Study pinpoints gene's role in pancreatic cancer

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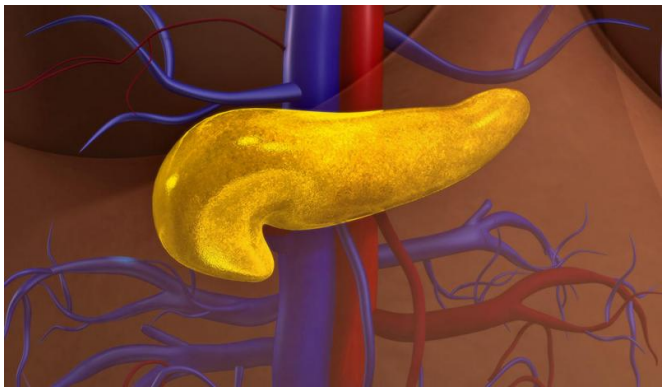

A new study finds that pancreatic cancer cells use glucose to survive and also to spread to other organs. Credit: Yale University

Pancreatic cancer is a particularly deadly form of disease, and patients have few options for effective treatment. But a new Yale-led study has identified a gene that is critical to pancreatic cancer cell growth, revealing a fresh target for new therapies.

Senior author Narendra Wajapayee, associate professor of pathology, and his research team started with the premise that cancer cells need specific nutrients to survive and divide quickly. They searched gene data sets to find genes involved in metabolism regulation that were highly expressed in pancreatic cancer tissue compared to normal pancreatic tissue. Out of 13 metabolic genes identified, they narrowed their search to four that when blocked, reduced the growth of pancreatic cancer cells. Further studies in animal models showed that one particular gene—PON2—was required for the growth of pancreatic tumors and their spread to other organs, such as the liver and lungs.

The research team found that PON2 increases the ability of pancreatic cancer cells to use glucose to not only survive but also thrive while migrating to other parts of the body. With this insight, Wajapayee and his colleagues are working to develop inhibitors to block PON2 and cancer growth.

More information: Arvindhan Nagarajan et al. Paraoxonase 2 Facilitates Pancreatic Cancer Growth and Metastasis by Stimulating GLUT1-Mediated Glucose Transport, *Molecular Cell* (2017). DOI: 10.1016/j.molcel.2017.07.014

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