St. Boniface researcher earns patent

Fibrosis research attracts global attention

Dr. Michael Czubryt, Principal Investigator, Molecular Pathophysiology, Institute of Cardiovascular Sciences.

The average heart beats about 100,000 times a day. When you receive a patent for work you've been developing for over a decade, it can even beat a little faster.

"It was exciting to learn that our application was successful. It's taken a long time to get here," says Dr. Michael Czubryt. "It's a sign that our work at St. Boniface is novel and significant."

What is protected by the patent, issued in January 2016, is a particular way to interfere with scleraxis, a protein related to collagen production. Our bodies need collagen for a variety of purposes, including creating a sort of "soft skeleton" in the heart to give it the strength to handle 100,000 daily beats. If we have too much collagen, it causes a condition called cardiac fibrosis that affects the heart's performance. Controlling the production of collagen by manipulating scleraxis is what Dr. Czubryt and his colleagues are trying to do.

"We found that we can interfere with the function of scleraxis and when we do that, we can shut off the ability of these cells to make collagen, so they stop making it completely. It just goes away," he explains.

Without intervention, collagen production is determined by genetics and stimulated further by stress on the cardiovascular system, like high blood pressure or a heart attack. "If we can perfect how to interfere with the function of scleraxis in a disease situation, we can stop the progression of cardiac fibrosis," says Dr. Czubryt. "By working with international partners, we are aiming to produce a drug that can target scleraxis."

The research is intricate, fascinating, and very promising. The patent is significant because it re-affirms the science behind Dr. Czubryt's discovery, and it will most certainly attract interest from partners, donors, and industry as the research continues.

"Most important, we know that we can continue to work unencumbered," says Dr. Czubryt. "We can work with the confidence of knowing that this is our research. No one else in the world outside our lab can claim ownership of these discoveries. No one else can interfere with our ability to move this work forward."

The patent will also make it easier to eventually attract additional research funding for large-scale trials. Dr. Czubryt is keenly aware of how important such funding is, as well as gifts from the community.

"Medical research like this doesn't happen unless donors are willing to step forward," says Dr. Czubryt. "We are fortunate at St. Boniface that our donors are generous, curious, and understand the importance of research."

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