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PRESS RELEASE

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MONTREAL HEART INSTITUTE AND MOUNT SINAI HOSPITAL RESEARCHERS CONTRIBUTE TO MAJOR CROHN'S DISEASE STUDY

*Breakthrough study more than doubles the genetic information about Crohn's disease
offering hope for better-targeted therapy
for millions of people with inflammatory bowel diseases*

Montreal and Toronto, June 29, 2008 – Twenty-one new genetic risk factors associated with Crohn's disease have been discovered, more than doubling the amount of genetic information about the disease. An international consortium of Crohn's disease researchers combined efforts, including major contributions from Canadian researchers – Dr. John D. Rioux from Montreal Heart Institute and Université de Montréal and Drs. Mark Silverberg and Hillary Steinhart from Mount Sinai Hospital in Toronto – to publish this breakthrough study in *Nature Genetics*.

“This greatly increases our knowledge of the genetic architecture of Crohn's and gives us more detailed insight into the biological underpinnings of the disease,” says Mark J. Daly, PhD, of the Massachusetts General Hospital Center for Human Genetic Research and the Broad Institute of MIT and Harvard, the report's senior author.

In 2007, three studies compared the genomes of patients with Crohn's disease to those of healthy individuals – a North American-based study, led by Dr. John D. Rioux PhD, Associate Professor of Medicine at the Montreal Heart Institute (MHI) and the Université de Montréal and director of the Laboratory in Genetic and Genomic Medicine at the MHI, and input from colleagues at five other institutions, including contributions from Dr. Mark Silverberg, Staff Gastroenterologist, Mount Sinai Hospital and Assistant Professor of Medicine and Surgery at the University of Toronto, and Dr. Hillary Steinhart, Chief of Gastroenterology, Mount Sinai Hospital; a U.K. study supported by the Wellcome Trust; and a study by a group of French and Belgian investigators – identified a total number of Crohn's-associated genes to 11. Those explained only a small proportion of the heritability of Crohn's, which affects over a half a million people in the U.S and Canada.

The three teams combined their data in the current study that involved more than 3,200 Crohn's patients with more than 4,800 controls. This study not only confirmed the 11 previously identified genetic risk factors, but it also identified 21 new ones. These new discoveries continue to build a picture of factors leading to the inappropriate immune-system activation that characterizes the disorder.

“Given the fact that prior to 2007 we only knew of three genetic risk factors for Crohn's disease truly represents tremendous progress in our ability to understand Crohn's disease. Specifically this study is indicating which biological pathways specifically lead to Crohn's disease as well as which of these pathways are in common with other immune mediated diseases such as autoimmune diabetes, lupus and rheumatoid arthritis,” says Dr. Rioux, co-author of the current study.

"This is breakthrough research for patients with Crohn's disease and one of the most significant advances in our understanding of this disease, to date," says Dr. Silverberg, co-author of the study. "Our research was successful because of the international collaborative approach."

Finally, Rioux stated that “the hope is that the identification of the biological paths that lead to Crohn's disease can be translated into useful clinical tools for improved diagnosis, classification and treatment of this chronic disease.”

In total, the effort constituted a collaboration between clinical genetic researchers from 25 institutions across North America – including Yale University, University of Pittsburgh, Université de Montréal, University of Toronto, Johns Hopkins University, and Cedars-Sinai Medical Center in Los Angeles – the United Kingdom, Belgium and France. The team is committed to further advancing these results in collaboration with investigators from additional countries. Support for the study came from several organizations, including the National Institute of Diabetes and Digestive and Kidney Diseases, through the Inflammatory Bowel Disease Genetic Consortium.

About Crohn's diseases and ulcerative colitis

Inflammatory bowel disease, or IBD, describes two similar yet distinct conditions called Crohn's disease and ulcerative colitis. These diseases affect the digestive system and cause the intestinal tissue to become inflamed, form sores and bleed easily. Symptoms include abdominal pain, cramping, fatigue and diarrhea.

Crohn's disease may affect the gastrointestinal tract, from the mouth to the anus, and while Crohn's disease can not be cured by drugs or surgery, either may relieve symptoms. In Canada, an estimated 170,000 Canadian men and women suffer from IBD, most frequently between the ages of 15-25, or 45-55. It is particularly difficult for children and young adults since it often affects a person's self-concept. IBD is found throughout the world. However, it appears to be most common in North America and northern Europe with Canada having one of the highest incidences rates of IBD in the world. In the U.S., more than 1 million Americans have Crohn's or colitis.

About the Montreal Heart Institute: www.icm-mhi.org.
About the Université de Montréal: www.umontreal.ca.
About Mount Sinai Hospital: www.mountsinai.on.ca

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