

Early Detection of Pancreatic Cancer

Inventors: [Kenneth Zaret](#)

Stage of Development:

- Identified a two proteins-signature in plasma that detect early stage PDAC
- Future plans include:
 - prospective validation of this signature;
 - development of a new set of biomarker

Intellectual Property

- [WO2014205374](#)
- Provisional 62/529,970 filed 7/7/2017

Desired partnership

- Co-development
- Licensing

Publication

- [Kim et al., Sci. Transl. Med. 9, eaah5583 \(2017\)](#)

Press

- [Penn Medicine](#)
- [AACR](#)
- [CBS News](#)
- [NCI](#)

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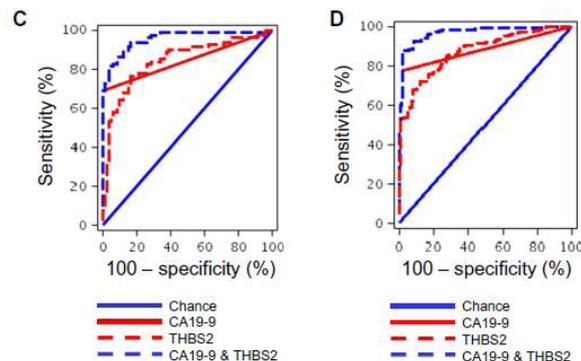
Docket #18-8359 - Y6160

Most pancreatic ductal adenocarcinoma (PDAC) patients are diagnosed at an advanced stage of disease, and their tumors are not surgically resectable, contributing to an overall 5-year survival rate of 7%. The lack of early diagnosis has made it challenging to develop therapeutics to slow or reverse PDAC.

Currently CA19-9 is used to assess disease progression in PDAC patients. However its use is not recommended for general screening because (1) it is elevated in certain nonmalignant pancreatic conditions, such as chronic pancreatitis (2) it produce false negatives in individuals who do not express Lewis blood group antigens. Other secreted markers have been reported for PDAC including blood or urine proteins, exosomes, microRNAs, and epigenetic marks in circulating nucleosomes. However, most are discovered in advanced PDAC or cell lines that are not representative of earlier stages, when detection would be most relevant, although recent candidates have been tested or discovered in prediagnostic samples of PDAC.

So there is an urgent need for early detection of PDAC to be able to contemplate efficient therapeutic intervention.

In an effort to develop early diagnostic prognostic, Dr. K Zaret at the Perelman School of Medicine has developed a 2-protein panel for early detection of pancreatic ductal adenocarcinoma with a specificity of 98%, the combination of THBS2 and CA19-9 yielding a sensitivity of 87% for PDAC.



C and D: ROC curves for THBS2, CA19-9, and THBS2 + CA19-9 concentrations in plasma samples from patients with all stages of PDAC versus healthy controls (C): PDAC, n = 81; controls, n = 80 and (D): PDAC, n = 197; controls, n = 140.

Applications:

- Early diagnostic of pancreatic cancer

Advantages:

- Assay done via ELISA on serum and plasma
- No biopsy needed
- Early detection of pancreatic cancer