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Abstract 3339: Circulating long non-coding RNA HULC as an early indicator of hepatocellular carcinoma irrespective of etiology FREE

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Abstract

Background: Hepatocellular carcinoma (HCC) is the 6th most common cancer worldwide and is highly prevalent in Asian countries. Long noncoding RNAs (lncRNAs) are non-coding transcripts with a size of more than 200 bases in length. Several studies reported that lncRNAs are highly deregulated in HCC and could be used as biomarkers for early diagnosis and prognostic purposes. In the present study, we measured the circulating lncRNA HULC as an early diagnostic marker for HCC with different etiology.

Methods: Serum samples were collected from healthy controls, liver cirrhosis (LC), and HCC patients with different etiology and stored at -80°C until assay. Total RNA was extracted using Qiagen RNeasy kit and tested for RNA quantity and purity using NanoDrop spectrophotometer. The RNA extract that contains lncRNA HULC was transcribed into cDNA using a reverse transcription kit. Employing target specific primers for the lncRNA HULC, qRT-PCR was performed with the synthesized cDNA using Qiagen QuantiFast SYBR Green PCR kit on a Rotor-Gene qRT-PCR system.

Results: Quantification of lncRNA HULC using qRT-PCR in the serum samples demonstrated significant increase in LC cases and in all HCC cases irrespective of etiology compared to the normal healthy controls. The highest concentration was observed in serum samples from HCC patients with hepatitis B virus (HBV) infection, which was about 8 fold higher compared to healthy controls. There was no significant difference between the mean HULC lncRNA levels in HCC patients with different etiology such as alcoholic cirrhosis, LC due to other reasons, hepatitis B and hepatitis C virus (HCV) infections, and HCC developed from other unknown causes. However,

serum HULC lncRNA levels in LC cases without HCC was significantly lower compared to all HCC samples.

Conclusions: The results of the present study demonstrated that there is a significant increase in HULC lncRNA levels in the serum samples of all HCC patients irrespective of etiology. Therefore, the circulating lncRNA HULC could be used as an early diagnostic biomarker for HCC before appearing other clinical symptoms.

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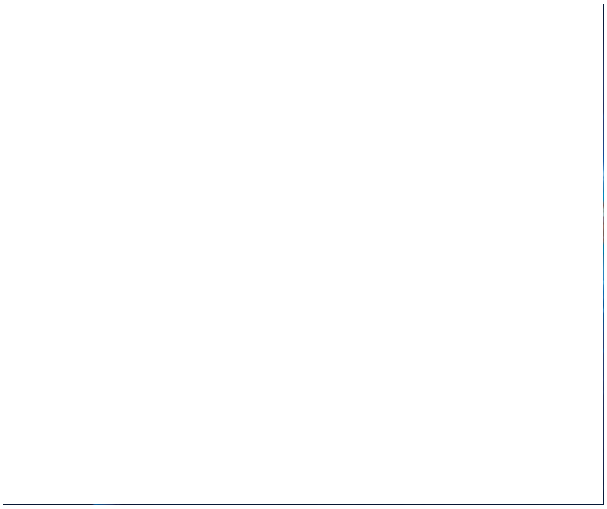

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