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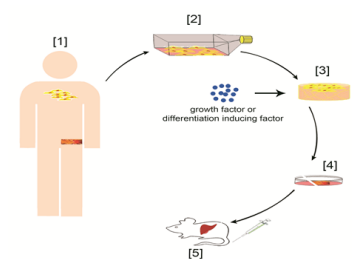


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Hepatic tissue engineering and regenerative medicine

Tissue engineering proves to be a precarious therapy for hepatic failure patients. In spite of the massive obstacles offered by the intricacy of the liver's structure and function, improvements in liver physiology, stem cell biology and reprogramming and the engineering of tissues and machines are speeding the evolution of stem cell-based therapies for curing liver diseases. The expression hepatic tissue engineering briefs one of the maximum targets of novel biotechnology: The potential of proliferation the functions of the liver for the sake to cure liver failures and, ultimately, may originate a well workable organ to be implanted or used as an apparatus situated outside the body. For effective tissue regeneration, the cells constituting the tissues to be regenerated are needed. Bone marrow Mesenchymal Stem Cells (MSCs) are hopeful nominees for cell therapy and tissue engineering. A great complication experienced with stem cell therapies has been the failure of injected cells to imbed to objective tissues. The application of nanotechnology to stem cell biology would be able to finesse those defies. These combinations allow nanotechnology to engineer scaffolds with various countenances to control stem cell destiny resolutions. Fabrication of nano-fibrous scaffolds onto which stem cells can adhere and spread, forming a niche-like microenvironment which can drive stem cells to go ahead to repair injured tissues. In this manuscript, existing and emergent tactic based on stem cells in the domain of liver tissue engineering is offered for precise implementation. The combination of stem cells and tissue engineering launches novel standpoints in tissue regeneration for stem cell therapy because of the probable to monitor stem cell attitude with the features of the engineered scaffold milieu. Presently, hepatogenic differentiation of stem cells has produced confidence and troth for use of these cells in hepatic tissue engineering.



Biography

Laila M Montaser is the Head of Stem Cell, Regenerative Medicine, Tissue Engineering & Nanotechnology (SRTN) Group, Professor of Clinical Pathology at the School of Medicine in Shebin El-Kom, Menoufia, Egypt. She also serves as the Head, Founder of Clinical Pathology Department, School of Medicine, Menoufia University, Egypt. She has received her undergraduate degree at School of Medicine, Alexandria University, Egypt and her MSc and MD degrees at School of Medicine, Tanta University. She is the President, Chief Scientist, Founder of Stem Cell, Regenerative Medicine, Tissue Engineering & Nanotechnology (SRTN) Group (Inaugural holder of the SRTN Chair). She was appointed as an Editorial Board Member/peer Reviewer of many international journals.

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