Expression of Prostate-Specific Antigens and Human Glandular Cytokeratin 2 in the Thyroid Gland. 

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Prostate-specific antigens (PSA) and human glandular cytokeratin 2 (HGC2) are two closely related, estrogen-regulated oncoproteins, primarily produced by the prostate. These oncoproteins are now used as biomarkers for the diagnosis and management of prostate cancer.

Recently, PSA and HGC2 were found to be actively expressed in the thyroid. Numerous studies confirmed their presence in various thyroid tissues as well as in many normal and malignant tissues. Using reverse transcriptase-polymerase chain reaction (RT-PCR), we analyzed RNA from 20 normal tissues and found that both genes were expressed in the thyroid. Subsequently, we analyzed 12 RNAs extracted from thyroid tissues from 20 patients (5 benign tissues and 5 malignant) and found that both cytokeratins were expressed in 8 of the same tissues (4 benign tissues and 4 malignant). Sequencing of the PCR products confirmed the specificity of our experiments. Immunohistochemically localized PSA in variable amounts of corresponding benign tissues.

These data confirm expression of both PSA and HGC2 in the thyroid tissues and suggest that these proteins are the source of production. The number of samples analyzed is small and does not allow for conclusions regarding differential expression of PSA and HGC2 between benign and malignant tissues. Future studies including larger number of samples will reveal whether PSA and HGC2 expression is lower in cancerous tissues, as our preliminary results indicate.

The functions of these two proteins in the thyroid are currently unknown.