

RACE FOR THE DISCOVERY OF COVID-19 MEDICATIONS

GÉNOME QUÉBEC, IN PARTNERSHIP WITH IRIC, UNIVERSITÉ DE MONTRÉAL AND MILA ANNOUNCE FUNDING OF \$1M IN SUPPORT OF UNPRECEDENTED RESEARCH COMBINING GENOMICS AND ARTIFICIAL INTELLIGENCE

Montreal, June 17, 2020 - Génomique Québec, in partnership with the Institute for Research in Immunology and Cancer (IRIC) of the Université de Montréal, Université de Montréal, Mila – Quebec Artificial Intelligence Institute and McMaster University, is proud to announce funding for a new research project intended to accelerate the discovery of antiviral COVID-19 medications. Spearheaded by professors **Michael Tyers** (IRIC/Université de Montréal), **Yoshua Bengio** (Mila/Université de Montréal) and **Anne Marinier** (IRIC/Université de Montréal), the \$1 million project was launched in fast-track mode on June 1, 2020.

The project combines genomics, artificial intelligence and medicinal chemistry to discover new inhibitors of the SARS-CoV-2 virus that causes COVID-19. The use of genomic screens will lead to a better understanding of the genetic interactions between the virus and human host cells and thereby the identification of new targets for drug discovery. Artificial intelligence will be used to design novel chemical inhibitors against viral proteins and human host proteins on which the virus depends. And finally, with advanced medicinal chemistry, the team will be able to synthesize and test these inhibitors.

“We are very enthusiastic about combining our expertise in the fields of genomics, artificial intelligence and medicinal chemistry to understand how the virus interacts with human cells and to design new inhibitors of viral replication,” said Michael Tyers, Principal Investigator at IRIC’s Systems Biology and Synthetic Biology Research Unit.

“Medicinal chemistry will play an important role in this research because it will enable us to validate and improve new genomics and AI-based approaches to drug discovery. We are delighted to contribute to research efforts aimed at defeating this global pandemic,” added Anne Marinier, Principal Investigator, Director of Medicinal Chemistry and Director of IRIC’s Drug Discovery Unit.

Over the long term, this combined genomics/artificial intelligence approach could help significantly accelerate — when compared to traditional approaches — the discovery of antiviral medications for future pandemics. The approach can also be applied to the development of new treatments for cancer and many other diseases.

“This is an exciting project, first because of its potential to discover medications that could have a significant impact on COVID-19, then because the methodology used could be generalized to research into new therapeutic molecules in other areas. And finally, because the project raises research questions that are way off the beaten path, which will contribute to advancements in science as a whole,” explained Yoshua Bengio, Scientific Director of Mila.

By consolidating world-renowned expertise in genomics, artificial intelligence and medicinal chemistry, this project is placing Québec and Canada at the cutting edge of research in precision medicine. “At Génomique Québec, we are especially proud of being able to actively contribute to the fight against COVID-19 by supporting such a highly reputable team of researchers. The project clearly demonstrates the important global role Québec plays in genomics, but also in artificial intelligence,” said Daniel Coderre, President and CEO of Génomique Québec.

Selected as part of a joint Genome Canada-Génomique Québec program, the project will also receive funding from Mila, IRIC and McMaster University.

[Learn more about the project](#)

About Génomique Québec

Génomique Québec's mission is to catalyze the development and excellence of genomics research and promote its integration and democratization. It is a pillar of the Québec bioeconomy and contributes to Québec's influence and its social and sustainable development. The funds invested by Génomique Québec are provided by the ministère de l'Économie et de l'Innovation du Québec (MEI), the Government of Canada, through Genome Canada, and private partners. To learn more, visit www.genomequebec.com

About the Institute for Research in Immunology and Cancer (IRIC) of the Université de Montréal

An ultra-modern research hub and training centre located in the heart of the Université de Montréal, the Institute for Research in Immunology and Cancer of the Université de Montréal was created in 2003 to shed light on the mechanisms of cancer and discover new, more effective therapies to counter this disease. The IRIC operates according to a model that is unique in Canada. Its innovative approach to research has already led to discoveries that will, over the coming years, have a significant impact on the fight against cancer.

About Université de Montréal

Deeply rooted in Montreal and dedicated to its international mission, Université de Montréal is a leading research university. It ranks among the top 100 universities worldwide and among the five best French language universities. With its affiliated schools, Polytechnique Montréal and HEC Montréal, UdeM attracts over \$500 million in research funding every year, making it one of the top three university research hubs in Canada. UdeM has more than 67,000 students, 2,300 professors and researchers, and an active global network of 400,000 alumni.

About Mila

Founded by Professor Yoshua Bengio of the Université de Montréal, Mila is a research institute in artificial intelligence which rallies over 500 researchers specializing in the field of deep learning. Based in Montreal, Mila is a non-profit organization recognized globally for its significant contributions to the field of deep learning, particularly in the areas of language modelling, machine translation, object recognition and generative models.

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