

Stem Cells- antidote to Humankind **Sahar Mamdouh Elkholy***

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Stem cells are undifferentiated cells that can turn into specific cells, as the body needs them. Cells in the body have specific purposes, but stem cells are cells that do not yet have a specific role and can become almost any cell that is required. Tissue engineering or medicine engineering could be a field of study that use a combination of cells, cell engineering techniques, methodology and materials, at the side of appropriate organic chemistry and chemistry factors so as to revive or improve or maintain, or replace the biological tissues. It's a promising multidisciplinary space with potentials amounting to regeneration of recent tissues and organs. This approach chiefly involves the necessity of 3 essential parts they are: stem cells, growth factors and scaffolds Dental pulp stem cells square measure regarded with special attention thanks to their illustration as a supply of promptly accessible stem cells. Their multipotential capability to differentiate into massive sort of tissues and high will be explained by their neural crest origin. This issue accounts to their support in attainable applications on the far side that of the scope of simply oral tissues. There square measure proposal of a spread of isolation, culturing and cryopreservation protocols that square measure evidenced to have an effect on cell proliferation rate, phenotype, and differentiation capability. so as to clinically perform therapies on the premise of dental pulp cells development of recent associate degreed advanced biomaterials designed and generated appropriate for regenerative functions square measure needed so as to act as scaffolds for correct handling an carrying also as implantation of those stem cells into the patients. nowadays the event of xeno-free culture media, that could be a cell culture media within which no parts or ingredient that comes from any another species apart from the intendant species is gift. Xeno-free culture for human cells wouldn't have any parts derived from the other species apart from humans however it might and should have used few or all of its part materials derived from human cells. It's developed as there's associate degree rising necessity as a attainable means that for standardization of things effecting the expansion of somatic cell and to avoid risk of rejection by the host body of those stem cells supposed for implantation and so as to boost safety and reliability. Dental pulp is presently enjoying the role of promising supply of stem cells, because it contains many-sided differentiation capability and another advantage of dental pulp somatic cell square measure once routine teeth extraction these cell will be obtained with noninvasive assortment.. With the standardization of culturing also as isolation protocols by following GMP and replacement of all parts that square measure

from animal origin. Identification, development and incorporation of specific marker cell are essential for relevancy of those stem cells in patients. For the right maintenance and revitalization of cells standardized cryopreservation techniques and media is to be established. . The creation of organic phenomenon allogeneic bio banks would provide associate degree innovative and enticing strategy to ensure economical storage for future treatments overcoming medicine barriers. The booming development of a therapeutic drug for its use in tissue engineering involves combining stem cells, scaffolds and communication molecules. During this context, the look of associate degree acceptable bioactive material involves an improved understanding of the molecular mechanisms concerned in SC-biomaterials interactions. Three-dimensional bio printing is associate degree arising plan with a promising future that's currently yielding empowering results. Indeed, 3D bio printing permits collecting of redid and sophisticated high builds. In any case, scarcely any investigations are directed that consolidate hDPSCs and 3D bio printing ways, despite the actual fact that this technique needs straightforward to-grow and non-immunogenic cells that square measure promptly accessible. In outline, DPSC treatment addresses an exquisite new methodology for the expert administration of infection. The in vitro and in vivo consequences of the work evaluated here facilitate the conductivity of additional clinical preliminaries to beat this constraints and backing the clinical utilization of DPSCs below body rules.