

Intracellular glycoproteins binding galectin-1 in thyroid lesions

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ABSTRACT

Aims and background. The increased expression of galectin-1 on the mRNA and protein level observed in malignant thyroid tumors in comparison with benign lesions suggests that this protein may be associated with malignant transformation of thyroid epithelium. Extracellular and membrane glycoproteins are the main known ligands for this galactose-binding lectin. However, immunofluorescence studies have shown that galectin-1 is found predominantly in the intracellular compartment. The aim of this study was to examine intracellular carbohydrate ligands of galectin-1 in the thyroid, with particular attention to potential differences in their expression levels between benign and malignant lesions.

Methods. Identification of cytosolic and nuclear glycoproteins binding galectin-1 was performed by affino blotting after separation of proteins in 8% polyacrylamide slab gels and electrotransfer onto Immobilon-P membranes. For semiquantitative analysis of glycoproteins binding galectin-1, an enzyme-linked lectino-solid-phase assay (ELLSA) was used.

Results. The predominant cytosolic glycoproteins binding galectin-1 had molecular masses of 50, 55, 59, 64, 85-87, 100, and 133 kDa and nuclear glycoprotein had a molecular mass of 75 kDa. There were no evident differences in glycoprotein patterns between benign and malignant thyroid lesions. The results obtained by ELLSA did not show any significant differences in lectin binding by cytosolic and nuclear proteins of thyroid lesions either.

Conclusions. On the basis of these results it is tempting to suggest that interactions between galectin-1 and intracellular glycoconjugates are not critical for malignant transformation in the thyroid gland.

Key words: galectin-1, glycoproteins, thyroid lesions.

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