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Atlas of Genomic Profiles of Steroid Action

Status	Past
Competition	I
Sector	Health
Genome Centre	Genome Quebec
Project Leader	Fernand Labrie

Project Description

The Human Genome Project promises better understanding and treatment of human diseases by amassing a huge amount of new information about how the body and its cells work. The more researchers know about genes that underlie diseases, the more skillfully we can devise treatments. Our research group has decades of experience in studying hormones, particularly those called steroid hormones that regulate many of the body's functions, and the disease conditions that result when these processes go wrong.

We studied a set of steroid hormones that are involved in some of the most serious human diseases and we used mice as an experimental stand-in for humans. We used genomic methods to find and study groups of genes that are regulated in different tissues by several common hormones, which included testosterone (a male hormone), estrogen (a female hormone), aldosterone (involved in kidney regulation), cortisol (affecting many bodily functions) and others. We call this the ATLAS of steroid function.

We obtained useful new information for 750 genes whose action is influenced by steroid hormones. Many of these correspond to disease genes and some are known to be associated with certain types of cancer. We used genomic methods, including DNA micro-arrays, gene silencing, large-scale protein identification (proteomics), and automated microscopes to study these genes in detail. Our results are entered into a computer database called Interactive Atlas to be used by researchers worldwide.

Fast Facts

Highlighted outcome: The identification of 750 genes whose action is influenced by steroid hormones; a large body of scientific results in a computer database called Interactive Atlas, which can be used by researchers worldwide.

Number of peer reviewed publications published: 34

Number of patents in process or obtained: 1