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VIRAL HEPATITIS

A rare dendritic cell population produces IFN-λ in HCV infection

Interferons (IFNs) have important immunomodulatory and antiviral activity in HCV infection. However, little is known about which cells produce these cytokines and how they become activated.

Gyongi Szabo and colleagues are investigating human innate immune response during HCV infection. In a study published in *Gastroenterology*, they hypothesized that human immune cells can recognize HCV-infected cells and produce IFNs in response.

To address this idea, human peripheral blood mononuclear cells were co-cultured with different populations of immune cells and an *in vitro* HCV cell culture (HCVcc/Huh7.5 cells). The researchers found that all three types of IFNs were produced. A rare subset of myeloid dendritic cells (namely, mDC2 cells) were identified to be the major source of IFN-λ production, including IL-28 and IL-29. Plasmacytoid dendritic cells produced IFN-α, and natural killer cells and natural killer T cells produced IFN-γ. Furthermore, generation of IFN-α and IFN-λ were linked in a positive feedback loop (which might contribute to the *in vivo* effects of IFN-based therapies).

"mDC2 cells are a minor cell population and are not well characterized in terms of their frequency, distribution and function during the course of HCV infection," says Szabo. "Studying all of these features in patients with HCV infection might reveal their clinical relevance."

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Original article Zhang, S. *et al.* Human type 2 myeloid dendritic cells produce interferon-λ and amplify interferon-α in response to hepatitis C virus infection. *Gastroenterology* doi:10.1053/j.gastro.2012.10.034