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## CHANGES IN DNA INTEGRITY AND GENE EXPRESSION IN OVARIAN FOLLICULAR CELLS OF LIPOPOLYSACCHARIDE-TREATED FEMALE MICE

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### Abstract

Background: Lipopolysaccharide (LPS), the endotoxin of gram-negative bacteria, can impair female reproductive function. However, there is a little information about genotoxic stress in ovarian follicular cells as well as about the changes in oocyte developmental potential under endotoxemia. So the aim of our study was to investigate *in vitro* oocyte maturation, the DNA damage and expression of some developmental competence-related genes in follicular cells of mice treated with LPS.

Methods: LPS (3 mg/kg) was intraperitoneally injected into the mice for 24 h, and *in vitro* maturation of mouse oocyte was determined. The expression levels of genes in cumulus cells were detected by reverse transcriptase polymerase chain reaction. DNA damage in granulosa cells was assessed by the alkaline comet assay.

Results: LPS injection caused an impairment of oocyte maturation *in vitro*: the percentage of oocytes reaching metaphase I and metaphase II decreased markedly compared to vehicle control mice. At the same time we observed strong DNA damage in granulosa cells of LPS-treated

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