WNT4 EXPRESSION PROFILING AND EVALUATION OF ITS PUTATIVE ROLE AS A PROSTATE CANCER TUMOR ANTIGEN

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Previous microarray data showed that WNT4 is an overexpressed transcript in high Gleason Score prostate cancer (PC) RNA tissue samples. However, its role as tumor antigen and its tissue expression profiling are poorly understood. The present work aims to characterize WNT4 transcript and protein expression profile in PC and other tumor tissue samples as well as investigate its role as a tumor antigen by evaluating the presence of anti-WNT4 antibodies in PC serum samples. Using RT-PCR approaches, we showed that although ubiquitously expressed in different tumor cell lines tested, the PC3 prostate cancer cell line presented the highest WNT4 transcript expression level. WNT4 protein expression profiling was evaluated by immunohistochemistry using an anti-WNT4 polyclonal antibody and formalin-fixed paraffin-embedded tissues. In these prostate glands, we observed staining of WNT4 for both normal and cancer tissues, however there was a tendency to a stronger staining pattern at the apical side of cancer luminal cells, as expected for a secreted protein. Immunobloting assays revealed that PC but not normal control serum samples presented autoantibodies against WNT4 recombinant protein, indicating that WNT4 constitute a PC tumor associated antigen. Our data conclude that although ubiquitously expressed in different tumor and non tumor tissues, WNT4 protein is overexpressed in PC tissues and that this expression pattern could be related to its role as a PC tumor associated antigen.