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JOURNAL ARTICLE

Radiographic Localization of beta-adrenergic receptors in the rat ventral prostate

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Previous studies performed with crude homogenates have demonstrated the presence of beta-adrenergic receptors in the rat ventral prostate. The precise localization of these receptors in prostatic tissue, however, has not been determined. The present study describes the localization of beta-adrenergic receptors using in vitro radioautography. beta-adrenergic receptors are present exclusively in the epithelial cells, while no receptors could be detected in the stromal cells. The silver grains mostly are associated with the apical pole of the glandular cells and are much less concentrated in the basal nuclear region of the epithelium. Very low concentrations of grains are found in the lumen of the acini. Castration caused a dramatic fall in the receptor concentration, while treatment with dihydrotestosterone reversed these effects. The specific presence of beta-adrenergic receptors in prostatic epithelial cells and their control by androgens suggest that they could play a physiologic role in androgen action in prostatic tissue. Moreover, the level and activity of beta-adrenergic receptors could be used as parameters of prostatic activity.

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