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Poster Presentations

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The evaluation of retinoic acid and estrogen on mouse induced pluripotent stem cells differentiation into female germ cells

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Background: Using stem cells is possible for treatment of patients with genetics or induced abnormalities and diseases such as non-obstructive azoospermia. Today, more attention has been paid to self-induced induced pluripotent stem cells (iPSCs).

Objective: The aim of this study was to investigate the role of estrogen with retinoic acid on the differentiation of mouse iPSCs towards female germ cells.

Materials and Methods: In this study, mouse embryonic fibroblast cells were extracted as feeding

cells and inactivated. The target groups such as *Stra8*, *Stella*, *Ddx4* and *GDF9* were adjusted for estrogen with retinoic acid at intervals of days 0, 4, and 7. Expression of these genes was performed by Real Time PCR technique.

Results: In this study, the expression of genes such as *Stra8*, *Stella*, *Ddx4* and *GDF9* was evaluated. Real-time data showed that the expression of these genes increased in estrogen group on day 4 of embryoid bodies culture, while the differences were not significant on other days.

Conclusion: It is very difficult to control the differentiation of mouse induced pluripotent stem cells (miPSCs) and the role of estrogen was carefully investigated in vitro in this study. Evidence suggests that female germ cells can differentiate from miPSCs in vitro. Treatment of cells with estrogen showed a greater effect on the differentiation process on day 4.

Key words: Differentiation, Mouse induced pluripotent stem cells, Female germ cells, Estrogen, Retinoic Acid.