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New research points to new therapy for hepatitis C treatment

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Combination therapies similar to those used for HIV patients may be the best way of treating hepatitis C virus (HCV), say researchers from the University of Leeds.

A study of a protein called p7, has revealed that differences in the genetic coding of the protein between virus strains - known as genotypes - alter the sensitivity of the virus to drugs that block its function.

The p7 protein assists the spread of HCV around the body and is a promising target for new drug treatments for the virus. Its role was discovered in 2003 by Dr Steve Griffin with Professors Mark Harris and Dave Rowlands of the University's Faculty of Biological Sciences. In laboratory tests their latest research shows that inhibiting p7 with drugs can prevent the spread of HCV.

"One of the challenges in finding treatments for viruses is their ability to constantly change their genetic makeup," says Professor Harris. "Our research shows there can't be a one-size-fits-all approach to treating HCV with p7 inhibitors in the future. We believe combination treatments will work much more efficiently, as they take into account the variability of the p7 protein."

Approximately 180 million people worldwide are infected by HCV, which causes inflammation of the liver and can lead to liver failure or liver cancer. Spread by contact with infected blood or other bodily fluids, there is no vaccine against the disease which is largely

asymptomatic in its early stages. The disease is currently treated with broad spectrum, non-specific anti-viral drugs.

Dr Griffin and Prof. Harris examined the response of HCV to a panel of compounds including the well known anti-viral drug, rimantadine, which targets a similar protein in the flu virus. They found that the drug's effectiveness was altered depending on the genetic makeup of the p7 protein.

"We 'borrowed' rimantadine to test its effects because p7 behaves similarly to a protein found in the flu virus," says Dr Griffin. " Although rimantadine works well in the laboratory, we now need to develop new drugs specifically targeted against p7 that we can take forward for future therapies."

Source: University of Leeds