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uOttawa awarded \$1.5 million from the Genome Canada Technological Development Competition to develop new technology to analyze very rare cells in partnership with the NRC

Ottawa, May 5, 2008 - Genome Canada today announced an award of \$1.5 million to a team of scientists from the University of Ottawa lead by proteomic specialist Dr. Daniel Figeys to refine a technology developed in his lab that enables the identification and measurement of vanishingly small amounts of proteins from living cells. One of the great challenges of biology is to analyze so-called 'rare' cells which normally exist in small populations in the body. Stem cells, which can generate any human tissue, are a good example of these rare cells. The University of Ottawa will work in partnership with National Research Council Canada (NRC) scientists at the Steacie Institute for Molecular Sciences in Ottawa and the Industrial Materials Institute in Montreal to further improve the prototype instrument called the 'proteomic reactor'.

According to Professor Figeys, it has been virtually impossible to analyse proteins in the body's rare cell populations because there are so few cells to work with, and the normal lab methods of concentrating proteins from these cells are too inefficient. The proteomic reactor, on the other hand, sidesteps these problems. It has the capability to rapidly extract and process proteins even when they are present in vanishingly small volumes. Part of this processing is the identification of individual proteins, a first step in working out how they function in the cell. The project will also utilize micro and nanofabrication technologies as well as surface chemistry developed at the NRC to further miniaturize and integrate the process.

Over the next two years, the project will employ up to 13 young researchers at the graduate and post-doctorate levels to help develop the reactor into formats that handle different sample sizes, from bulk tissues like blood and plasma right down to samples that contain just a few cells. Professor Figeys says that the project has already attracted the interest of a potential partner in Canadian industry.

The University's Vice-President for Research, Professor Mona Nemer, expresses her enthusiasm and states that the project brings together international expertise in proteomics technology, microfabrication technologies and the biology of rare cell populations. "The benefits will be significant," she predicts. "They include the development of techniques that will advance our knowledge of the cell proteome, provide possibilities for commercialization and train the next generation of scientists to utilize these technologies."

"The Technology Development Competition is a part of Genome Canada's mandate to fund a wide range of large-scale genomics and proteomics research projects through a competitive process," said Dr. Martin Godbout, President and CEO of Genome Canada. "We are proud of the process and the results of 13 winning projects for a Genome Canada total funding of 9.37 million dollars."

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