

INJECTABLE BIOLOGICAL SCAFFOLDS FOR MINIMALLY INVASIVE OR NON-INVASIVE IN VIVO TISSUE ENGINEERING IN REGENERATIVE MEDICINE

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ABSTRACT

Biomedical engineering is a relatively new thriving discipline that focuses on the design, development and optimization of medical devices aimed at prognosis, diagnosis, therapy and rehabilitation. Using a highly interdisciplinary approach, in our group we focus on advancing biomedical engineering research and in parallel, guided by ethical considerations and proprietary platform technology, we also attempt technology transfer in prognosis and diagnosis of osteoarthritis, anticancer medical devices, medical devices that control the microbial load, as well as in biotechnology and soft and hard tissue regeneration. Regenerative medicine is currently one of the most important trends in medicine. Its aim is to achieve regeneration of damaged tissues. One important tool in regenerative medicine is tissue engineering, where a combination of appropriately designed scaffolds, growth factors and cells are employed in order to achieve regeneration of damaged tissue. This field has already started producing valuable products in the market, and it has huge potential for growth. We focus on medical devices for minimally invasive in vivo tissue regeneration using natural ingredients of the body to construct injectable scaffolds in situ, combined with designed growth factors for controlled bioactivity and in this presentation, some of our progress in this field will be reported.

KEYWORDS: biomedical engineering, injectable scaffolds, medical devices, in vivo tissue engineering