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JOURNAL ARTICLE

Addition of hypotaurine can reactivate immotile golden hamster spermatozoa

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Hamster epididymal spermatozoa became virtually immotile following washing and dilution in chemically defined medium (TLP-PVA). The sperm motility factors (penicillamine, hypotaurine, and epinephrine: PHE) were examined for their ability to reactivate immotile sperm. Sperm could be reactivated by addition of PHE at 1 h of incubation.

Hypotaurine alone was capable of reactivating sperm motility, but epinephrine and penicillamine together were not. However, overall sperm motility and percentage of motile sperm during incubation were

higher when PHE components were used in combination than when hypotaurine was used alone. Addition of hypotaurine to immotile sperm suspensions could be postponed for up to 6 h with subsequent recovery of sperm motility, although the degree of recovery of motility declined progressively with each hour that addition of hypotaurine was delayed. The rescuing effect of hypotaurine was due to an increase both in the percentage of motile sperm and in the quality (grade) of sperm motility. The data show that hypotaurine is required for expression of sperm motility in the hamster, and support the concept that the loss of hypotaurine from sperm following washing and dilution is responsible for the sperm-immobilizing effect of these procedures. Additionally, the data demonstrate that hamster sperm can remain viable for several hours after becoming immotile, and that many of the immotile sperm are capable of being reactivated.

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