

SULPHYDRYL-DISULFIDE PROTEINS IN STALLION EPIDIDYMAL SPERMATOZOA

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Mammalian spermatozoa undergo complex and sequential modifications during the epididymal transit; concomitantly the sperm cell acquires a mature motility pattern and fertilizing capacity. Some observed changes appear regulated by oxidoreduction reactions. The mechanism involved in the physiologic thiol oxidation is not completely understood, but sperm thiol oxidation seems to be crucial for sperm acquisition motility and fertilizing ability. The present work provides evidences of changes in the thiol status of stallion spermatozoa obtained from the different epididymal regions. In the present study, we used the thiol fluorescence labeling agent monobromobimane (mBBBr) to analyze -SH and disulfides in stallion immature and mature epididymal spermatozoa. The mBBBr labeled sperm electrophoretic pattern showed 10 well-defined fluorescent bands, being the 107, 85, 31 and 14 kDa the major ones. The electrophoretic profile displayed differences not only in proteins obtained from sperm head and tail, but also in sperm cells obtained from the different epididymal regions. Evaluation of the sulphhydryl - disulfide status demonstrated that immature cells contained mostly thiol groups, whereas these groups were oxidized in mature cells (mainly proteins bands lower than ~30 kDa). By MALDI ToF-ToF mass spectrometry, were identified some sulphhydryled proteins: α -tubulin, glyceraldehyde 3 phosphate dehydrogenase, triosephosphate isomerase, glutathione S-transferase, alpha-globin and voltage-dependent anion channel (Supported by FAPERJ, TECNORTE, CNPq)

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