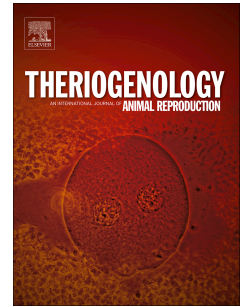


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Characteristics and fertility of domestic cat epididymal spermatozoa cryopreserved with two different freezing media

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1 Characteristics and fertility of domestic cat epididymal spermatozoa cryopreserved with two
2 different freezing media

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13 ABSTRACT

14 The study represents a comparison of cryopreservation of domestic cat epididymal spermatozoa
15 with two commercially available freezing media: CaniPlus Freeze (CPF) and SpermFreeze (SF).
16 The viability of nonfrozen spermatozoa evaluated by the VitalScreen test was $68.7 \pm 3.0\%$. These
17 figures were lower for the frozen-thawed spermatozoa: $51.2 \pm 6.3\%$ for CPF group and $54.4 \pm 3.1\%$
18 for SF group. The motility of nonfrozen spermatozoa was $57.2 \pm 4.5\%$. These figures were
19 reduced in both frozen-thawed groups; however, there was no significant difference in these
20 parameters between CPF ($30.8 \pm 7.1\%$) and SF ($27.4 \pm 8.1\%$) groups. The percentage of
21 nonprogressively moving motile spermatozoa after freezing-thawing was decreased in both
22 frozen-thawed groups (23.5 ± 5.9 and 12.0 ± 2.4 for CPF and SF frozen correspondingly) as
23 compared with nonfrozen controls ($42.1 \pm 4.1\%$). Morphology of spermatozoa was assessed by
24 light microscopy. The mean percentages of normal spermatozoa were $28.5 \pm 4.1\%$ for nonfrozen
25 group, $26.0 \pm 2.3\%$ for CPF frozen group, and $23.9 \pm 1.9\%$ for SF frozen group. The most frequent
26 anomalies in all the three groups were flagella and combined defects. In vitro fertilization (IVF)
27 of domestic cat oocytes with nonfrozen and frozen-thawed spermatozoa produced developing
28 embryos. The percentage of in-vitro-derived embryos was 43.6% after using nonfrozen
29 spermatozoa. Frozen-thawed spermatozoa developed at a similar rate (44.0%) after using SF.
30 However, the rate of embryo development was lower (20.1%) when CPF was used. The in-vitro-
31 derived embryos in the nonfrozen group consisted of 46.9 ± 2.5 cells after 5-day culturing. After
32 cryopreservation with SF and CPF the cell numbers per embryo were 39.9 ± 2.7 and 31.8 ± 3.4
33 correspondingly. In CPF group these numbers were lower than in nonfrozen controls.
34 Cryopreservation of spermatozoa with either of two freezing media led to a decrease in post-

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