

Press Release

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The protein Pellino3 may protect against Inflammatory Bowel Disease

A protein 'Pellino3' has been identified that may protect against inflammatory bowel diseases such as Crohn's disease. The research findings have been published in [Nature Immunology](#).

The research team led by Professor Paul Moynagh, Head of Department of Biology and Director of the Institute of Immunology at NUI Maynooth with support from collaborators in Trinity College Dublin and Silvia Melgar, Fergus Shanahan and others at the Alimentary Pharmabiotic Centre in University College Cork, has discovered a crucial role for a protein, Pellino3, in controlling unwanted inflammation in the intestine and therefore protecting against the development of Crohn's disease. According to the Crohn's & Colitis Foundation of America, 1 in 200 Americans struggle with Inflammatory Bowel Disease, while in Europe it is estimated that upward of two million are suffering with it.

Inflammation is the body's response to disease-causing micro – organisms. This involves the movement of white blood cells from vessels into the infected tissue where invading micro-organisms are destroyed. However the recruitment of white blood cells into tissues needs to be tightly controlled since prolonged tissue infiltration of these cells will lead to damage to normal healthy tissue. This will manifest as chronic inflammatory diseases with the symptoms of the disease being dependent on the site of inflammation.

When chronic inflammation occurs in the intestine, this can lead to conditions known as inflammatory bowel diseases of which Crohn's disease is an especially debilitating strand. This team has discovered that the levels of Pellino3 are dramatically reduced in Crohn's disease patients, which is a major advance in the understanding of inflammatory diseases of the digestive system.

The team is now building on these findings and aims to use Pellino3 as the basis for a new diagnostic for Crohn's disease and as a target in the design of drugs to treat this incurable disease.

Pellino3 ubiquitinates RIP2 and mediates Nod2-induced signaling and protective effects in colitis

Shuo Yang, Bingwei Wang, Fiachra Humphries, Ruaidhri Jackson, Marc E Healy, Ronan Bergin, Gabriella Aviello, Barry Hall, Deirdre McNamara, Trevor Darby, Aoife Quinlan, Fergus Shanahan, Silvia Melgar, Padraic G Fallon & Paul N Moynagh *Nature Immunology*(2013)doi:10.1038/ni.2669

