Distribution of tetraspanin family protein CD9 in bull reproductive system

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The CD9 cell surface molecule has been found to be important for the fertilization process of mammals. The aim of this study was to investigate, whether the molecule CD9 is expressed on bull sperm during the spermatogenesis and maturation of spermatozoa as well as in bull reproductive organs and their secreta. The expression of bovine CD9 was examined by immunohistochemistry, immunofluorescence, and immunoblotting. The histochemical studies using an anti-CD9 monoclonal antibody showed strong staining in the myeloid and collagenous tissue layer of testis and epididymis. Strong reaction was observed in the lumen of epididymal duct (the fluid of the duct) but the clumped spermatozoa in the lumen of the duct remained unstained. Intensive tissue staining was observed in the range of epithelial microvilli of epididymis (body and tail) and in the fluid content of tubules. The Western blot analysis showed the 24kDa molecule in sperm protein extracts of ejaculated sperm and also in the protein extracts of the sperm obtained from the head, body, and tail of epididymis but the localization of CD9 on the sperm was not directly confirmed. However, the obtained data could be considered in the interpretation of the role of CD9 in spermatogenesis and sperm-oocyte interactions.

Keywords:

monoclonal antibody; immunohistochemistry; sperm; tissue

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