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Gene variant provides clue to treating hepatitis C

An Australian-led team of international medical researchers has identified a variant in the interferon gene IL28B, linking it with the treatment of chronic hepatitis C virus.

Westmead Millennium Institute molecular geneticist, Dr David Booth and the University of Sydney hepatitis C expert, Professor Jacob George, led this important genetic discovery.

The international team examined the genomes of more than 800 individuals (including 300 Australians) receiving treatment for chronic HCV.

Results of the study published in today's online Nature Genetics article "IL28B is associated with response to chronic hepatitis C interferon-and ribavirin therapy" reports that L28B encodes an interferon-lambda that is involved with suppression of viruses including HCV.

Dr David Booth, who is also widely recognised for his work with multiple sclerosis and genes that cause autoimmune disease, says: "The same principles apply to hepatitis C infection as to MS: we inherit from our parents subtle differences in the make up of our immune system that can make a major difference in susceptibility to disease or how we respond to treatment.

"Finding each of the few genes that have such an impact gives science an edge in the eventual prevention or control of many of the major diseases of humankind."

The finding that inherited differences in the interferon lambda gene have such an impact on treatment benefit in Hep C provides a valuable new lead into the role of interferon lambda in this infection of epidemic proportion world-wide."

Hepatitis C, an infectious disease affecting the liver and a leading cause of liver disease, has a worldwide prevalence of nearly 300 million.

"The current standard treatment procedure for chronic HCV is combined therapy with pegylated interferon-alpha and ribavirin for a period of 48 weeks," says Professor Jacob George, Professor of Hepatology at the University of Sydney. "This treatment can have side effects and only about 40-50% of individuals infected with HCV show a positive response to it.

"The current study renews interest in therapies which involve this type of interferon, and suggest that combined treatment with interferon-alpha and interferon-lambda may prove a more effective treatment.

"It also highlights the potential benefits of individualised treatment, including the prediction of which patients are more likely to benefit, sparing others the cost and side effects associated with treatment."

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