

Media release

Major breakthrough in the treatment of autoimmune diseases
IRCM scientist demonstrates
basic active mechanism of immune-system cells

Montreal, November 15, 2004 -- In the upcoming issue of *Immunity*, a highly regarded journal put out by the *Cell* group, Dr. André Veillette, a scientist at the Institut de recherches cliniques de Montréal (IRCM), and his team will publish the results of a study that could revolutionize the treatment of autoimmune diseases, such as juvenile diabetes, lupus, and rheumatoid arthritis. Contemporary medicine has to date achieved only mixed results in dealing with these diseases, which affect hundreds of thousands of Canadians.

Dr. Veillette's team has discovered one of the basic mechanisms that control the production of antibodies by immune-system cells known as B lymphocytes or B cells. In subjects with autoimmune diseases, these lymphocytes, which are also normally responsible for fighting infection, are hyperactive, causing antibodies secreted by superactivated lymphocytes to turn against the body. This leads to the development of autoimmune diseases, which are characterized by debilitating inflammation and advanced tissue damage. Dr. Veillette's breakthrough identifies a cascade of molecular reactions involved in this type of damage, providing new therapeutic targets that could be used to reduce attacks on the pancreas in juvenile diabetes, on the kidneys in lupus, and on the joints in rheumatoid arthritis.

This publication is a major milestone for Dr. Veillette, an internationally recognized expert on the identification of molecular mechanisms that control the immune response. Initial findings were published in *Nature Immunology* in 2001, followed by an article in *Nature Cell Biology* in 2003. The article slated for publication in the November 2004

issue of *Immunity* provides genetic evidence of the importance of the molecular mechanism discovered by Dr. Veillette's team.

More precisely, this discovery links three elements: a receptor (or "sensor") located on the surface of the lymphocytes, known as SLAM; an adaptive protein (or "molecular relay") located in the cell, known as SAP; and FynT, an enzyme that is also located within the cell. Using mice with genetically mutated SLAM, SAP or FynT proteins, Dr. Veillette provided evidence of the importance of links among the three proteins. It should also be noted that SAP protein mutations occur in humans, causing a fatal immune dysfunction known as "X-linked lymphoproliferation" (XLP). Dr. Veillette's discovery paves the way for the development of SLAM, SAP or FynT inhibitors, which could block excessive immune responses observed in patients with autoimmune diseases.

The publishers of *Immunity* have issued a release on this discovery, which may be found at the following address: http://www.eurekalert.org/emb_releases/2004-11/cp-rip111004.php

To obtain a copy of this article, go to <http://www.eurekalert.org/jrnls/cell/pages/pdf/immunity/im215davidson.pdf> or send a message to hhardman@cell.com.

Dr. André Veillette is the Director of the Laboratory of Molecular Oncology at the IRCM. He holds the Canada Research Chair in Signalling in the Immune System. His work is supported by grants from the Canadian Institutes of Health Research, the National Cancer Institute of Canada, and the CANVAC National Centre of Excellence.

The IRCM (www.ircm.qc.ca) is recognized as one of the country's top-performing research centres. It has a mandate to establish links between research and patients, promote the prevention of illness, and train a new generation of high-level scientists. The IRCM has 30 research units and a staff of more than 450.

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