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JOURNAL ARTICLE

Movement characteristics of boar sperm obtained from the oviduct or hyperactivated in vitro

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The objectives of this study were to describe hyperactivated motility in boar sperm and to determine the incidence of hyperactivation among boar sperm flushed from the oviduct. Oviducts were surgically removed from 13 gilts 32 hours after mating them to fertile boars. The majority of the sperm flushed from the oviducts was immotile, weakly motile, or stuck to mucus or cellular debris. The mucus could not be penetrated by the sperm. The remaining 3% to 19% of the flushed sperm was free-swimming. Only five hyperactivated sperm were recovered, all from the ampulla of the oviduct. The remainder of the free-swimming sperm travelled in linear trajectories and possessed significantly higher flagellar curvature ratios (the flagella were less bent) than boar sperm measured in diluted semen. Hyperactivated motility was induced in washed ejaculated boar sperm, using a 1-minute pulse of 4 $\mu\text{mol/L}$ calcium ionophore A23187. The ionophore-treated sperm had significantly lower straight-line velocities, linearities, and flagellar curvature ratios than controls, as would be expected for hyperactivated sperm. They were vigorous and swam in circles. It was concluded that, although few hyperactivated boar sperm could be recovered from the oviduct, boar sperm are capable of undergoing hyperactivation.

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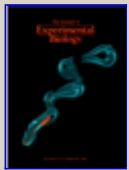
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