

Researchers will test nanoparticles against pancreatic cancer

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A five-year, \$16-million grant from the National Cancer Institute will take advantage of specialized expertise developed by scientists at Albert Einstein College of Medicine of Yeshiva University and Montefiore, the University Hospital and Academic Medical Center for Einstein. The research – carried out by a group of five institutions, including Einstein, that comprise the Texas Center for Cancer Nanomedicine – could lead to novel ways to diagnose and treat pancreatic and ovarian cancer using nanoparticles.

Nanoparticles are engineered materials that are 100 nanometers or less in size. (A nanometer is one billionth of a meter.) [Nanoparticles](#) impregnated with drugs are called nanomedicines.

"We will be investigating nanomedicines for both imaging and treating pancreatic tumors," said Einstein-Montefiore principal investigator Steven Libutti, M.D., professor and vice chair of surgery at Einstein and Montefiore, director of the Montefiore-Einstein Center for Cancer Care, and associate director for clinical services of the Albert Einstein Cancer Center. "Our part of the consortium is developing nanoparticles that will specifically target unique aspects of the blood vessels found in pancreatic adenocarcinomas and pancreatic neuroendocrine tumors."

[Pancreatic cancer](#) is the fourth-leading cause of all cancer deaths. Currently, there is no test for early detection of the disease, which killed nearly 37,000 people in 2010. Only 5.6 percent of people diagnosed with pancreatic cancer live for five years or longer, according to the National

Cancer Institute.

Dr. Libutti has developed mice that are genetically programmed to form pancreatic tumors that mimic those seen in people. These mice will be used for testing a variety of nanoparticle-based drugs produced by other collaborators. Such studies will reveal whether the particles can home in on disease locations and deliver therapeutic benefits. Dr. Libutti's clinical practice involves the surgical management of patients with cancer, including those with pancreatic cancer. A main focus of his research is the formation of new blood vessels that nourish tumors.

Identifying the most promising nanoparticle-based drugs for pancreatic as well as ovarian [cancer](#) will take several years. Clinical trials are not likely to begin until the end of the five-year project.

Provided by Albert Einstein College of Medicine

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