# Murine metastatic pancreatic adenocarcinoma cell lines

**Summary (1024-character limit)**
Researchers at the National Cancer Institute (NCI) developed orthotopic allograft models for pancreatic cancer that utilize cells or tumor fragments implanted into the cancer-free pancreata of recipient immunocompetent mice. NCI seeks licensees to commercialize this invention.

**NIH Reference Number**
E-250-2017

**Product Type**
- Research Tools

**Keywords**
- Pancreatic, Cancer, GEM-Derived Allograft, Mouse Models, Adenocarcinoma, Inflammation, Kozlov

**Collaboration Opportunity**
This invention is available for licensing and co-development.

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## Description of Technology

Researchers at the National Cancer Institute (NCI) have developed orthotopic allograft models for pancreatic cancer that utilize low passage primary pancreatic adenocarcinoma cells or tumor fragments implanted into the cancer-free pancreata of recipient syngeneic immunocompetent mice. Tumor development in these models is more synchronized, latency is substantially shortened, and tumors develop only in one location, as pre-determined by the choice of a site for cells/tumor fragment implantation. This technology is the first in vivo model of metastatic pancreatic cancer utilizing an orthotopic transplantation procedure, which allows engrafting of tumor pieces into immunocompetent mice. This procedure can be used for the timed production of large cohorts of experimental animals developing pancreatic cancer for preclinical studies within a reasonable time frame and at a significant cost reduction.
The NCI technology represents cell lines derived from primary pancreatic tumors and orthotopic mouse models for pancreatic cancer; cell lines and orthotopic mouse models are derived from following

genotypes:
KraslSL-G12D ki/+; