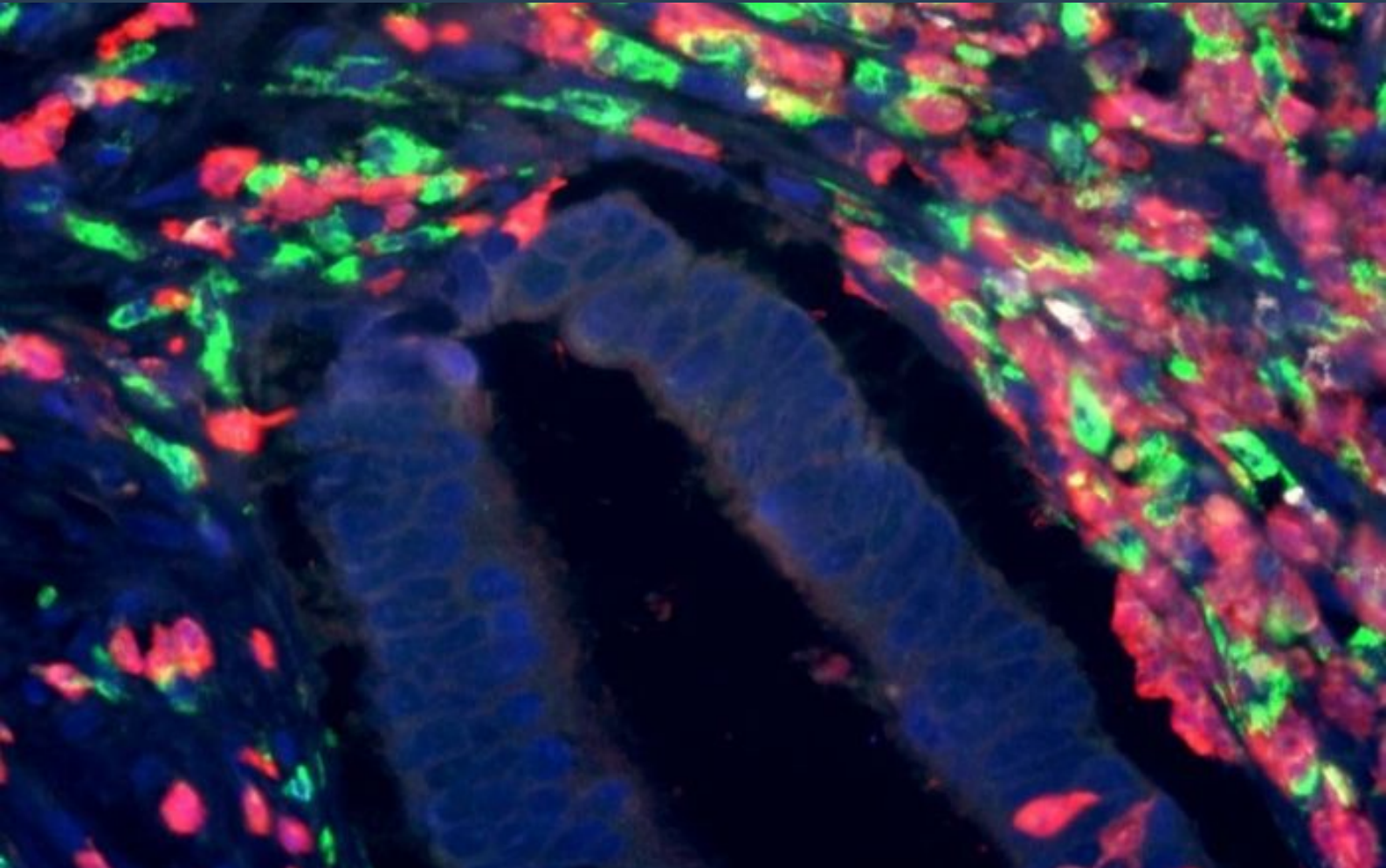


Optimised Screening for Pancreatic Cancer

Biomarkers to identify patient populations at most risk of pancreatic cancer.



Pancreatic tumour microenvironment - middle region shows tumour cells (blue), surrounded by macrophages (green) and monocytes (red).

IP Status

Patent application submitted

Seeking

Development partner, Commercial partner, Licensing

About **University of Liverpool**

By facilitating access to our expertise, facilities and networks, the University of Liverpool offers the means to transform ideas into creative solutions, improved performance, new technologies, strategies, applications, products or skills.

Background

Of 18 million cancer diagnoses predicted worldwide in 2018, nearly half a million were estimated to be pancreatic cancer. 80% of Pancreatic Cancer cases are diagnosed at a late stage and not eligible for potentially curative surgery. Therefore, earlier detection will make it easier to treat patients with the disease. Pancreatic Ductal Adenocarcinoma (PDAC) is the most common form of the disease making up close to 95% of cases. However, there is currently no gold standard for the early detection of PDAC. In order to improve the effectiveness of identifying people at high risk of having PDAC, there is a need for a method with increased specificity and sensitivity.

Tech Overview

The highest risk group for PDAC are those who have been diagnosed with new-onset diabetes, making up 50-60% of PDAC patients. However, over 200,000 cases of new-onset diabetes are identified every year in the UK alone, making the screening of every one of these individuals for PDAC not feasible.

Researchers at the University of Liverpool have developed an approach to narrow-down the screening for PDAC patients to those who are at the highest risk. This is done by distinguishing, within patients diagnosed with new-onset diabetes, those which have either type 2 or type 3c (**Figure 1**). The latter is associated with PDAC and other pancreatic diseases and makes up about 10% of new-onset diabetes cases. Distinguishing these cases therefore makes it possible to identify and screen a far smaller sub-population of individuals which are at the highest risk of PDAC.

Benefits

- Optimising PDAC patient screening by focusing on a sub-population of new-onset type 3c diabetes cases will make it possible to detect 50% (5000 cases) of sporadic PDAC cases/yr (in the UK).
- With this method, the researchers are aiming to bring PDAC diagnosis forward by approx. 13 months and subsequently increase 5 year survival from the disease by 10-fold.
- As well as detecting PDAC, this method also identifies other pancreatic diseases associated with type 3c diabetes (e.g. chronic pancreatitis).

Applications

This would primarily be aimed at patients with new-onset diabetes.

Opportunity

The researchers are looking to validate a biomarker panel that will put people in the category of high/low risk of PDAC by selecting type 3c diabetes from type 2.

The researchers are currently working in collaboration with an NIH/PanCAN funded USNOD cohort of 10,000 individuals on a 5 year programme.

£2.2 million funding has been secured from CRUK to start a retrospective longitudinal study. They plan to recruit 2500 new onset diabetics and monitor them for PDAC development, commencing for 5 years from January 2019.

Appendix 1

Figure 1

Circulating levels of LIV-4 and LIV-17 are significantly elevated in type 3c (PDAC- and Chronic Pancreatitis-associated) compared with type 2 diabetes..

