardized animal models for *in vivo* studies, and (4) understanding the molecular interactions of biological and synthetic systems. Your support, as a reader or an author, will be critical to the success of our journal and the future of biomaterials research and development.

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