

Prostatic epithelial developing profile in guinea pig (*Cavia porcellus*)

Pinheiro, PFF.¹, Domeniconi, RF.¹, Pereira, S.¹, Martins, OA.¹, Teixeira, GR.¹, Almeida-Francia, CCD.¹, Mello Jr., W.¹, Martinez, M.² and Martinez, FE.¹

¹Departamento de Anatomia, Universidade Estadual Paulista

²Departamento de Morfologia e Patologia, Universidade Federal de São Carlos

Understanding the stages of cellular differentiation in normal prostate epithelium is essential for identification of cells involved in prostatic carcinogenesis. Many researches search animal model to the understanding of the prostatic pathologies. The prostatic epithelium is composed of basal (BA), luminal (LU) and neuroendocrine (NE) cells which are presumed to differentiate from common progenitor/stem cells. There are two prostatic epithelial compartments: basal and luminal secretory. In the BA compartment, the BA cells layer is situated between the basement membrane and the overlying LU cells. The secretory compartment consists of LU cells layer which expresses the androgen receptor, cytokeratin (CK) 8 and 18 and prostatic specific antigen. The BA cells express p63, CK5 and 14. Prostatic NE cells express cromogranin A, serotonin and others markers. Epithelial cells sub-populations that co-express p63, CK15, 17 and 19 are found in BA layer. Alterations in the prostatic cells had been observed in the aging and in pathologic processes. By using differentiation makers (CK and p63), we examined the epithelium differentiation profiles in the guinea pig prostate developing. Five male guinea pigs of the each group (postnatal days 10, 20, 80 and 120) were used. Prostate sections were stained immunohistochemically using the avidin-biotin-peroxidase complex method. Sections were incubated with the primary antibodies (p63, CK 18 and 19) overnight at 4 °C. After, the slides were rinsed with PBS and incubated with anti-mouse IgG, 1:160 for 1 hour and rinsed with PBS and incubated with ABComplex for 45 minutes. The slides were rinsed with PBS and then the site of antigen-antibody reaction was revealed by diaminobenzidine. The study demonstrated that the majority in developing epithelial cells co-expressed p63, CK 18 and intermediate (IN) maker, CK 19. In the groups aged 10 and 20 days, the BA cells were found in buds prostatic and canalized ducts while in the groups 80 and 120 days were restrict to the proximal ducts to the pelvic urethra and prostatic acini. A considerable number of BA and LU compartment cells co-expressed CK19. Some CK19 positive cells presented NE cell phenotype. In all groups, the secretory compartment presented CK 18 positive columnar tall cells. The LU cells were found in solid buds, canalized ducts and acini. The guinea pig can be considered a useful experimental studies model to prostate, because expresses makers found in the developing human prostate epithelial profile.

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