HEPATITIS

Genetic variant is associated with spontaneous clearance of HCV

A single nucleotide polymorphism 3 kb upstream of the *IL28B* gene is associated with spontaneous clearance of HCV in unselected populations, report Thomas *et al.* in *Nature*.

This polymorphism is strongly associated with a sustained virologic response to HCV treatment. "Thus, it seemed possible that this same variant might [also influence]

spontaneous clearance of the virus," explains lead researcher, Mary Carrington.

Carrington and colleagues genotyped 1,008 individuals from six independent HCV cohorts, 620 of whom had persistent infection;

the other 388 had spontaneously cleared the virus. She points out that "the CC genotype at this locus [is] associated with resolution of HCV

infection in individuals of European and African ancestry." Individuals with the CC genotype were three times more likely to clear the virus than those with the CT and TT genotypes combined.

"The frequency of the protective C allele varies remarkably across world populations," notes Carrington, whose team also analyzed genotyping data from 2,371 individuals from 51 populations.

IL28B encodes interleukin 28B (also known as interferon $\lambda 3$), one of three type III interferons. These molecules, which are activated by

viral infections and have antiviral properties *in vitro*, are encoded by three genes clustered together on chromosome 19q13.

Carrington and colleagues are now investigating the molecular genetics of this locus to gain understanding of the function and evolution of these genes. In parallel,

a phase II clinical trial is testing IL-29, one of the other type III interferons, as a treatment for HCV. "Maybe the protective form of IL-28B should be tested too," suggests Carrington.

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Original article Thomas, D. L. *et al.* Genetic variation in *IL28B* and spontaneous clearance of hepatitis C virus. *Nature* 461, 798–801 (2009)