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## JOURNAL ARTICLE

# Characterization of sulfhydryl proteins involved in the maintenance of flagellar straightness in hamster spermatozoa

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Hamster caput epididymal spermatozoa exhibit a marked 90-180 degree bend when induced to acquire progressive motility in vitro (Cornwall et al, 1988). Flagellar bending is prevented by oxidizing sperm sulfhydryl (SH) groups with diamide. In the present study, the authors examined the SH proteins involved in sperm flagellar bending using two-dimensional polyacrylamide gel electrophoresis and monobromobimane, an SH-specific fluorescent dye. Proteins extracted from samples containing bent caput spermatozoa contained more reduced SH than the same proteins extracted from straight caput spermatozoa. To further characterize these sperm SH proteins, caudal epididymal spermatozoa that exhibited straight flagella were induced to undergo flagellar bending by treatment with the SH reductant dithiothreitol. Specific proteins of 85-94 kDa, 50-55 kDa and 35-40 kDa, which were rich in SH groups when extracted from samples containing bent caput spermatozoa, were also SH-rich in samples containing bent cauda spermatozoa. These studies suggest that oxidation of specific SH proteins may be important for maintaining sperm flagellar morphology.

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