PublisherInfo		
PublisherName	:	BioMed Central
PublisherLocation	:	London
PublisherImprintName	:	BioMed Central

Gene linked to Crohn's disease

ArticleInfo		
ArticleID	:	4094
ArticleDOI	:	10.1186/gb-spotlight-20010523-02
ArticleCitationID	:	spotlight-20010523-02
ArticleSequenceNumber	:	165
ArticleCategory	:	Research news
ArticleFirstPage	:	1
ArticleLastPage	:	2
ArticleHistory	:	RegistrationDate : 2001–05–23 OnlineDate : 2001–05–23
ArticleCopyright	:	BioMed Central Ltd2001
ArticleGrants	:	
ArticleContext	:	130592211

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Crohn's disease is a chronic inflammatory disorder of the gastro-intestinal tract, thought to result from the effect of environmental factors in a genetically predisposed host. In the May 31 *Nature*, two independent research groups report on the identification of a mutation that increases susceptibility to Crohn's disease.

Gilles Thomas and colleagues from the Fondation Jean Dausett CEPH, Paris and Gabriel Nuñez and colleagues from the University of Michigan Medical School, both pinpointed the mutation to chromosome 16. The wild-type gene encodes a protein known as NOD2, which is involved in the recognition of microbes and signalling events leading to an appropriate immune response. The mutation impairs proper signalling and may result in an exaggerated inflammatory response.

Ogura *et al*. estimate that around 15% of patients with Crohn's disease have an altered form of the NOD2 gene. Having one copy of the mutated gene doubles the risk of developing the disease, while having two copies increases the risk 15-20-fold.

Gabriel Nuñez, from the US research team, said "It has been known for a long time that there is an important link between bacteria residing in the gut and genetic factors for the development of Crohn's disease. The discovery of NOD2 may explain this missing link between genes and bacteria."

Richard Driscoll, director of the UK's National Association for Colitis and Crohn's Disease, commented "This sounds like an exciting discovery. Our hope has always been to identify the factors that may be causing Crohn's disease and then find ways to block these factors or switch them off."

It is hoped that the discovery could lead to novel treatments for the condition, even though the mutation is thought to be just one part of disease development.

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