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JOURNAL ARTICLE

Dipeptidylpeptidase IV activities are elevated in prostate cancers and adjacent benign hyperplastic glands

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Dipeptidylpeptidase IV (DPP IV) is a serine exopeptidase that has been implicated in cell-extracellular matrix interactions and bioactive peptide/cytokine/growth factor metabolism. The objective of this study was to determine if DPP IV activities were changed with development of cancer in the prostate. DPP IV activity was measured in human prostate cancer and benign prostatic hyperplasia (BPH) tissues by biochemical assays with glycylprolyl-p-nitroanilide as substrate in tissue extracts (BPH, n = 8: cancer, n = 7; 2 with Gleason score 5 and 5 with Gleason score 7) and quantitative morphometry of histochemical activities with glycylproline-4-methoxy-beta-naphthylamide as substrate (BPH, n = 9: cancer, n = 13, 1 with Gleason score 4, 10 with Gleason score 6, 2 with Gleason score 8) in frozen-tissue sections. Data were analyzed by analysis of variance. The peptidase activity was detected in epithelial but not stromal cells of BPH and cancer tissues, and it was present as a single band of activity of approximately 160 kDa in electrophoretically separated activity blots of the extracts. DPP IV activity was increased approximately twofold in cancer versus BPH tissues as determined by biochemical and quantitative histochemical methods. In addition, DPP IV activity was increased to a similar extent in BPH glands associated with the cancers. These data indicate that DPP IV activity is increased not only in primary prostatic cancers but also in associated BPH glands, suggesting that there may be some local factors produced by cancer cells that influence adjacent BPH epithelial cells to positively affect the immediate growth environment of the cancer.

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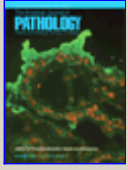
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