

70. THE LOCALISATION OF OXYTOCIN AND OXYTOCIN RECEPTOR IN NORMAL HUMAN PROSTATE CELLS

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Oxytocin has been demonstrated in the reproductive tissues of male mammals but has not previously been localised in human prostate tissue. Oxytocin has been shown to increase prostatic muscle tone and prostatic growth. It has been found in high levels in the prostate of aging dogs with benign prostatic hyperplasia (BPH). This may be of significance in this species and in humans, who both suffer from BPH, an androgen dependent condition that develops with age. Dihydrotestosterone (DHT) is the active hormone in the prostate and is produced from testosterone by the enzyme 5 α -reductase. This conversion has been shown to be augmented in the presence of oxytocin. The aim of this study was to investigate the presence of oxytocin and oxytocin receptor in normal human prostate cells and correlate findings with the presence of 5 α -reductase. Normal human prostate stromal epithelial cells (Clonetics) were grown in either prostate stromal cell media or prostate epithelial media (Clonetics). Stromal cells were at passage six and epithelial cells at passage four. Cells were fixed in Bouins and stained with antibodies for oxytocin, oxytocin receptor and 5 α -reductase I and II. Western blot analysis was performed on the same cell types for the presence of oxytocin receptor. The presence of oxytocin and oxytocin receptor was confirmed in both epithelial and stromal cells by immunocytochemistry. Oxytocin receptor was confirmed by Western blot with a band present at 66 kDa. 5 α -reductase I and II were also localised in both cell types by immunocytochemistry. These results demonstrate for the first time the expression of oxytocin and oxytocin receptor in both stromal and epithelial cells from normal human prostate. The demonstration of oxytocin, oxytocin receptor and 5 α -reductase I and II in the same cell types suggest that oxytocin may play a role in the regulation of DHT in the human prostate.