

## 2<sup>nd</sup> International Conference on **Predictive, Preventive and Personalized Medicine & Molecular Diagnostics**

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## Personalized medicine and hepatitis C

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Hepatitis C Virus (HCV) is responsible for one of the most important viral pandemics infecting more than 170 million individuals around the world with a relevant link to severe chronic hepatitis, liver cirrhosis and hepatocellular carcinoma. Treatment of this infection was until recently based on a combined therapy using Pegylated Interferon and Ribavirin (RBV) for different time frames depending on the infecting viral genotype and to the response during treatment. In the last five years, there has been an increase in the understanding of the interactions among human genes and HCV infection. Another important progress was the introduction of viral protease, NS5A and polymerase inhibitors that largely increased the treatment response for this disease. It was also recently determined that some SNPs in the Inosine Triphosphatase (ITPA) gene also influence the anemia induced by RBV and some of this new drugs. A strong association between two SNPs near the Interleukin 28B (IL28B) or Interferon  $\lambda$  3 (IFNL3) gene was found with spontaneous HCV clearance and response to treatment. More recently, another polymorphism in the same region was found, leading to a frame shift that inactivates Interferon  $\lambda$  4 (IFNL4), while the  $\Delta$ G allele results in translation of IFNL4 protein that might be associated with a poor prognosis for the treatment. To improve the follow up of hepatitis C patients, particularly to increase response rates and decrease treatment side effects, the use of molecular markers to characterize the virus and the human polymorphisms cited above are increasing.

## Biography

João Renato Rebello Pinho graduated in Medicine (1984) and got his PhD in Biochemistry at the University of São Paulo (1995). He had held internships in France and the United States and worked in Adolfo Lutz Institute, Institute of Tropical Medicine, Foundation Pró-Sangue of São Paulo and Laboratório Bioquímico Jardim Paulista. Currently, he is Medical Coordinator at Laboratory of Special Techniques (Molecular Biology, Genetics and HLA) at Albert Einstein Diagnostic Medicine and is responsible for the Laboratory of Tropical Gastroenterology and Hepatology, Institute of Tropical Medicine, Department of Gastroenterology, School of Medicine, University of São Paulo.

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