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An Integrated Genetic/Physical Genome Map for the Old World Monkey, *Cercopithecus aethiops*

Status	Current
Competition	III
Sector	Health
Genome Centre	Genome Quebec
Project Leader	Ken Dewar

Project Description

Many species of old and new world monkeys serve as model organisms in biomedical research. Since nonhuman primate models are genetically close to humans, they can help elucidate complex human behaviours and diseases in ways not possible using mouse and rat models. The vervet monkey (*Cercopithecus aethiops*, also known as the African green monkey), is a non-endangered species native to southern Africa, and is a good model for studying neurological processes.

Dr. Ken Dewar, a principal investigator at the McGill University and Genome Québec Innovation Centre, and an assistant professor in the Department of Human Genetics at McGill University, is leading An integrated genetic/physical genome map for the old world monkey, *Cercopithecus aethiops*.

This project will develop a comprehensive physical map of the genome of *Cercopithecus aethiops*, augmenting current knowledge based on genetic mapping (locating the position of particular genes on chromosomes), genotyping (testing for genetic variation) and pedigreed colonies (unique, specially maintained populations of vervet monkey). The project will make it possible to associate genetic markers with chromosomal positions and surrounding gene content. Researchers will be able to use the physical map resources to identify candidate genes underlying genetic processes, and to develop new markers for the detailed genetic mapping of mutations and traits of interest.

Dr. Dewar's project will be used to improve the understanding of complex processes such as neuro-development and neuro-degradation as well as human conditions such as Parkinson's and substance abuse. By comparing the vervet genome map to genome maps of human, chimpanzee, and the rhesus monkey, the project will also identify areas displaying genome rearrangements, to aid in our understanding of the mechanisms contributing to genome evolution.

The development of techniques for this project will position Canadian researchers to carry out similar genomic studies for other plants and animals of medical, agricultural and evolutionary importance. The project will post data on several mammalian and primate comparative genomics internet portals in the United States and will disseminate primary data in the Genbank repository of the US National Center for Biotechnology Information.