

Cornell scientists link E. coli bacteria to Crohn's disease

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A team of Cornell University scientists from the College of Veterinary Medicine, Weill Cornell Medical College and the College of Agriculture and Life Sciences have discovered that a novel group of E. coli bacteria – containing genes similar to those described in uropathogenic and avian pathogenic E. coli and enteropathogenic bacteria such as salmonella, cholera, bubonic plague – is associated with intestinal inflammation in patients with Crohn's disease in their research paper published July 12 by "The ISME Journal: Multidisciplinary Journal of Microbial Ecology."

Crohn's disease, an incurable inflammatory disorder of the intestine – most commonly found in the lower part of the small intestine called the ileum – affects 1-in-1,000 people in Europe and North America. Thus far, gut bacteria have long been suspected in playing a pivotal role in the development of Crohn's disease, but the specific bacterial characteristics that drive the inflammatory response have remained elusive.

Researchers at Cornell examined possible causes for the disease in patients with Crohn's restricted to the ileum and the colon versus healthy individuals.

"Given that only about 20 percent of fecal bacteria can be cultured, our group adopted a broad culture-independent approach to target specific subgroups of bacteria for quantitative in situ analysis and culture based characterization," said Kenneth Simpson, professor of small animal medicine at the College of Veterinary Medicine. "Our findings raise the possibility that a novel group of E. coli contains opportunistic pathogens that may be causally related to chronic intestinal inflammation in susceptible individuals. They suggest that an integrated approach that considers an individual's mucosa-associated flora in addition to disease phenotype and genotype may improve outcome."

The study found an increased level of E. coli

bacteria in more inflamed areas of the small intestines instead of MAP, a bacterium related to tubercle bacillus that has been more commonly associated with Crohn's.

Source: Cornell University

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