

Reason for pancreatic cancer's resistance to chemotherapy found

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A pioneering University of Liverpool research team have published a study that identifies the mechanism in the human body that causes resistance of pancreatic cancer cells to chemotherapy.

Pancreatic cancer is one of the leading causes of [cancer death](#) and current therapies are not very effective. Thus, a better understanding of the molecular mechanisms that impair the response of cancer patients to chemotherapy, the standard treatment of care for this disease, is essential to design more effective treatments for this lethal disease.

Tumour associated macrophages (TAM) and fibroblasts are non-cancerous cells that are found within solid tumours, including [pancreatic cancer](#). Accumulating evidence suggests that TAM and fibroblasts can support cancer progression, resistance to therapy and metastasis. However, the precise mechanisms by which these cells contribute to pancreatic cancer progression and response to therapy is not completely understood.

Chemo resistance

The research team led by Dr Ainhoa Mielgo Iza, a Sir Henry Dale Fellow, from the University's Institute of Translational Medicine, has been studying how these cells contribute to chemo resistance in pancreatic cancer.

The study, which has been published in *Cancer Research*, found that TAM and fibroblasts directly support [chemotherapy resistance](#) of pancreatic cancer cells by secreting insulin-like growth factors.

These proteins activate a survival signalling pathway on pancreatic [cancer cells](#) making them resistant to chemotherapy.

Analysis of biopsies from pancreatic cancer patients revealed that this survival pathway is activated in 72% of the patients.

More effective treatment

Dr Mielgo, said: "These findings are very exciting because they uncover a mechanism that causes pancreatic cancer [resistance](#) to chemotherapy.

"Our research interest is to understand the complex interactions in the tumour microenvironment with the aim of finding new therapeutic targets for cancer.

"These results describe a combination treatment that could be more effective in treating this disease."

More information: L. Ireland et al, Chemoresistance in Pancreatic Cancer Is Driven by Stroma-Derived Insulin-Like Growth Factors, *Cancer Research* (2016). [DOI: 10.1158/0008-5472.CAN-16-1201](https://doi.org/10.1158/0008-5472.CAN-16-1201)

Provided by University of Liverpool

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