Study of nuclear decondensation of the rat spermatozoa by reducing agents during epididymal transit

Fortiés, M. W.

Bustos?Obregón, E.

Summary. Chromatin packing, mostly due to disulfide bond formation, is one important step in epididymal sperm maturation. In this study the in vitro effect of a reducing agent such as thioglycolate (Tg) was tested. Thioglycolate was assayed on rat sperm obtained from caput, corpus and cauda epididymides. Changes were verified via light microscopy (and area measurements) and both transmission and scanning electron microscopy using standard techniques. Due to the low molecular weight of Tg, it does not require detergent to enter sperm. The nuclear decondensation elicited by Tg and its effect on sperm surface, differ from caput to cauda, although the final nuclear area is not significantly different. The pattern of sperm nuclear decondensation suggests that it starts at the caudal segment of the head, perhaps due to the abundance of nuclear pores in this region. Under the experimental conditions described below the perforatorium was not affected. Thus, the nature and role in the rat sperm