



**Communiqué
Pour diffusion immédiate**

The battle against colorectal cancer
**Professor Sylvain Martel obtains \$1,9-million grant
from CQDM**

Montréal, September 13^t, 2011 - The Québec Consortium for Drug Discovery (CQDM) announces that it has granted \$1,9 million in funding to Professor Sylvain Martel, Director of Polytechnique Montréal's Nanorobotics Laboratory, for his research project on colorectal cancer treatment.

When fiction becomes reality

Professor Martel believes that oncologists could one day see their dreams come true. The ability to precisely target cancerous cells while avoiding exposing the body's healthy cells to the toxic effects of drugs will soon be a medical reality, thanks to the research work of Professor Martel and his team. Known for being the world's first researcher to have guided a magnetic sphere, *in vivo*, through an artery, Professor Martel is once again testing the limits of technology in his new project to deliver a drug via magnetic resonance. Having recently succeeded in guiding microcarriers loaded with cancer-fighting medication into a rabbit's liver, Professor Martel now hopes to apply the technique in humans within four years to treat colorectal cancer.

Revolutionizing cancer treatment

This time, it is not microcarriers that are used to deliver the drugs to the tumour site, but bacteria. With a diameter of 2 micrometres, or 25 times smaller than the diameter of a microcarrier, the bacteria have the advantage of being able to navigate through tiny blood vessels to reach targets that are inaccessible to microcarriers. The cancer-fighting drug is placed in a capsule and attached to the bacteria. An artificial pole is created to attract them to the centre of the tumour, where they will die after 30 to 40 minutes. The envelope breaks and the drug is released.

This is not the first discovery for Professor Martel, a true world leader in the realm of nanorobotics. "I really like to invent, to create. I don't like doing what's already being done. When nobody believes in a new idea, I tell myself that it's a project for me. Until now, all our goals have been reached," he says humbly, a smile on his face.

Unifying effort

This major project, under Polytechnique's guidance, is the result of close collaboration with Université de Montréal, McGill University and Univalor. "It's quite a big challenge to bring together seasoned researchers from various disciplines and to break through the barriers and differences in scientific language," explains Professor Martel, who is leading the project. "Engineering is unfortunately often excluded from medical research. We forget that it can play key roles in areas other than traditional engineering fields."

The work of Professor Martel's team and its collaborators is being carried out in partnership with three pharmaceutical industry giants: AstraZeneca Canada, Merck Frosst Canada and Pfizer Canada.

"The CQDM is very proud to be associated with Professor Martel's team for this project," says Diane Gosselin, CQDM Vice-President, Research and Business Development. "Our funding will help the project go through all the necessary steps for regulatory approval and the start of clinical trials."

About Polytechnique Montréal

Founded in 1873, Polytechnique Montréal is one of Canada's leading engineering teaching and research institutions. It is the largest engineering university in Québec for the size of its student body and the scope of its research activities. With over 37,000 graduates, Polytechnique Montréal has graduated 24% of the current members of the l'Ordre des ingénieurs du Québec. Polytechnique provides training in 14 engineering specialties, has 239 professors and more than 6,900 students. It has an annual operating budget of over \$200 million, in addition to a \$72-million research budget.

Website for Polytechnique Montréal's Nanorobotics Laboratory: www.nano.polymtl.ca/.

About the CQDM

The Québec Consortium for Drug Discovery (CQDM) is a meeting ground for all stakeholders in biopharmaceutical research. Its principal mission is to fund research projects carried out in partnership between the academic and hospital milieus in the public sector and the pharmaceutical and biotechnology industries in the private sector. An innovative Canadian initiative, the CQDM has a twofold goal: to accelerate the drug discovery process and to develop safer and more effective drugs. Project funding is made possible through contributions from Pfizer Canada, AstraZeneca, Merck, Boehringer Ingelheim (Canada) Ltd., GlaxoSmithKline, Eli Lilly Canada Inc., the Business-Led Networks of Centres of Excellence (BL-NCE), the Ministère du Développement Économique, de l'Innovation et de l'Exportation (MDEIE) du Québec and the Fonds de la Recherche en Santé du Québec (FRSQ).

For more information: www.cqdm.org.

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