عنوان مقاله:

The effect of sodium selenite on apoptotic gene expression and development of in vitro cultured mouse oocytes in comparison with in vivo obtained oocytes

محل انتشار:

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خلاصه مقاله:

In vitro maturation (IVM) of oocytes is widely used in assisted reproduction technologies. The present study aimed to improve the in vitro oocyte maturation and its development through enriching the culture media with sodium selenite (SS). Moreover, the effects of SS on the expression of the oocytes apoptosis-related genes were assessed. In this study, male and female NMRI mice were used and after collecting their germinal vesicle (GV) oocytes, they were cultured with SS (experimental group) and without SS (control group). Collected metaphase II oocytes (MII) from the fallopian tube were considered as in vivo group.After in vitro culture, the oocytes were assessed in terms of nuclear maturation. The MII oocytes were inseminated and the development was examined until the blastocyst stage. Also, oocytes were subjected to the molecular analysis for evaluating the expression of BAX, BCL۲, P۵۳, and BAD genes using the real-time RT-PCR. The maturation rate was significantly increased in the SS supplemented group compared to the control one. The developmental rate of the embryos was significantly higher for both of the in vivo and SS supplemented groups rather than the control one, however, no significant difference was seen between these rates of the experimental and in vivo groups. Real-time RT-PCR did not show any significant differences in the expression of the apoptosis-related genes for all of the studied groups. The p۵۳ gene was not expressed in any of groups. Sodium selenite improved the oocyte developmental competence but did not change the expression of the apoptosis-related genes in MII oocytes.

کلمات کلیدی:

apoptosis genes, Germinal vesicle oocytes, In vitro maturation, Sodium selenite

لینک ثابت مقاله در پایگاه سیویلیکا: