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Therapeutic potential of medicinal plants against Hepatitis C virus

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Hepatitis C virus is a major cause of chronic liver diseases which can lead to permanent liver damage, hepatocellular carcinoma and death. The presently available treatment with interferon plus ribavirin, has limited benefits due to adverse side effects and high cost. Hence, there is a need to develop anti-HCV agents, which are less toxic, more efficacious and cost-effective. The present study was aimed at making a sustained search for antiviral compounds and studies their therapeutic potential as anti-HCV drug. To this end, in-vitro bioassay was developed for screening antiviral activity of medicinal plant extracts. Fifty herbs were collected from different parts of Pakistan on the basis of reports (undocumented) of antiviral activity against different viral infections. Firstly, the effects of medicinal plant extracts were studied on the cellular growth of liver and fibroblast cells. Subsequently, HCV infected liver cells were treated with medicinal plant extracts at non toxic doses and replication of viral RNA was measured by Quantitative real time RT-PCR. Two out of fifty herbs exhibited activity against HCV in our in-vitro assay. In order to identify the active ingredient, corresponding herbal extracts were fractioned by thin layer chromatography (TLC), column chromatography and HPLC. Purified fractions were tested for activity against HCV in in-vitro assay. Resultantly three active fractions against HCV were identified and combination of these active fractions with interferon may open new avenues of future HCV therapies.

Biography

Usman Ali Ashfaq completed his PhD in Research Project "Studies on the therapeutic effect of selected phytochemicals against Hepatitis C Virus from Center of Excellence in Molecular Biology, University of the Punjab, Lahore. Usman Ali Ashfaq has 23 International publications with almost 57 Impact factor. He has 1 year pre PhD experience in Center of Excellence in Molecular Biology, University of the Punjab (1st March 2010- 29 Feb-2011 and 7 month post PhD Research Experience (March 2011 to Nov 2012) in Allama Iqbal Medical College and Research center. Usman Ali Ashfaq has work experienced on antiviral drugs against HCV, siRNAs against viral and cellular genes, fibrosis, oxidative stress, apoptosis and steatosis leading to HCC.

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