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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