

عنوان مقاله:

The Influence of Chemical Stimuli of Estrogen on Neurofilament Gene Expression in Endometrial Stem Cells

محل انتشار:

بیست و یکمین کنگره پزشکی تولید مثل و شانزدهمین کنگره زیست شناسی و فناوری سلول های بنیادی (سال: 1399)

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خلاصه مقاله:

Objective: For treatment of neurological injuries, targeted stem cells differentiation into neural phenotypes could be a po-tential therapeutic approach. Endometrial stem cells (EnSCs) represent a promising cell source for neural tissue engineering with their ability to differentiate into various neural cell types. Estrogen is a hormone that has robust effects on central nerv-ous system (CNS) signal transduction pathways. This hormone provides the induction of growth factors, which are important for neuronal differentiation, and prominent neuro-protection in CNS. The aim of this study is the investigation of estrogen effect on neurofilament (NF-H) gene expression in neural-like cells differentiated from EnSCs. **Materials and Methods:** Human EnSCs were isolated and characterized in passage ۳ using flow cytometry, adipogenic, and osteogenic differentiation. In order to neural differentia-tion, cells were exposed to estrogen, epidermal growth factor, fibroblast growth factor-۲, retinoic acid, B۲۷ and ITS supple-ments for ۱۴ days. After neural differentiation, the expression level of NF-H, as a neural-specific marker, was quantified using immunofluorescence and quantitative Real-Time PCR (qRT-PCR). **Results:** After ۱۴ days of neural induction, qRT-PCR results showed up-regulation of this neural-specific marker in the mRNA level. Also, immunofluorescence images showed the high expression of NF-H at the level of protein, compared to undifferentiated human EnSCs as the control group. **Conclusion:** Estrogen is an important female sex hormone that can affect neuronal differentiation. According to our findings, hEnSCs can be a potential and approachable cell source for enhancing neural regeneration and tissue engineering. Further-more, our data confirmed the influence of estrogen on the ex-pression of NF-H, as a neural

کلمات کلیدی:

Human Endometrial Stem Cells, Neural-Like Cells , Differentiation, Neurofilament (NF-H) ,Estrogen

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