Scientists develop new 'precision medicine' approach to treating damaged DNA in pancreatic cancer

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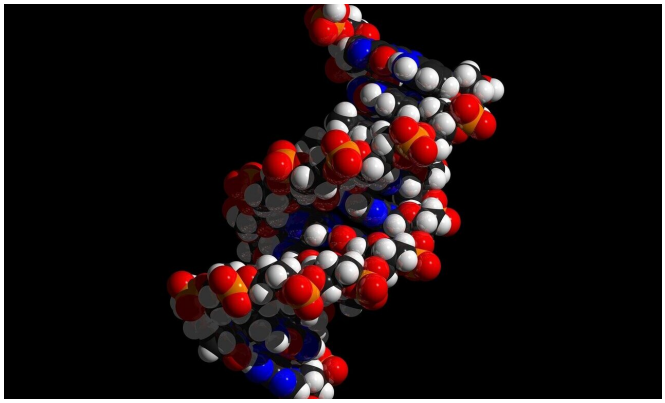

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Scientists have developed a new "precision medicine" approach to treating the damaged DNA in the cancer cells of Pancreatic Cancer patients.

The findings mark an important step forward for potential treatment options for pancreatic cancer, improving the options and outcomes for a disease where survival rates have remained stubbornly low.

The study detailing the approach—led by the University of Glasgow and published in *Gastroenterology*—used cell lines and organoids that were generated from patients with pancreatic cancer to develop new molecular markers that can predict who will respond to drugs targeting DNA damage.

The researchers tested these markers using multiple drugs, and have developed a strategy that are now being taken forward into clinical trial. The trial will help doctors and researchers predict which patient will respond to which one of these drugs, either alone or in combination.

Funding for the trail has come from AstraZeneca and will now be included in the PRIMUS-004 clinical trial as part of the Precision-Panc therapeutic development platform for pancreatic cancer.

PRIMUS-004 is a ground-breaking pancreatic cancer trial, which aims to match patients with more targeted and effective treatment for their tumors. Run by Precision-Panc, a flagship therapeutic development program dedicated to pancreatic cancer—led by the University of Glasgow with major funding from Cancer Research UK—the trial brings a precision medicine approach to pancreatic cancer treatment for the first time in the UK.

The trial will open for recruitment in Glasgow shortly, with 20 other centers throughout the UK to follow.

Although survival for many types of cancer has improved, pancreatic cancer survival has lagged significantly behind in the last 40 years. The disease is particularly hard to treat, partly because it's often diagnosed at a late stage.

A major limitation to treating pancreatic cancer effectively is that there are very few treatment options for patients with the disease. Currently, some patients with pancreatic cancer cannot repair damaged DNA in the cancer cells, which makes the cancer vulnerable to some new and established drug treatments.

Dr. David Chang, from the University of Glasgow's Institute of Cancer Sciences, said: "Our study is a huge breakthrough in terms of what might be possible with future treatments. As part of our research, the strategy we've developed is extremely promising, and we're very pleased and proud to see it now be taken into clinical trial. For

us, this is a demonstration of a bench-to-bedside precision oncology approach to tackle this terrible disease."

Michelle Mitchell, Cancer Research UK's chief executive, said: "We urgently need new ways to treat pancreatic cancer. The disease only has a few treatment options and is generally diagnosed at a late stage, so survival has remained stubbornly low. The Precision Panc study offers a dynamic way to explore new tailored treatments, and it's fantastic that we now have new drug candidates to add to the PRIMUS-004 trial. We look forward to seeing if these drugs, which have shown promise in the lab, have the same impact for people with pancreatic cancer."

Funding for PRIMUS 004 has been obtained from AstraZeneca and the study has been endorsed by Cancer Research UK. The trial is being coordinated by the Cancer Research UK Glasgow Clinical Trials Unit.

The paper, "Targeting DNA Damage Response and Replication Stress in Pancreatic Cancer," is published in *Gastroenterology*.

More information: Stephan B. Dreyer et al. Targeting DNA Damage Response and Replication Stress in Pancreatic Cancer, *Gastroenterology* (2020). DOI: 10.1053/j.gastro.2020.09.043