Secreted Interferon-Inducible Factors Restrict Hepatitis B and C Virus Entry In Vitro.

Abstract:
Interferon- (IFN-) has been used for more than 20 years as the first-line therapy for hepatitis B virus (HBV) and hepatitis C virus (HCV) infection, because it has a number of antiviral effects. In this study, we describe a novel mode of its antiviral action. We demonstrate that the supernatant from IFN--treated cultured cells restricted HBV and HCV infection by inhibiting viral entry into hepatoma cells. The factors contained in the supernatant competed with the virus for binding to heparan glycosaminoglycans—the nonspecific attachment step shared by HBV and HCV. Secreted factors of high molecular mass that bind to heparin columns elicited the antiviral effect. In conclusion, IFN- is able to induce soluble factors that can bind to heparan glycosaminoglycans thus leading to the inhibition of viral binding.