

Methylation of the Tyrosine Phosphatase SHP1 Gene and Loss of its Protein in Thyroid B-cell Lymphoma

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Abstract : Tyrosine phosphatase SHP1 is an important negative regulator of signaling by receptors for cytokines and growth factors in hematopoietic cells. The methylation of the SHP1 gene plays a role in the proliferation and differentiation of various kinds of malignant lymphoma and leukemia. This study examined the methylation of the SHP1 gene in thyroid B-cell lymphoma and Hashimoto's disease by methylation specific PCR and the loss of SHP1 protein in tumor tissue by the immunohistochemistry. Almost all cases of the B-cell lymphoma and 2 of Hashimoto's disease examined in this study showed methylation of the SHP1 gene in the tissue specimens. The methylation of the SHP1 gene may therefore be one of the critical events in the pathogenesis of thyroid B-cell lymphoma. However, the loss of SHP1 protein was found in about the half of all cases of diffuse large B-cell lymphoma, but rarely in MALToma cases. The loss of SHP1 protein may therefore be related, not only with the histological types of B-cell lymphoma but also with the characteristics of the proliferation rate and activated molecules.

Key words : Thyroid gland, Malignant lymphoma, Methylation, SHP1