

UBC researchers unveil 'toolbox of MiniPromoters' for gene research and therapy

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University of British Columbia researchers have led the development of a new "toolbox of MiniPromoters" for research and future therapies on brain, spinal cord and eye function.

MiniPromoters are small segments of human DNA with the ability to turn [genes](#) on and off at specific times and locations. They're important tools used by scientists and clinicians to mark cells, explore function and deliver therapeutic genetic medicine. [Gene therapy](#), or targeted gene replacement, is being investigated as potential therapy for neurodegenerative disorders such as Alzheimer Disease, Parkinson Disease, Huntington Disease, [Multiple Sclerosis](#), Aniridia and cancer.

Led by Elizabeth M. Simpson, UBC Medical Genetics Professor and Senior Scientist at the Centre for Molecular Medicine and Therapeutics at the Child & Family Research Institute, an international team of 64 researchers are making available 27 new MiniPromoters, greatly expanding the current limited pool of these vital tools for research and treatment of these disorders.

Using genome analysis, the research team identified new regions of human DNA that can activate a gene in certain brain regions but not others. Further research will focus on refining the gene expression patterns and optimizing gene delivery methods in animal models.

Details of the project, called the Genome Canada Pleiades Promoter Project, are scheduled to be published online in PNAS Early Edition this week.

More information: The Pleiades Promoter Project includes scientists highly specialized in bioinformatics, high throughput genomics, transgenic mouse technology, and neuroimaging to create a unique pipeline capable of producing and characterizing large numbers of MiniPromoters. These and other research resources are being made available at www.pleiades.org and by not-for-profit distributors to enable research worldwide.

Provided by University of British Columbia

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