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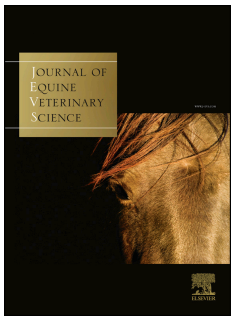

Oviduct binding capacity of cryopreserved equine ejaculated and epididymal spermatozoa

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Oviduct binding capacity of cryopreserved equine ejaculated and epididymal spermatozoa

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Abstract
This study investigated the binding capacity of equine spermatozoa from ejaculated and from different regions of the epididymis in the oviductal epithelium, before and after cryopreservation, using an oviduct explant assay. Ejaculated and epididymal sperm from caput, corpus and cauda of 10 stallions were diluted and submitted to freezing process. Fresh and frozen-thawed sperm were evaluated for sperm kinematics, PMI and incubated with oviduct explants. The cryopreservation process decreased significantly the sperm motility parameters of ejaculated sperm, corpus and cauda epididymal sperm ($P < 0.05$). The percentage of plasma membrane integrity was significant higher in fresh samples versus frozen-thawed samples, in all analyzed groups ($P < 0.05$). Binding of ejaculated spermatozoa to oviduct epithelium was significantly higher than caput, corpus or cauda epididymal sperm ($P < 0.05$). The caput epididymal sperm showed no binding capacity to oviduct explants, thus, significantly more sperm recovered from the corpus and cauda epididymis were bound to OEC compared to caput epididymal sperm ($P < 0.05$). No differences were observed in ejaculated and epididymal sperm before and after cryopreservation ($P > 0.05$). In conclusion, the ejaculated sperm has higher binding capacity than epididymal sperm, suggesting that the seminal plasma plays an important role in the establishment of the oviductal sperm reservoir. The cryopreservation process did not affect the binding capacity of ejaculated or epididymal spermatozoa to oviductal epithelium.

Keywords: Stallion; Epididimys; Sperm reservoir; Oviductal cell culture.