

Molecular researchers discover novel gene linked to aging hearts

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Researchers at the University of Ottawa Heart Institute (UOHI) have identified a novel gene in the nucleus of muscle and brain cells that affects heart development and the aging process. Their investigation brings the promise of new treatments for an old, failing heart.

"We know that aging is the greatest predictor of [cardiovascular disease](#) and [heart failure](#). So we have been working backward in time, looking at the fetal heart to understand changes in the process as it ages, grows frail and fails," said molecular biologist Patrick Burgon, PhD.

A research team led by Burgon discovered the gene in the cell's nucleus – the site where hereditary information or DNA is housed – suggesting that it may control the behavior of other genes important in [heart development](#).

The researchers, who focus on the fetal heart as it grows into an adult heart, named the gene MLIP for Muscle enriched A-type Lamin Interacting Protein. Mutations in the Lamin gene family are associated with muscular dystrophy and other degenerative heart muscle diseases.

Their findings have been reported electronically in the *Journal of Biological Chemistry* and are scheduled for formal publication in June. Researchers now will investigate how animal models respond when the MLIP gene is removed to gain greater knowledge into its function.

"Greater knowledge of this gene and how it works will help us

understand loss of cardiac function. Our research opens up new avenues relevant to the characteristics of cardiac development," said Burgon.

At the Heart Institute, studies to identify complex cardiovascular mechanisms are part of a world-wide effort among a core of leading scientific organizations. The Heart Institute collaborates with an international consortium that has already discovered 13 new genes that increase the risk of coronary artery disease (CAD).

Heart Institute researchers previously identified gene 9p21 – the first genetic risk factor recognized for [heart](#) disease and the first major new cardiovascular risk factor since the discovery of cholesterol. The Institute has also located a variety of other genes influencing diseases such as atrial fibrillation and biological processes such as obesity.

More information: www.jbc.org/content/early/2011/05/11/110.165548.abstract

Provided by University of Ottawa Heart Institute

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