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Editorial

Susceptibility of Osteogenesis of Human Embryonic Stem Cell-Derived Mesenchymal Progenitors within Collagen Microspheres

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EDITORIAL NOTE

The Journal of Cell Science & Therapy (JCEST) is an academic journal providing an opportunity to researchers and scientists to explore the advanced and latest research developments in the field of Cell science and related disciplines. The Journal is of highest standards in the terms of quality. The Cell Science & Therapy is an open access and peer- reviewed international journal. The journal strives to publish and get a worthy impact factor by quick visibility through its open access guiding principle for the world class research work. The journal is dedicated to providing the advancements and dissemination of the scientific knowledge concerning to cell science and also of related academic disciplines. Among the cell science journals list the journal of Cell Science & Therapy strives to have a good reach to the researchers and also to the scientific community. In this issue some of the recent and impactful research articles that were published by the journal will be discussed.

The susceptibility of osteogenesis of human embryonic stem cell-derived mesenchymal progenitors within collagen microspheres has been done in this study. Shariatzadeh et al. [1] reported their research work wherein, the study investigates the osteogenic effect of mechanical stimulations on soft cellular microspheres loaded with human embryonic stem cell derived mesenchymal progenitors (hES- MPs) when subjected to dynamic loading and in the absence of chemical stimulation. Microspheres were produced by gelation of bovine collagen type I with 1000 to 2000 hES-MP cells seeded per droplet. Four loading conditions were studied: (1) 10% constant strain was applied by a Bose biodynamic bioreactor for 15 min/day or 40 min/day for 5 or 10 days respectively; (2) 10% adjusted strain was applied (subtraction of polydimethylsiloxane (PDMS) plastic elongation from global strain) using Bose biodynamic bioreactor for the same 4 duration/conditions as in the constant strain pro. tocol.

The results indicate that applying mechanical stimulation to hES-MPs/collagen microspheres induced osteogenic differentiation of cells when the loading protocol was adjusted. Alkaline phosphatase activity of samples in the adjusted loading protocol increased significantly on day 14 whilst, the deposited minerals, matrix reorganisation and alignment of collagen fibres enhanced from day 21 post encapsulation onward. Application of cyclic loading to 3D culture of hES-MP cells can be used as a model to regulate mechanostimulation and linage differentiation in vitro.

In order to check the expression of lncRNA ZFAS1 in cervical cancer and its correlation with the prognosis and chemosensitivity, Chen et al. [2] had conducted a study where the expression of ZFAS1 in cervical cancer tissues and cell lines were detected by qRT-PCR. Cervical cancer CaSki and Hela cell lines were transfected to be divided into Blank, siR-Control, and siR-ZFAS1 groups. MTT, wound- healing, and Transwell assays were used to evaluate cell biological function. Cisplatin with different concentrations was used to treat cells in different transfection groups, and MTT assay was applied to detected cell growth inhibition rate and the half-inhibitory concentration (IC50) of cisplatin was measured. Cell apoptosis was determined by flow cytometry. A xenograft mouse model was conducted to investigate the effects of siR-ZFAS1 on the chemosensitivity to cisplatin. LncRNA ZFAS1 was up-regulated in cervical cancer tissues and its high expression indicated a poor prognosis. Silencing ZFAS1 may inhibit cell proliferation, migration and invasion, and enhance the cisplatin chemosensitivity.

These research articles published by the journal have immense relevance and significance in to check the osteogenesis of human embryonic stem cell and expression of lncRNA ZFAS1 in cervical cancer and its correlation with the prognosis and chemosensitivity.

REFERENCES

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