



November  
2004

# New Research Breakthroughs at UHN

Inside this  
issue...


## [New Research](#)

### New Treatment Regime Increases Survival of Patients With Advanced Prostate Cancer

New Treatment  
for Prostate  
Cancer

An international study led by OCI/PMH's Dr. [Ian Tannock](#) points to a new standard of treatment for men with advanced, incurable prostate cancer.

Clues to Cause  
of Autoimmune  
Disease  
Uncovered

The two-year study involving 1,000 men in 24 countries has proven  that the drug called docetaxel, when taken in combination with prednisone, improved survival by an average of three months when compared to men given the current treatment regime. It also had a greater chance of improving pain and quality of life in patients with symptoms from their disease, although there was some increase in toxicity.

A Busy Brain  
May Overlook  
Pain

“Treatment with docetaxel resulted in many patients feeling better and living longer,” says Dr. Tannock. “It is for this reason that we're recommending docetaxel every three weeks, with daily prednisone, as the new standard of treatment for patients with prostate cancer resistant to hormone therapy.”

Protein Critical  
for Genome

Clues for  
Treating Rare  
Cancer  
Revealed

Dr. Tannock's findings were featured in the October 20, 2004 issue of [Macleans](#) magazine.  
*N Engl J Med. 2004 Oct 7;351(15):1502-12.*  
[\[PubMed abstract\]](#)

Group Therapy  
Eases Cancer  
Fears

Institute: OCI/PMH  
Division: Experimental Therapeutics


## [Breaking News](#)

### Research Points to Cause of Autoimmunity

\$16.9M from  
CFI

Why are some people more likely to develop an autoimmune disease than others? Although many believe it may be due to a process called molecular mimicry, Dr. [Pam Ohashi's](#) (AMDI/OCI/PMH) research suggests otherwise.

\$13M from  
CIHR

According to the theory of molecular mimicry, people who develop  autoimmune diseases such as diabetes or arthritis may have a naturally occurring protein that looks very much like a protein from a virus or bacteria. If these people ever became infected with this “look alike” pathogen, their immune cells could be spurred to attack their normal proteins as well as the real pathogen. This results in autoimmune disease.

New CRC's  
Announced

UHN Pioneers  
Honoured

Says Dr. Ohashi, “Our model shows for the first time that there must be a very

tight bond between the infecting pathogen and the attacking immune cells before autoimmune disease can develop. It also shows that most people have genes that protect them from this process, indicating that molecular mimicry likely isn't the cause.”

*Nat Med.* 2004 Oct 3;10(11):1234-39.

[\[PubMed abstract\]](#)

Institute: AMDI/OCI/PMH  
Division: Cell & Molecular Biology

## A Busy Brain May Overlook Pain

Using functional MRI techniques, Dr. [Karen Davis](#) and PhD student David Seminowicz (Krembil/TWH) have found evidence to support the idea that in some people, a busy brain may divert their attention away from a painful experience.

The researchers applied a mildly painful stimulus to 16 healthy volunteers who were busy concentrating on a task, and measured how their brains perceived the stimulus. They found that while the stimulus made some people lose their focus, it sharpened the concentration of others. In this latter group of people, it also reduced their pain-related brain activity.

“The fact that there are two different types of responders suggests that different people deal with pain in different ways,” says Dr. Davis. “Our results show a biological basis for the finding that cognitive therapies may be useful for treating pain in some people.”

*Pain.* 2004 Nov;112(1-2):48-58.

[\[PubMed abstract\]](#)

Institute: Krembil/TWH  
Division: Applied & Interventional Research

## Protein Essential for Fetal Development and Genome Stability

New research by [Razq Hakem](#) and [Jeremy Squire](#) (OCI/PMH) reveals that a novel protein called Lats2 is extremely important for regulating cell division and the survival of developing embryos.

In this study, researchers assessed the growth of fetal mice missing the Lats2 gene. They found that mice missing Lats2 did not survive to birth—likely because many of the fetal mouse cells were genetically unstable.



“Chromosomal instability is observed in the majority of tumour types,” says Dr. Hakem. “The fact that fetal mice and cells missing Lats2 had unstable chromosomes and were unable to control cell division points to Lats2 as having

a potential role in cancer.”

Studies are currently underway to determine Lats2's role in the development and progression of cancer.

*EMBO J. 2004 Sept 15;23(18):3677-88.*

[\[PubMed abstract\]](#)

Institute: OCI/PMH

Division: Cell & Molecular Biology

## Discovery Offers Clues for Treatment of Rare Cancer

New research by Dr. [Keith Stewart](#) (TGRI/TGH) may offer new clues for the treatment of multiple myeloma, a rare form of cancer that affects the immune system's antibody-producing plasma cells.

