

A step towards better understanding of pancreatic cancer

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(Medical Xpress)—An international team of scientists has observed that the well-studied protein Sirtuin-1, known for helping cells live longer, also appears to play an important role in pancreatic cancer.

The [pancreas](#) is made up of exocrine cells (cells that secrete [digestive enzymes](#)) and cells that secrete hormones such as insulin. The new study is the first to focus on the role of Sirtuin-1 in exocrine cells, which can develop into pancreatic tumours.

In normal exocrine cells, the behaviour of Sirtuin-1 is inhibited by another protein. During the development of pancreatic cancer, Sirtuin-1 disconnects from that inhibitor, giving it the freedom to interact with other proteins that may help the cancer to develop, and the [cancer cells](#) to survive.

Dr Elke Wauters, from the Diabetes Research Centre at the Free

University of Brussels in Belgium, and Dr Ilse Rooman, also affiliated with the Free University of Brussels as well as a scientist at Sydney's Garvan Institute of Medical Research, are the first to study Sirtuin-1 in the initiation and progression of pancreatic cancer. After examining its behaviour in mouse models and in [cell cultures](#) from human tumours, they believe that inhibiting Sirtuin-1 may help prevent the initiation of pancreatic cancer, as well as prevent the further growth of established tumours. Their results are published in [Cancer Research](#), now online.

"While this is basic science, we believe our findings are important in progressing the understanding of how pancreatic tumours develop and may translate into new [therapeutic strategies](#)," said Dr Ilse Rooman.

"Sirtuin-1 inhibitors are already in Stage 2 Clinical Trials for another disease, meaning that they have been shown to be safe for people. That is excellent news as far as we are concerned, because it takes so much money and time to get a drug to that stage, and we believe this type of drug might be important in treating pancreatic cancer."

"Sirtuin-1 is a multi-faceted molecule, playing different roles in different tissue and cell types, and its activation has been shown to have benefits in metabolic disease and in some other cancers. While we don't address this point in our paper, there are also Clinical Trials underway for drugs that activate Sirtuin-1, especially for treating type 2 diabetes, and we believe it's important to signal its potential harm as far as pancreatic cancer is concerned."

"The next stage of our work will be to further test our hypothesis in preclinical models."

More information: cancerres.aacrjournals.org/con...CAN-12-3359.abstract

Provided by Garvan Institute

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