

## Immune mechanisms of responsiveness to the combined treatment with IFN $\alpha$ 2b and isoprinosine in chronic hepatitis C

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Recombinant IFN $\alpha$  is the most prevalent chronic hepatitis C (CHC) treatment, but only half of the patients are responders. To study cell-mediated immune response, we used the combination of IFN $\alpha$ 2b with Isoprinosine or placebo under double-blind, placebo-controlled conditions for 6 months in 41 patients (20 active/21 placebo). To determine the basis of immune responsiveness, we measured TH1 (produce IFN $\gamma$ , IL-12) and TH2 (produce IL-4, IL-10) cytokines induced in whole peripheral blood (WPB) either spontaneously or by core peptides and mitogens induction. Dynamics of TH1/TH2 cytokine production during treatment were similar in both groups. Thus, IFN $\alpha$  therapy elevated spontaneous IL-12, but not IFN $\gamma$  production and unexpectedly enhanced IL-10 secretion. In comparing TH1/TH2 ratios in both active and placebo responders vs non-responders, we found that TH2 cytokines were critical for therapy outcomes. Only those patients who responded to Isoprinosine with inhibition of core-specific IL-10 production after first month of treatment lowered ALT levels, eliminated HCV (based on detection of HCVRNA). These changes were sustained during 6 months of follow up. Our study demonstrates that poor IFN $\alpha$  response in CHC was due to activation of IL-10 (TH2 cytokine) and that Isoprinosine reverses the up-regulating effects of IFN $\alpha$  on IL-10 production

### Biography

Elvira Hagina graduated from the Latvian University in 1985, Department of biology, speciality – biochemistry. She has completed her doctoral course in immunology in Riga Stradins University in 2002. She is the scientific researcher of Laboratory of Clinical Immunology and Immunogenetic Riga Stradins University and specialist of immunology in Clinical Immunology center Paul Stradins Clinical University Hospital. She has published more than 10 papers in reputed journals .