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JOURNAL ARTICLE

Regulation of caltrin mRNA expression by androgens in the murine prostate

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Testicular androgens induce the proliferation and differentiation of prostatic epithelial cells by regulating the expression of androgen target genes. The use of subtractive hybridization to isolate genes that are differentially expressed during the early phase of androgen-induced prostatic regrowth in castrated mice resulted in identification of the murine caltrin gene. Caltrin messenger RNA (mRNA) was highly expressed in the prostates of intact mice. Five weeks following castration of mice, steady state caltrin mRNA levels were reduced by 70%. Within 12 hours of administration of pharmacological doses of testosterone enanthate, steady state caltrin mRNA levels were elevated and increased to 90% of levels found in intact mice by 24 hours. Reverse transcriptase-polymerase chain reaction analysis of prostate tissue localized caltrin mRNA transcripts to the dorsal but not the ventral or lateral prostate. Within the dorsal prostate, in situ hybridization always localized caltrin mRNAs to the prostatic epithelial cells. Testosterone-induced increases in caltrin mRNA levels were detected prior to S-phase progression and initiation of proliferation in this cell population. Caltrin has been demonstrated previously to function as a calcium transport inhibitor at the plasma membrane. Findings of this study indicate that caltrin is highly expressed and androgen-regulated in the murine prostate, where it is associated with androgen-induced proliferation and differentiation of epithelial cells.

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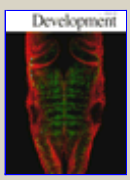

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K. D. Economides and M. R. Capecchi
Hoxb13 is required for normal differentiation and secretory function of the ventral prostate
Development, May 15, 2003; 130(10): 2061 - 2069.
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