conferenceseries.com

5th International summit on

MEDICAL BIOLOGY & BIOENGINEERING &

8th International Conference & Exhibition on

BIOSENSORS AND BIOELECTRONICS

September 27-28, 2017 Chicago, USA

Differentiation potential of menstrual blood stem cell (MensSCs) to hepatocyte-liked cell on three dimensional nanofibers scaffolds

Farnaz Sani Shiraz University, Iran

 $\mathbf{M}^{\text{enstrual blood stem cells (MensSCs) have enormous potential as a source for cell replacement therapy. Since there is a major concern in utilization of nanofibers in tissue engineering of stem cells, we examined the potential of MensSCs to differentiate into hepatocytes, using different protocols and compare cells, with two-dimensional (2D) and three-dimensional (3D) culture systems. Cell characterization experiments of MensSCs have demonstrated that they are multipotent stem cells similar to mesenchymal stem cells, which can successfully differentiate into osteogenic and adipogenic lineages. The efficiency of the cells on the scaffold was appraised by scanning electron microscopy (SEM), MTT assay, and hematoxylin and eosin (H and E) staining. Thereafter, the differentiation protocols were developed by hepatocyte growth factor (HGF) and oncostatin M (OSM) with serum-supplemented or serum-free culture media up to 30 days. Immunofluorescence analysis and ELISA assay revealed the expression of albumin (ALB) in differentiated cells. Hepatocyte-like cells expressed liver-specific gene such as albumin(ALB), <math>\alpha$ -fetoprotein (AFP), tyrosine aminotransferase (TAT) and cytochrome P450 subunit 7a1 (Cyp7a1) at mRNA levels. In conclusion, the evidences presented in this study show that the nanofiber scaffold and MensSCs may provide a source of differentiated cells for treatment of liver diseases.

sani_farnaz@yahoo.com