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Proliferation of human endometrial stem cells are experimented by CO-culture of mouse fallopian stem cells

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Introduction: Endometrial stem cells like other adult stem cells are rare undifferentiated cells present in most adult tissue. Concerning to the valuable application of human endometrial stem cells in clinic and tissue engineering, the proliferation of human endometrial stem cells is going to be one of the important issues among researcher. Recently, it has been reported that growth factors like leukemia inhibitory factor in medium culture of adult stem cells is necessary to maintain MSC self-renewal and undifferentiated. However, the effect of leukemia inhibitory factor on proliferation and pluripotency of human endometrial stem cells, which have very important, has not been explored. In this study we tried to investigate the effects of LIF on ESCs proliferation and pluripotency.

Materials and Methods: The endometrial cells were collected from the uterus of hysterectomies samples. Then the isolated cells were cultured in the DMEM+F12 with LIF. In experimental group study 10 ng/ml LIF was added to culture and at the end of forth subculture and after treatment with LIF the CD90 positive cells were evaluated using flow cytometry. The proliferation rate of both experimental study and control

group using MTT assay were done. The expression of Nanog, Oct4, PCNA and LIFr genes was evaluated using real time-PCR in high proliferation are (LIF treated) group.

Results: The proliferation rate of treated and control groups were $1/61 \pm 0/06$ and $1/1 \pm 0/01$. The rate of CD90 positive cells before treatment with LIF was %94 ($P < 0.05$) and after treatment was %98 ($P < 0.05$). The expression rate of all target genes to housekeeping was higher in LIF treated group than other group ($P < 0.05$).

Conclusion: 10 ng/ml LIF in medium culture has a great impact on proliferation and pluripotency of human endometrial stem cells LIF also increased the CD90 positive endometrial stem cells and the expression of Oct4, Nanog, PCNA and LIFr. Co-cultured groups have no significance effect on proliferation of endometrial stem cells

Speaker Biography

Shokria Ehsani is a head of anatomy department in Ghalib University, Afghanistan and she has many publications in the international journals.

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