KRW2016

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1st Allied Health Scientific Colloquium (AHSC) 2016

in conjunction with

"Enhancing Academic and Research Quality"

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Kulliyyah of Allied Health Sciences
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PROGRAMME & ABSTRACT BOOK

APPRECIATION

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Establishment of Growth Kinetics Profile and Measurement of Sulphated Glycosaminoglycans (sGAG) Production in Monolayer Cultured Chondrocytes Following Qur'anic Recitation Exposure

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ABSTRACT

Objectives/Research Problem: Cartilage is an avascular tissue made of one cell type only which is the chondrocyte. Due to the low mitotic property, the chondrocytes have very limited self-repair capacity. As a result, once the cartilage is injured and left untreated, degeneration changes will precede ageing and can be progressive. Limitation in the currently available treatments is noted. Seeking alternative ways to facilitate the cartilage repair and regeneration have become crucial. This study aims to identify the potential effects of the Qur'anic recitation, particularly Surah Al-Fatihah on the sGAG production in the monolayer cultured chondrocytes derived from rabbit articular cartilage.

Materials and Method: A cellular model based on a serially cultured and expanded chondrocytes is established in vitro and divided into four groups. The first group is exposed to the recitation of Surah Al-Fatihah. The second and third groups are exposed to the recitation of Arabic poem and Western poem respectively. The fourth group is not exposed to any sound and serves as control. Any significant changes are recorded and presented as photomicrographs. Growth kinetics assessment is performed to study the cell proliferation activities within each group. After reaching 80-90% confluency, the cells are harvested and pelleted through centrifugation step. The cell pellet is subjected to sGAG assay at different passages (P0, P1, P2, and P3).

Results and Discussion: The cells exposed to Surah Al-Fatihah is expected to increase the proliferation and sGAG production of the chondrocytes better than the control group as well as the cells exposed to Arabic and Western poem recitation.

Conclusion: Initial findings suggest that the Qur'anic recitation promotes cells proliferation and sGAG production. The Qur'anic recitation may serve as one of the potential signalling factors in tissue engineering studies and facilitate for cartilage repair and regeneration.

KEYWORDS: Chondrocytes, Tissue Engineering, Qur'anic Recitation, Growth Kinetics Profile, Sulphated Glycosaminoglycans (sGAG)

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