

New molecular markers for tumor aggressiveness in biliary tract cancer

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Despite recent advances in diagnosis and treatment, the prognosis of patients with biliary tract cancer is still poor. Elucidating the biological characteristics of these carcinomas has become necessary to improve the prognosis of patients and to devise better treatment strategies. A recent study report that invasive front dominant expression of LN γ 2 and LN β 3 and active MMP7 play a key role in the progression of biliary tract cancer.

The potential role of LN5 and MMP7 in human cancer is receiving increasing attention. However, expression of LN5 and MMP7 in biliary tract cancer has not been clearly addressed. A research article to be published on August 21,2009 in the *World Journal of Gastroenterology* addresses this question. The research team led by Dr. Hiroyuki Yamamoto of Sapporo Medical University systematically analyzed the expression of LN5 chains and MMP7 in biliary tract cancer.

Using RT-PCR, real-time RT-PCR, immunohistochemistry, casein zymography, and cell invasion assays, the research team analyzed the expression and role of LN5 and MMP7 in biliary tract cancer, in relation to clinicopathological characteristics. Invasive front dominant expression of LN γ 2 and LN β 3 was associated with tumor progression. Active MMP7 detected by casein zymography was correlated with depth of invasion and advanced stage. Down-regulation of MMP7 expression by siRNA resulted in a significant decrease in biliary tract cancer cell invasion in vitro.

In the view of Professor Hiroyuki Yamamoto, detection of LN γ 2, LN β 3, and active MMP7 could be molecular markers for tumor aggressiveness in biliary tract cancer. Understanding how LN γ 2, LN β 3, and active MMP7 are induced and how their expression is blocked may represent a future strategy for therapeutic intervention in the treatment of patients with biliary tract cancer.

Overexpression of LN5 chains, especially LN γ 2, and MMP7 has been reported in various types of carcinomas, such as hepatocellular, colorectal, stomach, and esophagus. LN5 chains and MMP7 could be future therapeutic targets in clinical settings.

More information: Oka T, Yamamoto H, Sasaki S, Ii M, Hizaki K, Taniguchi H, Yasushi Adachi Y, Imai K, Shinomura Y. Overexpression of beta3 and gamma2 chains of laminin 5 and MMP7 in the progression of biliary tract [cancer](#). World J Gastroenterol 2009; 15(31):3865-3873; www.wjgnet.com/1007-9327/15/3865.asp

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