People with multiple myeloma have too many plasma cells, and as a result, they suffer from weakened bones, damaged kidneys, anemia, and a poorly functioning immune system. Dr. Stewart's research reveals that these people have an excess of a protein called HACS1, which is important for the growth and development of plasma cells.

“With our discovery of HACS1, we've solved another piece of the puzzle regarding how plasma cells grow and develop,” says Dr. Stewart. “Much more work is required but it is possible that HACS1 may ultimately be a target in curbing plasma cell growth in people with this disease.”

*J Exp Med 2004 Sept 20;200(6):737-47.*

[\[PubMed abstract\]](#)

Institute: TGRI/TGH

Division: Experimental Therapeutics

## Group Therapy Eases Breast Cancer Fears

Group therapy improves anxiety, depression, and psychosocial functioning in women who are at higher risk for breast and ovarian cancer because they carry mutations in BRCA1/BRCA2 according to a recent study conducted by Dr. [Mary Jane Esplen](#) (TGRI/TGH).

To determine if psychosocial supports would help women deal with their diagnosis, 70 women were recruited to take part in 12 sessions of group therapy. All 67 women who completed the sessions had fewer cancer worries and less depression and anxiety.



Says Dr. Esplen, “Our findings reveal that a support group is extremely beneficial for women who carry mutations in BRCA1/BRCA2. By giving them an opportunity to discuss their concerns and also share thoughts around their

decisions regarding prophylactic surgery, it decreased their stress significantly.”  
*Cancer*. 2004 Nov 15;101(10):2327-40.

[\[PubMed abstract\]](#)

Institute: TGRI/TGH

Division: Behavioural Sciences & Health

## Breaking News from UHN Research

### Three UHN Researchers Win \$16.9M From CFI

UHN Research extends its congratulations to Drs. [David Jaffray](#) (OCI/PMH), [Gary Levy](#) (TGRI/TGH) and [Tak Mak](#) (The Campbell Family Institute for Breast Cancer/PMH) who together won \$16,894,472 from the Canada Foundation for Innovation's (CFI) Research Hospital Fund.

Announced on November 22, 2004, the funds will provide Canada's research hospitals with the tools they need to be internationally competitive. The funds awarded to UHN will support the development of three centres that will study advanced imaging techniques, develop new image-based diagnostics and treatments for a range of diseases, and develop new anti-cancer drugs.

### UHN Researchers Net Over \$13M From CIHR

In recent funding announced by the Canadian Institutes of Health Research (CIHR), UHN researchers have won over \$11.7M for 23 health research projects. The funding will be used to study a variety of subjects including Parkinson disease, brain damage, cancer and mental illness.



In another funding announcement, CIHR announced that TWH/Krembil's [Dr. Michael Fehlings](#) will lead one of Canada's eight new research teams that will stimulate the development of world-class regenerative medicine and nanomedicine. Dr. Fehlings and his team were awarded \$1.5M and their research will delve into regenerative medicine strategies for spinal cord injury and repair, stem cell biology, nanotechnology, bioengineering approaches and neurosurgical application.

### Two UHN Researchers Awarded CRC's

Congratulations to Drs. [Denise Belsham](#) and [John Floras](#) (TGRI/TGH), each awarded a Canada Research Chair on November 12, 2004.

Dr. Belsham holds a Tier II Chair in Neuroendocrinology and Dr. Floras holds a Tier I Chair in Integrative Cardiovascular Biology.

Tier I Chairs, worth \$1.4M over seven years, are awarded to experienced investigators recognized internationally for their achievements. Tier II Chairs,

worth \$500,000 over five years, are awarded to promising new investigators.

## UHN Pioneers Honoured

On November 5, 2004, the Canadian Institutes of Health Research (CIHR) and the Stem Cell Network recognized the enormous contribution that UHN's Drs. [James Till](#) and [Ernest McCulloch](#) have made to stem cell research by naming an international symposium day in their honour.



The *Till, McCulloch and Leblond International Symposium* was held in Montreal and featured presentations by leading stem cell researchers.

### Research Fact

UHN's annual research budget has now topped \$155M, as detailed in the new 2004 Research Report.



Learn more about other recent achievements at UHN including progress at the Toronto Medical Discovery Tower, strategic planning, and breakthroughs in research—all of which are described in the report.

To request your copy, please email Cheryl Adamo at [cadamo@uhnres.utoronto.ca](mailto:cadamo@uhnres.utoronto.ca).

---

### Feedback/To Unsubscribe

Net Results EXPRESS is brought to you by UHN Research Communications. We hope you have enjoyed receiving this message. If you have any feedback, or if you wish to unsubscribe, please email [sazzam@uhnres.utoronto.ca](mailto:sazzam@uhnres.utoronto.ca).

Images adapted from image archives of RSS, Dr. Razq Hakem, stock.xchng, and NCI.