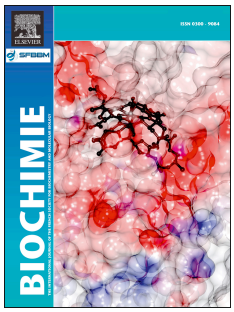
Accepted Manuscript



The Emerging Role of Long non-coding RNA in Gallbladder Cancer Pathogenesis

Akanksha Khandelwal, Akshay Malhotra, Manju Jain, Karen M. Vasquez, Aklank Jain

PII: S0300-9084(16)30374-1

DOI: 10.1016/j.biochi.2016.11.007

Reference: BIOCHI 5093

To appear in: *Biochimie*

Received Date: 4 August 2016

Accepted Date: 24 November 2016

Please cite this article as: A. Khandelwal, A. Malhotra, M. Jain, K.M. Vasquez, A. Jain, The Emerging Role of Long non-coding RNA in Gallbladder Cancer Pathogenesis, *Biochimie* (2016), doi: 10.1016/j.biochi.2016.11.007.

ABSTRACT

Gallbladder cancer (GBC) is the most common and aggressive form of biliary tract carcinoma with an alarmingly low 5-year survival rate. Despite its high mortality rate, the underlying mechanisms of GBC pathogenesis are not completely understood. Recently, from a growing volume of literature, long non-coding RNAs (lncRNAs) have emerged as key regulators of gene expression and appear to play vital roles in many human cancers. To date, a number of lncRNAs have been implicated in GBC, but their potential roles in GBC have not been systematically examined. Thus, in this review, we critically discuss the emerging roles of lncRNAs in GBC, and the pathways involved. Specifically, we note that some lncRNAs show greater expression in T1 and T2 tumour stages compared to T3 and T4 tumour stages and that their dysregulation leads to alterations in cell cycle progression and can cause an increase in GBC cell proliferation and apoptosis. In addition, some lncRNAs control the epithelial-mesenchymal transition process, while others take part in the regulation of ERK/MAPK and Ras cancer-associated signalling pathways. We also present their potential utility in diagnosis, prognosis, and/or treatment of GBC. The overall goal of this review is to stimulate interest in the role of lncRNAs in GBC, which may open new avenues in the determination of GBC pathogenesis and may lead to the development of new preventive and therapeutic strategies for GBC.