

For immediate release

Attention: Health/Lifestyle/Science Editors

AllerGen-Funded Researchers Part of Team to Complete Most Comprehensive Genetic Study of Asthma to Date

GABRIEL Collaboration Findings Published in the New England Journal of Medicine

Hamilton, ON (22 September 2010) – The September 23, 2010 edition of the [New England Journal of Medicine](#), highlights the most comprehensive genetic study of asthma yet to be carried out. The study was performed by the European-based GABRIEL (*A Multidisciplinary Study to Identify the Genetic and Environmental Causes of Asthma in the European Community*) consortium, in collaboration with AllerGen-funded researchers across Canada and other groups in Australia, Europe and the UK. The GABRIEL collaboration consists of 164 scientists from 19 different countries and brings together 23 different research groups.

AllerGen NCE Inc. investigators, Drs Peter Paré, Professor, Department of Medicine and Pathology at The University of British Columbia; Denise Daley, Assistant Professor, Department of Medicine at the University of British Columbia; Tom Hudson, President and Scientific Director at the Ontario Institute for Cancer Research; Allan Becker, Professor, Pediatrics and Child Health at the University of Manitoba; Catherine Laprise, Associate Professor, Department of Biology l'Université du Québec à Chicoutimi; Andrew Sandford, Assistant Professor, Medicine at the University of British Columbia; Moira Chan-Yeung, Emeritus Professor of Medicine at the University of British Columbia; and Anita Kozyrskyj, epidemiologist and health services researcher at the University of Alberta, were key contributors in the GABRIEL collaboration and have a particular interest in the influence that gene-environment interactions have on asthma.

The GABRIEL consortium studied over 10,000 asthmatics and 16,000 normal subjects matched for each country of origin. Over half a million genetic tests were conducted by the consortium on each subject, covering all genes in the human genome.

Canadian researchers linked through the AllerGen NCE network made major contributions to the GABRIEL project. AllerGen NCE funded the genotyping for the Canadian cohort studies, the *Genome-wide association study of allergy and asthma in the Canadian Asthma Primary Prevention Study (CAPPS)*, the *Study of Allergy Genes and Environment (SAGE)* and the *Saguenay-Lac-St-Jean (SLSJ) asthmatic familial collection*, which contributed approximately 20% of the subjects in the GABRIEL study.

Researchers made a novel discovery: they were able to determine new genes that predispose individuals to asthma. “The collaboration has resulted in the largest Genome Wide Association Study (GWAS) for asthma and allergy phenotypes to date.” states Dr. Peter Paré. “Significant observations were made through the GABRIEL collaboration, such as genetic testing is not able to precisely predict which children may eventually develop asthma early in life. What this tells us is that environmental factors are also very important in asthma development.” Dr. Paré adds.

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“AllerGen NCE Inc. has invested approximately \$900,000 to support the excellent research initiatives of the GABRIEL collaboration” said Dr. Judah Denburg, Scientific Director and CEO of AllerGen NCE Inc. Dr. Denburg adds, “This multi-national collaboration is a best practice that will have a global impact. We now know which genes guide specific immune responses which lead to inflammation, injury and, in some cases, healing of the airways and lungs. These are momentous discoveries.”

Additional findings from the study were:

- Genetic effects are weaker in adults;
- Genetic variants had strong effects on cases of severe asthma; and that
- The most important gene previously associated with asthma in children (known as *ORMDL3/GSDMB*) does not have effects in patients who develop asthma after they enter adulthood.

Dr. Paré adds, “As a result of this collaboration, a further level of networking is taking place between AllerGen, GABRIEL and EVE (the North American equivalent of GABRIEL) with the purpose of looking at further combining studies that have appropriate commonalities for gene-environment associations.”

GABRIEL, a large-scale genome-wide association of asthma, is funded through an EC Framework 6 grant, involves over 150 scientists from 14 European countries, using the latest research across a variety of disciplines, including genetics, epidemiology and immunology, to identify key factors in the development of asthma. Contributing authors and centres for GABRIEL are listed on the GABRIEL website at <http://www.cng.fr/gabriel/>.

AllerGen NCE Inc., the Allergy, Genes and Environment Network, (est. 2004), is a national research network dedicated to improving the quality of life for people suffering from allergic and related immune diseases. Funded by Industry Canada through the federal Networks of Centres of Excellence (NCE) Program, the Network is hosted at McMaster University in Hamilton. For more information about AllerGen, please visit www.allergen-nce.ca.

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