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Steroidogenic enzymes, their products and sex steroid receptors during testis development and spermatogenesis in the domestic cat (*Felis catus*)

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Highlights

- domestic cat testicular E2 synthesis starts at puberty in spermatogenic cells
- metabolic conversion of T and estrogens increases with testis weight after puberty
- domestic cat testis is receptive for T, E2 and P4
- P4-receptors localization indicates diverse P4-functions

1. Abstract

In the present study we comprehensively characterize intratesticular sex steroid production, metabolism and receptors in the domestic cat to elucidate the role of testosterone, estradiol and progesterone in testis development, steroid synthesis and spermatogenesis. There is a great demand for new concepts of fertility control in domestic (feral) cats and wild felids. The acquired knowledge will help to understand the regulation of spermatogenesis in felids, and may reveal new target points for male contraception.

Progesterone and androgens are produced throughout all stages of testicular development; their synthesizing enzymes are mainly expressed in Leydig cells, and to a much lesser extent also in tubular cells. Aromatase (CYP19A1), the estrogen synthesizing enzyme, is only present in the tubuli and is first detectable in spermatocytes and round spermatids at

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