J Biotechnol Biomater 2015, 5:2
http://dx.doi.org/10.4172/2155-9597.C1.014

OMICS International
conferenceseries.com

9th Biotechnology Congress

August 31-September 02, 2015 Orlando,Florida, USA

Role of micro RNA-21 expression in early diagnosis and follow up of cancer of uterine cervix

Parisa Enteghali
Islamic Azad University, Iran

Cancer of uterine cervix is one of the most common malignancies in women worldwide. Early detection of this malignancy is its greatest value, as it can be completely cured if diagnosed at early stages. Micro RNAs are small non-coding RNAs. Mir-21 has been demonstrated to be present in many types of cancer cells, and previous studies have shown that it is over-expressed in cervical cancer tissue. The purpose of this study was to identify Mir-21 in the plasma of patients with cancer of cervix, in order to find a sensitive and cost effective method for detection of cancer of cervix at early stages. Plasma samples of 32 patients and 10 healthy volunteers were collected and RNA was extracted. The presence of Mir-21 in the samples was checked by Real Time PCR. Primers were designed by stem-loop PCR technique. Presence of Mir-21 in the plasma was evaluated by qualification PCR and RT-Real Time PCR, which was used to measure expression of Mir-21 in plasma. These results provide clinical evidence that Mir-21 can be found in the plasma of patients in different stages of cancer of cervix. While it cannot be found in the plasma of healthy individuals, our study showed that in patients with cancer of cervix, Mir-21 can be detected during, and after the completion of the treatment. Our results showed that Mir-21 was expressed in SCC of cervix and the level of its expression correlated with the stage.

p_enteghali@yahoo.com

Possible angiogenic potential of increased osmolarity on chondrogenic differentiation of adipose-derived on mesenchymal stem cells

Sepideh Alinezhad-Bermi[1,2], **Hana Hanaee Ahvaz**[2], **Shiva Irani**[1] and **Mahboubeh Kabiri**[3]
[1]Islamic Azad University, Iran
[2]Shahid Beheshti University of Medical Sciences, Iran
[3]University of Tehran, Iran

Due to limited blood supply, cartilage has an inadequate repair post injury. Despite the advantage of autologous chondrocytes implantation, this strategy suffers from donor site morbidity and inadequate cell supply. Chondrogenic differentiation of mesenchymal stem cells (MSC) can be used instead to overcome such limitations. Among the reported chondrogenic conditions, application of high osmolarity has been used increasingly to enhance chondrogenic differentiation potential through mimicking the osmotic character of the normal tissue. The osmolarity of the normal cartilage tissue is significantly higher than that of other tissues. For that reason, increased osmolarity is considered as a cue for further improving chondrogenic differentiation yield. On the other hand, high osmolarity is one of the key regulators of angiogenesis induction. As angiogenesis in cartilage is an important index of the cartilage related diseases monitoring the possible angiogenic potential of hypertension on chondrogenic differentiation is of profound importance. Therefore, the aim of this study was to investigate the angiogenic effects of osmolarity on adipose derived MSC chondrogenesis. MSCs were differentiated under different hyper-osmotic conditions using NaCl. The angiogenesis induction potential was evaluated by measuring the VEGF secretion and VEGFR2 activation using ELISA and western blot techniques respectively. The effect of hyper-osmolarity on MSC growth and proliferation was evaluated by MTT assay. Changes in gene expression levels for cartilage specific markers (Collagen II, Aggrecan, Versican and Sox9) were determined by real time PCR. Also chondrogenesis was assessed by measuring secreted glycosaminoglycan in the medium or that kept in cell ECM. The results will determine the possible effect of high osmolarity on angiogenesis and therefore be illustrative for wise application of appropriate osmolarity in chondrogenesis differentiation.

sepideh_alinezhad@yahoo.com