Protein found to play key role in the spread of pancreatic cancer

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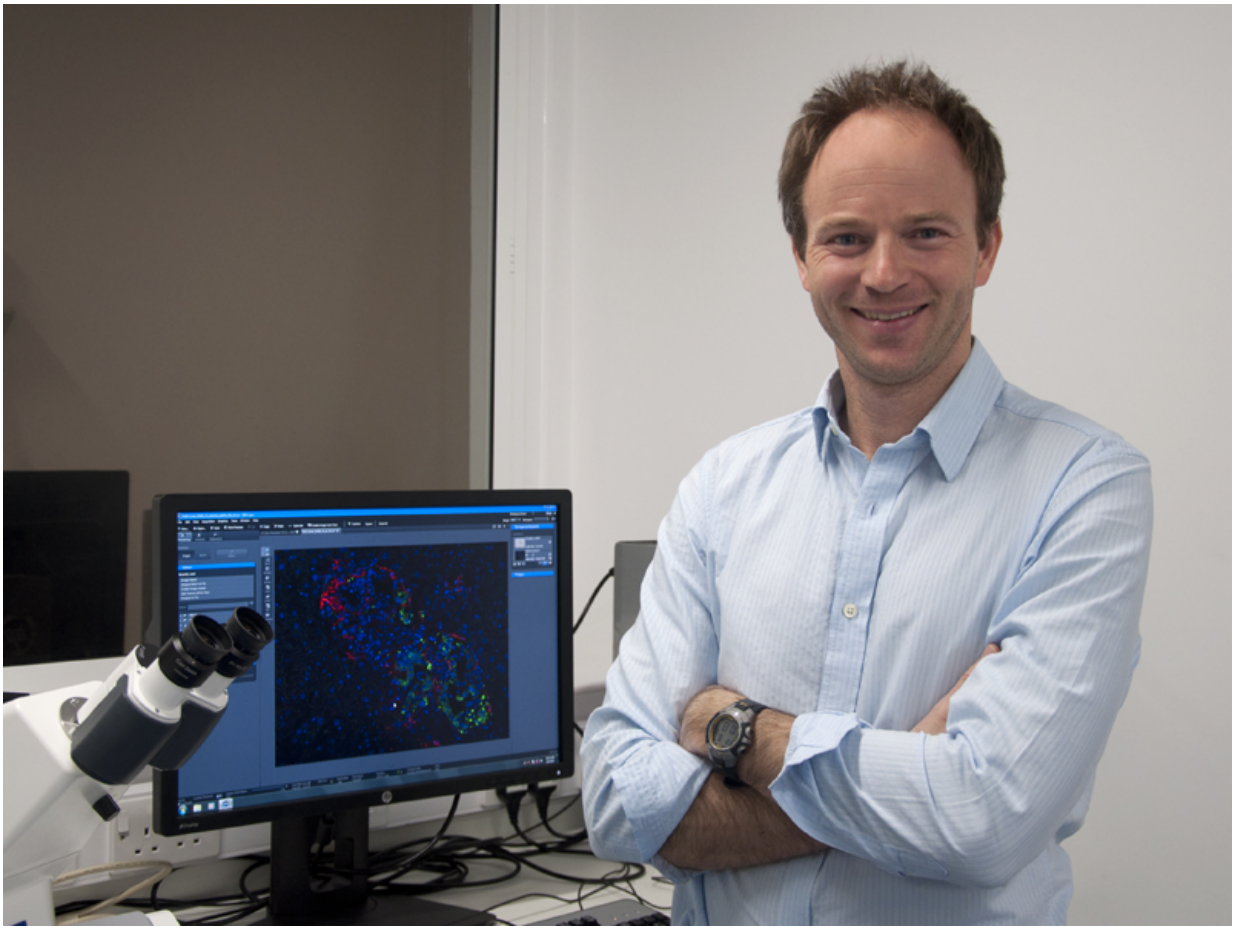

Dr Michael Schmid. Credit: University of Liverpool

Researchers from the University of Liverpool working with colleagues

from around the globe have found an explanation for how pancreatic cancer spreads to the liver. These findings potentially hold the key to stopping this disease from spreading.

Metastatic pancreatic ductal adenocarcinoma (PDAC) is a very aggressive type of pancreatic cancer that kills around 8000 people every year in the UK and 330,000 worldwide. Current treatments are not very effective, thus new treatment strategies are urgently needed.

The study, led by Dr Michael Schmid from the University's Institute of Translational Medicine, focuses on the role of the host connective tissue cells in the pancreas, or stromal cells, as the cancer cells spread to the liver. This process, by which cancer cells spread to other parts of the body, is called metastasis.

Breakthrough

While most of the research conducted so far has focused on the cancer cells, over the last few years, it has become clear that non-malignant stromal cells and the formation of a tumour microenvironment strongly influences the course of cancer progression and metastasis.

The study found that stromal partners are critical for efficient metastatic growth of pancreatic cancer cells, and identified a protein named 'granulin' as a key regulator of pancreatic cancer metastasis.

Dr Schmid, said: "A better understanding of the mechanisms underlying the metastatic spreading of pancreatic cancer is critical to improve treatment and patient outcome.

"Our work, which was a collaborative effort among several national and international research teams, provides evidence that pancreatic cancer metastasis critically depends on the support of stromal derived factors

such as granulin and periostin, and that targeting these stromal factors may improve the outcome of this devastating disease."

Exciting findings

Of the research Sebastian Nielsen, said: " We found that the expression of inflammatory white blood cells, or monocytes, from granulin plays a key role in pancreatic cancer metastasis. These findings suggest the management or disruption of the secretion of this protein holds the key to stop cancer from spreading from the pancreas to the liver.

The study was supported by research groups from the University's Institute of Translational Medicine including Dr Ainhoa Mielgo, Dr Takao Sakai and clinicians Professor Fiona Campbell and Professor Dan Palmer.

Dr Mielgo, said: "These findings are very exciting because they uncover a new mechanism that is essential for pancreatic cancer metastasis and that we can now specifically target."

The study is published in *Nature Cell Biology*.

More information: Macrophage-secreted granulin supports pancreatic cancer metastasis by inducing liver fibrosis, *Nature Cell Biology*, DOI: 10.1038/ncb3340

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