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Pharmacogenomics of Drug Efficacy and Toxicity in the Treatment of Cardiovascular Disease

Status	Current
Competition	III
Sector	Health
Genome Centre	Genome Quebec
Project Leaders	Michael Phillips & Jean-Claude Tardif

Project Description

Jean Claude Tardif, Montreal Heart Institute, Université de Montréal Michael S. Phillips, Montreal Heart Institute, Université de Montréal, and Genome Québec Pharmacogenomics of Drug Efficacy and Toxicity in the Treatment of Cardiovascular Disease No drug works well for all patients. Genetic differences among patients are believed to account for variations in drug responses. While genomics is opening the way to personalized, predictive and preventive medicine, pharmacogenomics in particular uses a patient's genetic information to predict individual responses to medication. This is important, since adverse drug reactions are a leading cause of hospitalization and mortality in Canada, the United States and Europe.

Dr. Jean Claude Tardif, an authority on atherosclerosis at the Montreal Heart Institute of the Université de Montréal, and Dr. Michael S. Phillips, from the Montreal Heart Institute, Université de Montréal and Director of Pharmacogenomics at Genome Québec, are project leaders of Pharmacogenomics of Drug Efficacy and Toxicity in Cardiovascular Disease.

Drs. Tardif and Phillips will lead an international team of clinician-researchers and scientists to address drug response problems in the management of cardiovascular disease, which includes coronary heart disease, congestive heart failure, hypertension and stroke.

The team will investigate the toxicity of lipid lowering drugs, especially statins, which are used to treat atherosclerosis, the concentration of lipids or fats, which narrow or block the arteries. The team will also study the efficacy of new anti-atherosclerotic agents.

Drs. Tardif and Phillips expect to identify relevant biomarkers, which can then be used to develop diagnostic tests. This will help determine how patients will respond to treatments for cardiovascular disease based on their genetic profile. The project will also develop ethical guidelines to help plan future pharmacogenomic research, and will develop models and strategies to integrate genetic knowledge into health care practices.