

Joint patent for using the BRCA1 gene as a therapy for cardiovascular disease

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St. Michael's Hospital and King Saud University have received their first joint U.S. patent to use the BRCA1 gene as a therapy for cardiovascular disease.

Dr. Subodh Verma, a [cardiac surgeon](#) at St. Michael's, and Dr. Mohammed Al-Omran, a vascular surgeon at the largest university in Saudi Arabia, are named as inventors on patent US 8, 110,185 B2 issued Feb. 7.

Obtaining the patent is an initial step in realizing the potential of this innovative approach to treating one of the leading causes of death in Canada,

Dr. Verma's team published three papers in 2011, in *Nature Communications*, the [Journal of Biological Chemistry](#) and *Gene Therapy*, showing how the BRCA1 and 2 genes, which normally suppresses the growth of breast and ovarian tumours, also protect the heart.

Following a heart attack, mice with the mutated [BRCA1 gene](#) had a three-to-five times higher rate of death. This was largely due to the development of profound heart failure and poor DNA damage repair, leading to larger and more severe heart attacks.

Dr. Verma said the mutated BRCA1 gene may prevent [DNA repair](#) in [muscle cells](#) that is essential to recovery after a heart attack.

"The patent is also significant because it demonstrates how collaborative research between St. Michael's and King Saud University can help speed the transfer of medical discoveries from the laboratory bench to patient bedsides," said Dr. Arthur Slutsky, vice-president of research.

St. Michael's and King Saud jointly own the invention. The hospital has an agreement with the university and the inventors on how to share royalties. The hospital also has a commercialization partner, PARTEQ innovations, the technology transfer arm of Queen's University.

Provided by St. Michael's Hospital

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