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# DNA Replication and Germ Cell Apoptosis During Spermatogenesis in the Cat

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Stages at which DNA synthesis and germ cell death take place have recently been found to be equivalent in rabbits and rats. Preservation of the timing of these processes in different orders of mammals indicates that this timing may be crucial for testis cell biology. Since there is no previous study on either germ cell proliferation or apoptosis in upper mammals, an analysis of DNA replication (by bromodeoxyuridine labeling) and of the location of apoptotic germ cells (by the TUNEL assay) has been performed in 3 young adult cats. Our observations indicated that in this animal, spermatogonial DNA synthesis occurs at stages V (at which point the first generation of replicating spermatogonia appears, together with replicating preleptotene spermatocytes), early VII, VIII, and early I, II, and IV. Apoptosis of both spermatogonia and spermatocytes was located mostly at stages early I, early VI, early VII, and VIII. Interestingly, DNA synthesis and germ cell death were found to occur at the same stages of the spermatogenic cycle (that is, to occur at the same specific stages of development) as those reported for the rabbit and small rodents.

**Key words:** Spermatogonia, spermatocytes, spermatogenic stages, DNA synthesis, programmed cell death

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