

3rd International Conference and Expo on

Natural, Traditional & Alternative Medicine

September 24-25, 2018 | Montreal, Canada

Formulation development, characterization and cell line study of nanoparticles of *Phyllanthus niruri* as potent natural drug to inhibition of hepatitis C virus

Makhan Singh

Rayat-Bahra Institute of Pharmacy, India

Hepatitis is major liver disorder all around the world and every 7-8 person is suffering from liver disorders like hemochromatosis, Epstein Barr Virus, non-alcoholic fatty, liver cirrhosis, and hepatitis A, B, C, D, and E but hepatitis C is major and life-threatening and many new cases find out all around the world every year. The cost of the treatment of Hepatitis C virus injection is very high with interferons. So I used natural and potent drug i.e *Phyllanthus niruri*. A Nano Technology used to develop nanoparticles using advanced and liver-targeted polymers for developing an effective antiviral therapy for HCV is the need of the hour. The viral enzymes NS3 protease and NS5B RNA dependent RNA polymerase are essential enzymes for polyprotein processing and viral RNA replication and thus can be potential targets for screening anti-HCV compounds. A large number of phytochemicals are present in plants, which are found to be promising antiviral agents. In this study, we have screened the inhibitory effect of different plant extracts against the NS3 and NS5B enzymes of hepatitis C virus. Methanolic extracts were prepared from various plant materials and their inhibitory effects on the viral enzymes were determined by in vitro enzyme assays. Effect on viral RNA replication was investigated by using TaqMan Real-time RT-PCR. Interestingly, *Phyllanthus niruri* root (PAR) extract showed significant inhibition of HCV-NS3 protease enzyme; whereas *P. niruri* leaf (PNL) extract showed considerable inhibition of NS-5B in the in vitro assays. Further, the PNR and PNL extract significantly inhibited replication of HCV monocistronic replicon RNA and HCV H77S viral RNA in HCV cell culture system. However, both PNR and PNL extracts did not show cytotoxicity in Huh7 cells in the MTT assay. Furthermore, an addition of PAR together with IFN- α showed an additive effect in the inhibition of HCV RNA replication. Results suggest the possible molecular basis of the inhibitory activity of PN extract against HCV which would help in optimization and subsequent development of specific antiviral agent using *P. niruri* as potent natural source.

mak.pharma21@gmail.com