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Prostate Epithelial Expression of a Novel Androgen Target Gene

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To better understand the role of androgens in prostate development and disease it is important to characterize androgen-regulated genes in the prostate. Using suppression subtractive hybridization between congenitally androgen-deficient (*hpg*) and androgen-replaced *hpg* mouse prostates, we have cloned a novel *a*ndrogen *u*p-regulated gene from *m*ouse *p*rostate (AUMP). The messenger RNA sequence of AUMP consists of 805 nucleotides with an open reading frame of 408 base pairs. In non-*hpg* mice with normal androgen levels, AUMP is selectively expressed in the prostate, as shown by reverse transcriptase-polymerase chain reaction and Northern blot analysis of 9 organs. Depletion of androgens via castration of mature mice resulted in loss of AUMP expression, whereas testosterone replacement restored it. Tissue in situ hybridization localized AUMP expression to the luminal epithelial cells of the androgen-sufficient prostate. Database searches indicate that AUMP codes for a novel protein that shares approximately 65% similarity and 35% identity to palmitoyl protein thioesterase of human, rat, mouse, and bovine. A motif for protein-transport protein, which promotes translocation as well as integration of secretory proteins into membrane, is also present. Further efforts will be made to obtain the human homologue of AUMP that will enable evaluation of its role in normal and diseased human prostate.

Key words: *Hpg*, up-regulation, subtractive hybridization, differential expression, in situ hybridization