



Documents

Busra, M.F.M.^a , Xian, D.L.J.^b , Lokanathan, Y.^a , Idrus, R.H.^a

Functional bio-based materials for regenerative medicine: From bench to bedside (Part 2)
(2024) *Functional Bio-based Materials for Regenerative Medicine: From Bench to Bedside (Part 2)*, pp. 1-309.

DOI: 10.2174/97898151793301240101

^a Centre for Tissue Engineering and Regenerative Medicine(CTERM), Faculty of Medicine, Universiti Kebangsaan Malaysia, Jalan Yaacob Latif, Bandar Tun Razak, Cheras, Kuala Lumpur, 56000, Malaysia

^b Centre for Tissue Engineering and Regenerative Medicine (CTERM), Faculty of Medicine, Universiti Kebangsaan Malaysia, Cheras, Kuala Lumpur, 56000, Malaysia

Abstract

Functional Bio-based Materials for Regenerative Medicine: From Bench to Bedside explores the use of bio-based materials for the regeneration of tissues and organs. The book presents an edited collection of 28 topics in 2 parts focused on the translation of these materials from laboratory research (the bench) to practical applications in clinical settings (the bedside). Chapter authors highlight the significance of bio-based materials, such as hydrogels, scaffolds, and nanoparticles, in promoting tissue regeneration and wound healing. Topics included in the book include: - the properties of bio-based materials, including biocompatibility, biodegradability, and the ability to mimic the native extracellular matrix. - fabrication techniques and approaches for functional bio-based material design with desired characteristics like mechanical strength and porosity to promote cellular attachment, proliferation, and differentiation. - the incorporation of bioactive molecules, such as growth factors, into bio-based materials to enhance their regenerative potential. - strategies for the controlled release of molecules to create a favorable microenvironment for tissue regeneration. - the challenges and considerations involved in scaling up the production of bio-based materials, ensuring their safety and efficacy, and obtaining regulatory approval for clinical use. Part 2 covers advanced materials and techniques used in tissue engineering. Topics focus on advanced composite materials for 3D scaffolds and the repair of tissues in different organs such as the heart, cornea, bone and ligaments. Materials highlighted in this part include polyamide composites, electrospun nanofibers, and different bio-based hydrogels. Functional Bio-based Materials for Regenerative Medicine: From Bench to Bedside is a valuable reference for researchers in biomedical engineering, cell biology, and regenerative medicine who want to update their knowledge on current developments in the synthesis and application of functional biomaterials. Readership: Medical researchers, orthopedists, rheumatologists, clinicians, rheumatic disease patients. © 2024, Bentham Books imprint. All rights reserved.

Correspondence Address

Busra M.F.M.; Centre for Tissue Engineering and Regenerative Medicine(CTERM), Jalan Yaacob Latif, Bandar Tun Razak, Malaysia

Publisher: Bentham Science Publishers Ltd.

ISBN: 9789815179330; 9789815179347

Language of Original Document: English

Abbreviated Source Title: Funct. Bio-based Mater. for Regen. Med.: From Bench to Bedside (Part 2)

2-s2.0-85202699026

Document Type: Book

Publication Stage: Final

Source: Scopus

Copyright © 2025 Elsevier B.V. All rights reserved. Scopus® is a registered trademark of Elsevier B.V.