

Communiqué
For immediate release

IRCM scientists identify a mutant mouse that reproduces Parkinson's disease

Montréal, May 30, 2003 - A group of scientists led by Dr Jacques Drouin of IRCM, in collaboration with colleagues from the Montréal Neurological Institute and Centre hospitalier de l'Université de Montréal (CHUM), will publish in the June issue of *Development*, the results of studies that lay the groundwork for a genetic understanding of the causes of Parkinson's disease.

A group of neurons, known as dopaminergic neurons, are essential for motor functions. Patients afflicted with Parkinson's disease lose some of these neurons and this causes a deficiency in dopamine and ultimately leads to movement disorders characteristic of the disease.

IRCM scientists have shown that a particular gene, named *Pitx3*, plays a crucial role for the survival of dopaminergic neurons. This gene is expressed in a region of the midbrain that is associated with movement control. The scientists showed that a mutation in the mouse *Pitx3* gene leads to cell death of *Pitx3*-expressing neurons and that *Pitx3*-expressing neurons correspond to those that are lost in Parkinson patients. This mutation causes a greater than 90% deficiency in dopamine and leads to a loss of spontaneous movement that is similar to Parkinson's disease.

In brief, the progressive loss of neurons leading to Parkinson's disease has been reproduced in mice. This breakthrough opens the way to the elucidation of mechanisms leading to Parkinson's disease and may provide opportunities for treatment by gene and cell therapy. References are available at the following address <http://dev.biologists.org/cgi/content/abstract/130/11/2535>

The research was funded by GlaxoSmithKline, the Canadian Institutes of Health Research and the Parkinson Society of Canada

"It is a privilege to contribute to basic health research in Canada and to partner with the IRCM," said Dr. Kevin Fehr, Director, Basic Research & Genetics at GlaxoSmithKline Inc. "We congratulate Dr. Drouin and his team on their important work, which will advance our understanding of Parkinson's disease and may ultimately improve outcomes for patients in Canada and around the world."

"In contrast to a few years ago, research on the role of genes or of genetic components in the incidence of Parkinson's Disease is now generating tremendous interest," says Dr. Rémi Quirion, Scientific Director, Institute of Neurosciences, Mental Health and Addiction of the Canadian Institutes of

Health Research. "It is leading to major breakthroughs such as the discovery made by Dr Drouin's team and opening novel avenues for treatment of Parkinson's disease."

IRCM is devoted to studying the causes of disease, developing new diagnostic procedures and discovering preventive and therapeutic approaches that help to enhance our quality of life. Recognized as one of the top-performing research centres in the country, the IRCM currently houses 30 specialized research laboratories working in fields as varied as medicinal chemistry, molecular biology, functional genomics, clinical research, biomedical engineering and bioethics. More than 450 people work at the Institute. The IRCM's mission as a training centre is crucial. We are helping to educate the next generation of scientists, training more than 235 young scientists every year.

-30-

Source :

François Brochu
Directeur des communications et du fonds de développement
Institut de recherches cliniques de Montréal (IRCM)
Tél: 514- 987-5730

Jacques Drouin, D.Sc., MSRC
Titulaire de la Chaire GlaxoSmithKline
en génétique moléculaire
Institut de recherches cliniques de Montréal (IRCM)
Tél: 514- 987-5579