

Impact of Prunus cerasus on PGR and HAS2 in cumulus cells and fertility outcome

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Abstract

Purpose: Cumulus cells have a critical role in normal oocyte development and fertilization. Prunus cerasus is an anthocyanin rich berry and performs strong antioxidant activity. The present study set to determine if Prunus cerasus can affect expression of HAS2 (hyaluronan synthase 2) and progesterone receptor in Cumulus cells and its consequences outcome of the in vitro fertilization.

Methods: 60 female and 15 male adult mice were used for mating and IVF (in vitro fertilization). Prunus cerasus extraction was added to the diet of female mice for 30 days. Ovulation induction and oocytes collection were done as routine. The cumulus cells were dissected apart, and the expression of progesterone receptor and HAS2 was detected using RT-PCR (real-time polymerase chain reaction). Fertilization rate was evaluated by IVF. All data were analyzed using t-test.

Results: Data was showed that expression of progesterone receptor and HAS2 in cumulus cells of mice that received prunus cerasus increased. Moreover, oocyte fertilization rate also increased significantly.

Conclusion: Prunus cerasus as an antioxidant natural can become an important medication for improving oocyte quality and opening new opportunities for infertility treatment. It is concluded that Prunus cerasus consumption could improve fertility rate by increasing progesterone receptor and HAS2 activity in cumulus cells.

Keywords: Cumulus cells, HAS2, Infertility, PGR, Prunus cerasus