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JOURNAL ARTICLE

Mild hypothermia induces apoptosis in rat testis at specific stages of the seminiferous epithelium

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This study was designed to determine the effects of short episodes of mild hypothermia on cell apoptosis in the testis of the adult rat. Apoptosis was assessed by in situ DNA 3'-end labeling in the testes from rats killed 2 hours after cooling (10 degrees C for 30 minutes), quantitated, and compared with spontaneous apoptosis found in control animals. A significantly increased number of dying germ cells appeared after cold treatment at specific stages (stage XIV, $P < 0.0001$; stage XII, $P < 0.001$) of the seminiferous epithelium, mainly due to dying primary metaphasic spermatocytes ($P < 0.0001$), followed by secondary interphase spermatocytes ($P < 0.001$), and A2 spermatogonia ($P < 0.05$). The highly specific effect of mild hypothermia on germ cell apoptosis suggests that the process is tightly regulated.

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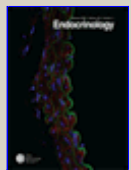
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