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ORIGINAL ARTICLE

High placenta-specific 1/low prostate-specific antigen expression pattern in high-grade prostate adenocarcinoma

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Abstract
Background The scarcity of effective therapeutic approaches for prostate cancer (PCa) has encouraged steadily growing interest for the identification of novel antigenic targets. Placenta-specific 1 (PLAC1) is a novel cancer–testis antigen with reported ectopic expression in a variety of tumors and cancer cell lines. The purpose of the present study was to investigate for the first time the differential expression of PLAC1 in PCa tissues.
Methods We investigated the differential expression of PLAC1 in PCa, high-grade prostatic intraepithelial neoplasia (HPIN), benign prostatic hyperplasia (BPH), and nonneoplastic/nonhyperplastic prostate tissues using microarray-based immunohistochemistry ($n = 227$). The correlation of PLAC1 expression with certain clinicopathological parameters and expression of prostate-specific antigen (PSA), as a prostate epithelial cell differentiation marker, were investigated.
Results Placenta-specific 1 (PLAC1) expression was increased in a stepwise manner from BPH to PCa, which expressed highest levels of this molecule, while in a majority of normal tissues, PLAC1 expression was not detected. Moreover, PLAC1 expression was positively associated with Gleason score ($p \leq 0.001$). Interestingly, there was a negative correlation between PLAC1 and PSA expression in patients with PCa and HPIN ($p \leq 0.01$). Increment of

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