

Journal of Andrology, Vol 22, Issue 3 471-480, Copyright © 2001 by The American Society of Andrology

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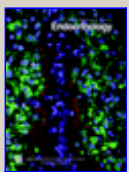
Differential expression of CCAAT/enhancer-binding protein-delta (c/EBPdelta) in rat androgen-dependent tissues and human prostate cancer

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CCAAT/enhancer-binding protein delta (C/EBPdelta) is a nuclear transcription factor that regulates cellular growth and differentiation. In this study we demonstrate that C/EBPdelta gene expression is differentially regulated in rat androgen-dependent tissues and human prostate cancer. C/EBPdelta messenger RNA (mRNA) levels were very low in adult rat ventral prostate, epididymis, and testis. In ventral prostate and epididymis, expression of C/EBPdelta mRNA increased more than sixfold when testicular testosterone was eliminated by surgical castration or treatment with ethane-1,2-dimethanesul fonate (EDS). Testosterone replacement reduced C/EBPdelta mRNA levels to near control values in both tissues. CWR22 is a human prostate cancer xenograft that mimics biological characteristics of androgen-dependent and androgen-independent human prostate cancer. In androgen-dependent CWR22 tumors, expression of C/EBPdelta mRNA declined in response to castration. Both C/EBPdelta mRNA and protein levels increased following testosterone administration. However, C/EBPdelta mRNA and protein levels were variable in recurrent CWR22 tumors growing in the absence of testicular androgen for approximately 5 months. C/EBPdelta expression was also variable in androgen-independent human prostate carcinomas (n = 3), although mRNA levels were substantially lower than those in androgen-dependent tumors (n = 3). These studies demonstrate that androgen down-regulates C/EBPdelta levels in androgen-dependent rat tissues, but induces C/EBPdelta expression in androgen-dependent human prostate cancer. Deregulation of C/EBPdelta occurs when prostate cancer progresses to the androgen-independent state.

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