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MicroRNA Differential Expression in Chronic HCV Cases from Jeddah, Saudi Arabia

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Hepatitis C virus (HCV) is one of the major global causes of morbidity and mortality, recent estimates showed that >185 millions are infected worldwide. Chronic HCV infection is often associated with the development of liver cirrhosis, hepatocellular cancer, liver failure, and death. Saudi Arabia is the largest country in the Gulf region by population and area. There is large variability in HCV prevalence reported in different population groups in Saudi Arabia ranging from 0% among blood donors to 34.0% in high risk groups. MicroRNAs are short, non-coding RNAs that are partially complementary to regulatory regions of target messenger RNAs. MicroRNA binding suppresses translation of target mRNAs or promotes mRNA degradation. Measurement of serum microRNAs is reported to be correlated with the expression of these microRNAs in the liver. MicroRNA dysregulation is involved in all stages of hepatocarcinogenesis, their profiles have the potential to discriminate patients with HCC from those with other liver diseases. A number of studies have reported miR-21 to be frequently up-regulated in HCC tumors, while serum miR-122 is up-regulated in patients with HCC. In this study, we have investigated the levels of mir-21 and miR-122 in the serum of HCV related HCC cases compared to their levels in chronic HCV cases. Our result showed increased expression of both mir-21 and mir-122 in HCV related HCC cases and in chronic HCV cases with high fibrosis score compared to chronic HCV cases with low fibrosis score.

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