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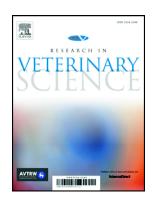
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Genistein affects proliferation and migration of bovine oviductal epithelial cells

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Abstract

Genistein is one of the most abundant isoflavones in soybean. This molecule induces cell cycle

arrest and apoptosis in different normal and cancer cells. Genistein has been of considerable

interest due to its adverse effects on bovine reproduction, altering estrous cycle, implantation

and fetal development and producing subfertility or infertility.

The objective of this work was to study the effects of genistein on the expression of selected

genes involved in the regulation of cell cycle and apoptosis. Primary cultures of bovine oviductal

epithelial cells (BOEC) were treated with different genistein concentrations (0.2, 2 and 10 µM) to

analyze CYCLIN B1, BCL-2 and BAX gene expression by Real-time RT-PCR. Results showed

that genistein down-regulated CYCLIN B1 expression, affecting cell cycle progression, and

caused a decrease in the BCL-2/BAX ratio starting at 2 µM of genistein. In addition, in order to

determine if genistein affects BOEC migration, in vitro wound healing assays were performed. A

significant reduction in cell migration after 12 h of culture was observed at both 0.2 and 10 µM

genistein concentrations. Also, in the presence of genistein the percentage of mitotic cells

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