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Studies on miR-885-5p as a potential serum biomarker of HCC and its suppresses metastasis effects

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Circulating miRNAs (microRNAs) are emerging as promising biomarkers for several pathological conditions, and the aim of this study was to investigate the feasibility of using serum miRNAs as biomarkers for liver pathologies. Real-time qPCR (quantitative PCR)-based TaqMan MicroRNA arrays were first employed to profile miRNAs in serum pools from patients with HCC (hepatocellular carcinoma) or LC (liver cirrhosis) and from healthy controls. Five miRNAs (i.e. miR-885-5p, miR-574-3p, miR-224, miR-215 and miR-146a) that were up-regulated in the HCC and LC serum pools were selected and further quantified using real-time qPCR in patients with HCC, LC, CHB (chronic hepatitis B) or GC (gastric cancer) and in normal controls. And then the miR-885-5p in HCC metastasis have been studied. The results demonstrated that the expression of miR-885-5p negatively correlated with the invasive and metastatic capabilities of human HCC tissue samples and cell lines. Overexpression of miR-885-5p decreased metastasis of HCC cells *in vitro* and *in vivo*. Inhibition of miR-885-5p improved proliferation of non-metastatic HCC cells. Furthermore, we disclosed that miR-885-5p targeted gene encoding β-catenin CTNNB1, leading to decreased activity of the Wnt/β-catenin signaling pathway. The present study indicates that miR-885-5p suppresses the metastasis of HCC and inhibits Wnt/β-catenin signaling pathway by its CTNNB1 target, which suggests that miR-885-5p to be a promising negative regulator of HCC progression and as a novel therapeutic agent to treat HCC.

Biography

Yaping Tian is a Professor of Department of Clinical Biochemistry, Chinese PLA General Hospital and Military Medical School. He is also a Professor of Nankai University, and Tsinghua University. He received his Master's degree in Medicine from Chinese PLA Postgraduate Medical School in 1989 and PhD from Academy of Military Medical Sciences in 1993. He had been trained as Postdoctoral Fellow for 2 years (1995-1997) in The Queen Elizabeth Hospital, Australia. He has been focusing on the study of specific serum proteomic profiles and genetic signatures in different diseases, especially on cancer and cardiovascular diseases. He also focused on the studies of antioxidants in herbal medicine and free radical biology. He has received more than 20 grants and published more than 300 scientific papers in peer-reviewed journals. He is on the Editorial Boards of several journals and the honor Chairman of the Clinical Biochemistry and Applied Molecular Biology Association, CSBMB.

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