



Le génie pour l'industrie

Centre intégré
universitaire de santé
et de services sociaux
du Nord-de-
l'Île-de-Montréal

Québec 

FOR IMMEDIATE RELEASE
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**A first for ÉTS and the CIUSSS du Nord-de-l'Île-de-Montréal:
A medical instrument approved by American and Canadian health authorities**

École de technologie supérieure (ÉTS) and the Centre intégré universitaire de santé et de services sociaux (CIUSSS) du Nord-de-l'Île-de-Montréal are proud to announce that the Y3 implant, which helps to repair fractures of the greater trochanter (upper section of the femur), was approved by the Food and Drug Administration (FDA) and by Health Canada. This is the first time a medical device developed at ÉTS that is intended to be implanted into the human body has received approval from both of these organizations, and ÉTS was actively involved in the entire process.

The project involving the Y3 proximal femoral plate system was launched in 2007, under the leadership of Yvan Petit, a Researcher at Hôpital du Sacré-Cœur de Montréal and a Professor in the Mechanical Engineering Department at ÉTS, along with Dr. Georges-Yves Laflamme of Hôpital du Sacré-Cœur de Montréal and Yan Bourgeois of ÉTS, who was a Master's student at the time. Since 2014, the project has been receiving funding from AmorChem I.p., a venture capital company, along with technical support from Pega Medical in Laval.



According to Yvan Petit: "It is quite rare for a researcher to see the results of his research translated into a commercial product approved by the health authorities. We are members of a very small club. However, my greatest joy comes from the realization of my desire to carry out research that leads to concrete results that make a real difference for surgeons as well as for patients."

Now that it has been approved by the FDA and Health Canada, the implant can be commercialized and used for patients, especially those treated by Dr. Laflamme. These first cases will be the subject of a clinical study, the results of which will be published in scientific journals.

The fruit of 10 years of research

The fracture of the greater trochanter is a complication that affects many patients who have undergone a total hip arthroplasty, because the operation causes the bone to become fragile. “With a failure rate of approximately 30%, the existing solutions for repairing these types of fractures are unsatisfactory. It was necessary to invent a new one”, Petit continued. The Y3 implant, with two branches that form the shape of a Y, allows the greater trochanter to be fixed, and as a result, reduces complications caused by this type of fracture.

Obtaining these approvals is the culmination of the research work carried out by ÉTS and *Hôpital du Sacré-Cœur de Montréal*. Dr. Laflamme presented the challenge to Professor Yvan Petit’s research team: repair fractures of the greater trochanter following the procedures involved in hip-replacement surgery.

Professor Petit’s team began by designing a prototype, and then developed a proof of concept, which was financed by the Natural Sciences and Engineering Research Council of Canada (NSERC). When the patent was issued, the project was still too close to the embryonic stage to attract the interest of partners, so Yvan Petit and his team continued to improve the prototype using internal funding until 2014, when AmorChem came on board to finance the continuation of the research process, with the ultimate objective of obtaining approval from the health authorities.

Now that this has been achieved, the implant, which is produced by Pega Medical, can be commercialized in the United States and Canada. AmorChem is currently seeking commercial partners. In fact, a commercial licence has been signed by ÉTS, Univalor (the owner of intellectual property at *Hôpital Sacré-Cœur*) and AmorChem. Jacques Simoneau, President and CEO of Univalor, pointed out: “It gives us great pleasure to see that an innovation that was developed at a university research laboratory has received the authorizations required for commercialization. At the end of the day, the patients are the ones who will benefit most from the approval of this technology, which will facilitate their healing.”

Dr. Inès Holzbour, Managing Partner at AmorChem, concluded: “We appreciate the work done by the entire team that led to the approval of the Y3 implant. This crucial first step will help us to proceed with the commercialization of this product in order to make it available to patients.”

The success of the Y3 implant project is a source of motivation for many researchers who wish to transform their work into recognized innovations and who add value to society as a whole.

ÉTS and the *CIUSSS du Nord-de-l’Île-de-Montréal* would like to congratulate Professor Petit’s team and their partners for their remarkable achievement, their determination and their talent.

Their hope is for international success for the Y3 implant, and all the more so as it makes a positive difference in the lives of many people.

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About CIUSSS du Nord-de-l'Île-de-Montréal

With 26 health and social services facilities located in five boroughs in the northern part of Montréal, the *CIUSSS du Nord-de-l'Île-Montréal* is responsible for organizing and developing health and social services for the 436,000 Montrealers who live within its territory. It also provides specialized services to 1.8 million Quebecers in other regions, most notably in the fields of traumatology and respiratory, cardiovascular and mental health. The *CIUSSS du Nord-de-l'Île-de-Montréal* is affiliated with *Université de Montréal*, and focuses on three main areas of research: social research, research related to the mental health of children and adolescents and biomedical research.

About AmorChem

Located in Montréal, AmorChem is a venture capital fund that invests in projects developed by Québec-based universities and research centres. AmorChem's innovative business model consists of investing in projects in the early stages of research and helping them to achieve a pre-clinical proof of concept within a horizon of 18 to 24 months. The objective of the investments is to sell projects that have reached the proof of concept stage to companies that are active in life sciences, or to create companies based on these projects. The AmorChem model has already borne fruit. Two projects have been involved in transactions with Roche and Vertex Pharmaceuticals, and four companies have been launched based on projects in its portfolio: Mperia Therapeutics Inc., Semathera Inc., Corbin Therapeutics Inc. and SpecificiT Pharma Inc. AmorChem also launched NuChem Therapeutics Inc., a medicinal chemistry service company that supports projects related to "small molecules".

About Univalor

Univalor is a university research valorization company. Since 2001, Univalor has been commercializing scientific findings and technological innovations emanating from some 2,600 researchers from *Université de Montréal* and its affiliated health centers, Polytechnique Montréal and HEC Montréal. Its mission is made possible thanks to the support of the *Ministère de l'Économie, de la Science et de l'Innovation*. By creating links between the university and the business community, Univalor helps to make businesses more competitive, generate revenue for research, and most importantly, enrich society.

About ÉTS

École de technologie supérieure is one of ten constituents of the Université du Québec network. ÉTS trains engineers and researchers who are recognized for their practical and innovative approach, developing new technologies and transferring them to companies. Nearly 25% of all engineers in Québec graduate from ÉTS, which houses more than 10,500 students, including close to 2,700 at the graduate and post-graduate levels. ÉTS specializes in applied training and research in engineering, and maintains a unique partnership with the business world and the industry sector.



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