

Tumour protein could hold key to pancreatic cancer survival

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Improving treatments for pancreatic cancer. Credit: University of Melbourne

A diagnosis of pancreatic cancer is often a death sentence because current chemotherapies have little impact on the disease.

But research led by the University of Melbourne reported in the *International Journal of Cancer*, could eventually improve treatments with the identification of a protein that appears to help [tumour cells](#) become more aggressive.

In Australia this year, some 3,200 new cases of [pancreatic cancer](#) will be diagnosed, and 2,900 patients will die of the disease.

University of Melbourne pancreatic surgeon Mehrdad Nikfarjam, and research associates, have identified a protein called p21-activated kinase 1 (PAK1), in specific tumour cells called stellate cells.

Researchers were able to slow down growth and spread of tumors by targeting this protein in stellate cells in animal models, in combination with current chemotherapies.

Stellate cells are responsible for the fibrosis or scarring that surrounds pancreatic tumour cells, reducing the effectiveness of chemotherapy.

The study investigated the role of PAK1 in these [stellate cells](#) and how they communicate with the tumour cells.

PAK1 was found to be involved in the fibrotic production, proliferation and death of these cells, and could assist tumour [cells](#) to become more aggressive.

Targeting PAK1 resulted in decreased scar tissue formation, reduced [tumour growth](#), increased tumour sensitivity to chemotherapy and increased survival of mice.

Associate Professor Mehrdad Nikfarjam said that although further testing is needed, an inhibitor could potentially increase survival of patients with pancreatic cancer.

"Targeting PAK1 could reduce the fibrosis surrounding pancreatic tumours and allow conventional chemotherapies to have a greater effect on the tumours.

"PAK1's role as an important signalling [protein](#) in both the tumour and tumour environment is an important finding in unravelling the puzzle that is pancreatic cancer," Associate Professor Nikfarjam said.

Provided by University of Melbourne

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