

***Success of the Génome Québec and  
Université de Sherbrooke RNomics Platform***

**Researchers at the UdeS Discover a New Method  
for Diagnosing Cancer**

**Sherbrooke, February 1<sup>st</sup>, 2008** – A team of researchers in the Faculté de médecine et des sciences de la santé at the Université de Sherbrooke has discovered new molecular markers for the detection of ovarian cancer.

Published today in the scientific journal *Cancer Research*, this study, under the direction of Professor Sherif Abou Elela of the Department of Microbiology and Infectious Disease, describes a new molecular signature for the assessment of ovarian cancer and perhaps other types of cancer.

This paper documents the first discoveries from the Génome Québec and Université de Sherbrooke RNomics Platform, inaugurated on November 3, 2006 at the Université de Sherbrooke. The Laboratoire de génomique fonctionnelle de l'Université de Sherbrooke research team considers this the first of many discoveries linking specific molecular signatures, known as RNA splice variants, with different diseases, leading to better diagnostics and assessments of treatment. As stated by Professor Abou Elela, «We knew that the RNomics Platform was going to yield results that would advance science. We now have tangible proof.»

**A Signature for Ovarian Cancer**

Ovarian cancers are often detected late, since there is no screening test and the symptoms resemble that of other disorders. While there are therapies for such cancers, their chances of success are much greater if diagnosis and management occur early in the disease's development.

Currently, pathologists examine tissue samples in order to establish a diagnosis of ovarian cancer. With the discovery of these molecular markers, it will now be possible to determine more accurately if the ovarian tissue sample contains cancerous or normal cells. Génome Québec and the Université de Sherbrooke's robotized RNomics Platform enables researchers to study the large variety of RNA forms (referred to as splice variants). The research conducted by the Sherbrooke team has identified many genes whose splice variants could be associated with the transformation of healthy tissue into cancerous tissue.

Out of 600 genes studied, Professor Abou Elela's team discovered about 50 genes forming a splice variant signature associated with ovarian cancer. Most genes products are spliced, which means that a single gene may be expressed in a variety of forms. On average, each gene product can be spliced into four or more forms, thereby producing four or more different proteins. The 50 or so ovarian-cancer signatures were discovered by studying these different splice forms of the 600 cancer genes.

«These discoveries are just the beginning of what our research can lead to, affirmed Professor Abou Elela. The next step will be to apply this discovery to the performance of cancer treatments. As a result, the treatments could be much more targeted.»

Professor Réjean Hébert, Dean of the Faculté de médecine et des sciences de la santé (FMSS), adds that, «the research carried out within our faculty is advancing the fight against cancer. We think it is important for the public to realize that the funding granted by the government and the donations received go into major, concrete discoveries, such as the one published today.»

### **UdeS's Laboratoire de génomique fonctionnelle**

The Laboratoire de génomique fonctionnelle, founded in 2003, is involved in the analysis of a set of genes associated with cancer. The research projects, under the scientific direction of Professor Sherif Abou Elela, will lead to the production of a series of markers associated with cancer, making it possible to develop diagnostic tools. The laboratory, affiliated with the Department of Microbiology and Infectious Disease in the FMSS, receives funding from Genome Canada, Génome Québec, the Université de Sherbrooke, and the Canadian Institutes of Health Research.

The Laboratoire de génomique fonctionnelle and the Génome Québec and Université de Sherbrooke RNomics Platform were created through the efforts of professors Sherif Abou Elela and Benoit Chabot and their collaborators, who have earned distinction many times over in international calibre competitions. As the result of the uniqueness of the technologies used, the Université de Sherbrooke has taken a prominent position in the field of RNA molecular genetics. RNA is present in every cell of all living beings. More than 20 highly qualified individuals are involved in operating these facilities.

### **About the Génome Québec and Université de Sherbrooke RNomics Platform**

Funded by Génome Québec and the Université de Sherbrooke, the RNomics Platform was created in November 2006 and meshes with the research activities of the FMSS. It provides researchers and clinicians from academia and industry with automated services for the rapid acquisition and analysis of RNA molecular genetics data.

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