



Another project brought to you by

GenomeCanada

NorCOMM2 - In vivo Models for Human Disease & Drug Discovery

| | |
|------------------------|---|
| Status | Approved |
| Competition | 2010 Large-Scale Applied Research Project Competition |
| Sector | Health |
| Genome Centre | Ontario Genomics Institute |
| Project Leaders | Colin McKerlie, Mount Sinai Hospital and Steve Brown, MRC Harwell, UK |

Project Description

Understanding the function and dysfunction of our genes. Understanding the function of genes and their role in disease is one of the major challenges facing biomedical science and human health. That means understanding their normal function and what happens when they go wrong. Since this can't be done using humans, scientists use mice, which share 99% of coding genes with humans. With support from Genome Canada, Canadian scientists are taking part in an ambitious international project to understand the function of every one of our 20,000 genes. By studying the developmental problems and diseases in 280 mouse models each with a different abnormal or mutated gene, scientists are determining the effect of each mutation. This will determine whether the gene or the protein it produces could be a target for drugs or be used to diagnose disease. The commercial potential of this research is enormous - 34 of the top 100 drugs by sales in the United States came from this type of research using mouse models. Discoveries from this Genome Canada funded project will feed the Canadian biopharmaceutical pipeline and transform the human genome from a list of genes to a living blueprint.

The ethical and legal implications of this kind of research will be addressed at the same time. A part of the project will examine best practices and policies needed to improve international collaborations among researchers to enhance the process of drug discovery.