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Innovative Strategies in Tissue Engineering

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Description:

In spite of intensive investments and investigations carried out in the last decade, many aspects of the stem cell physiology, technology and regulation remain to be fully defined. After the enthusiasm that characterized the first decade of the discovery that when given the right cue, stem cells could repair all the different tissues in the body; it is now time to start a serious and coordinated action to define how to govern the stem cell potential and to exploit it for clinical applications. This can be achieved only with shared research programs involving investigators from all over the world and making the results available to all.

The Disputationes Workshop series (http://disputationes.info) is an international initiative aimed at disseminating stem cell related cutting edge knowledge among scientists, healthcare workers, students and policy makers. The present book gathers together some of the ideas discussed during the third and fourth Disputationes Workshops held in Florence (Italy) and Aalborg (Denmark), respectively. The aim of this book is to preserve those ideas in order to contribute to the general discussion on organ repair and to bolster a fundamental scientific and technological leap forwards the treatment of otherwise incurable diseases.

Keywords: Nanocomposites, iPSC, derivation strategies, cerium dioxide, cardiac precursor cells, hydrogels, ESCs, spermatogonial stem cells, regulatory issues, medical devices, flexible modular platform, automation, cell sheet, animal models, biomaterial development, MSCs, neural disorders, mechanical stimulation, melenoma stem cells, hedgehog signalling