

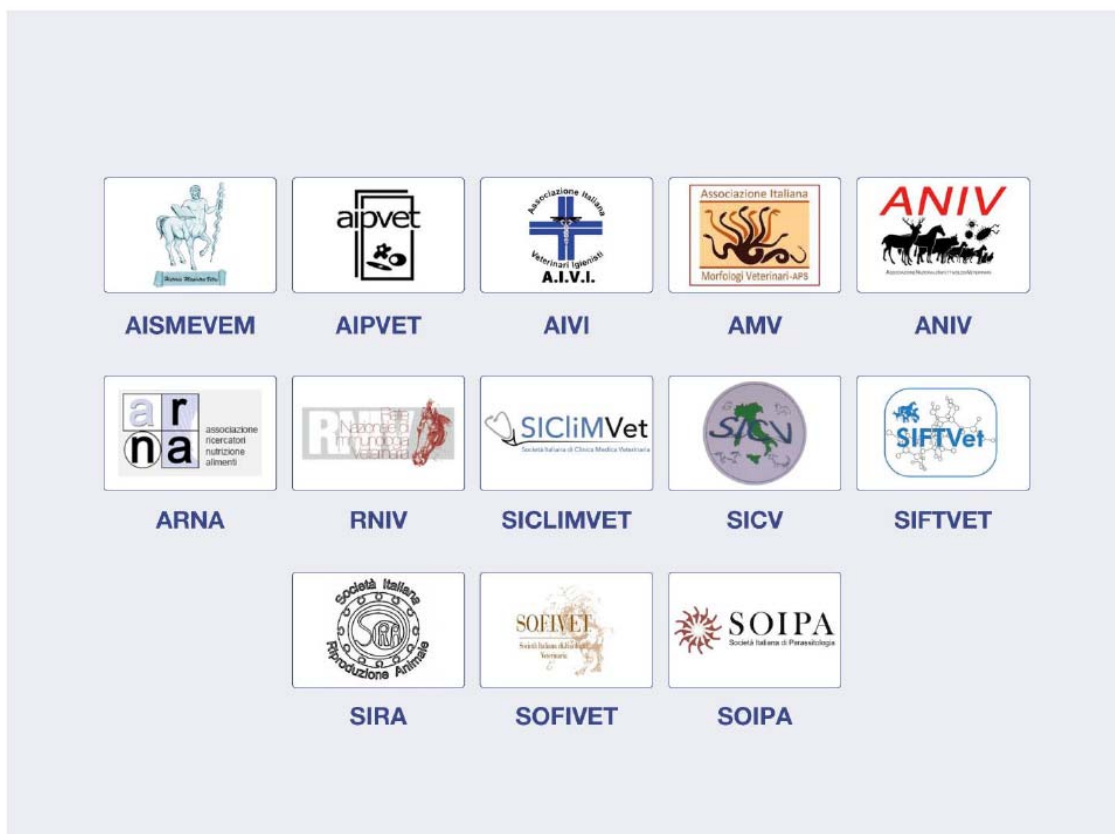


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DIFFERENTIAL GLYCOPATTERN IN THE HORSE PELVIC AND PENILE URETHRA EPITHELIUM

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The urethra of the male has a dual function, acting as a route for urine and semen. Often the male urethra corresponds to the preferential entrance for pathogenic agents that can affect both the urinary and the reproductive systems. Thus, the physicochemical properties of the mucosal epithelium surface are of paramount importance. The luminal glycocalyx of human urethral cells contains acid mucopolysaccharides which are involved in the prevention of bacterial colonization [1]. Despite its considerable importance, scanty reports are available about the molecular composition of the urethral epithelium, particularly in non-human species. In this study, the glycan profile of pelvic and penile urethra was investigated. Tissue fragments from the pelvic and penile urethra of three adult horse stallions in good health status, were fixed in 4% (w/v) PBS-buffered paraformaldehyde, embedded in paraffin wax, and stained with a panel of twelve lectins. Surface cells of both the pelvic and penile urethra contained glycans terminating with galactose (Gal), fucose (Fuc), N-acetylglalactosamine (GlaNAc), as well as α 2,6- and α 2,3-linked sialic acids. Few surface cells of penile urethra also displayed Gal β 1,3GalNAc (T antigen). The luminal surface of both the pelvic and penile urethra expressed all the investigated sialo- and asialoglycans, although a high presence of GalNAc-terminating glycans was detected on the surface of the pelvic urethra. Interestingly, the urothelium showed secretory activity. The lumen of the pelvic urethra contained neutral glycans terminating with N-acetylglucosamine, Gal, Fuc, and GalNAc, as well as negative-charged glycans terminating with α 2,3-linked sialic acids and sialic acid-linked GalNAc. In the lumen of the penile urethra only sialoglycans such as α 2,3-linked sialic acids, sialic acid-linked GalNAc, and sialic acid-linked T antigen were detected. These findings suggest that the horse urethral epithelium is coated with a complex glycosylation pattern which in addition to protecting the urethra against pathogens, as in humans is capable of modifying the urethral milieu [2]. Since the seminal plasma (SP) also contains glycoproteins [3], the role of the urethra in the SP composition cannot be excluded.

[1] Alm P., Colleen S. Acta Path. Microbiol. Immunol. Scand. Sect. A, 90: 103-111, 1982

[2] Zecchi Orlandini S., Orlandini G. E. Arch. Androl. 23: 51-59, 1989

[3] Pini T. et al. Reprod. Fertil. Dev. 30: 689-702, 2018