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Immunohistochemical characterization of sensory nerve terminations in the vaginal fornix and cervix of dorper ewes and saanen does

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Resumo

The commercial exploitation of goats and sheep for meat, milk, and skin has represented an important part of the Brazilian livestock economy in recent years. Therefore, aiming at the animal's genetic improvement, the implantation of reproductive biotechnologies in these herds such as embryo transfer is fundamental for an efficient and sustained technical exploitation. Indeed, the overall conditions of animal welfare are of great importance, also when applying reproductive technologies. Thus, this study aimed to investigate the presence of sensory nerve terminations in the mucosa of the vaginal fornix and cervix region of sheep and goat females, seeking for evidence that can improve both embryo collection and transfer techniques in small ruminants. Fragments of the vaginal fornix and cervix of five Dorper ewes and five Saanen does were collected from a local slaughterhouse (latitude 21°46'S, longitude 43°22'W). The histological sections were submitted to the immunohistochemical process, through the reaction of the antibody against the general protein nerve marker product-gene 9.5 (PGP-9.5), focusing on the presence of nerve terminations, their intensity (weak, moderate, intense), and frequency. Overall, a total of 80% of the histological sections of the cervix showed an intense presence of nerve terminations (being 100% (5/5) in goats and 60% (3/5) in sheep). In the histology of the vaginal fornix, goats had a 60% of intense, 20% of moderate and 20% of weak presence. In sheep, there was no intense presence, and the majority (4/5) was moderate (80%), while only one ewe had it weak (20%). In conclusion, the nerve terminations are present in the lamina propria of the mucosa of the histological sections of all animals studied. Their location indicates a sensory function, suggesting a potential "pain sensitivity" in those organs. Therefore, it is recommending the use of anesthetic procedures whenever there is any manipulation of such organs, as in the nonsurgical embryo recovery and transfer in small ruminants.

Keywords: Sheep, Goats, Cervix, Anesthesia.

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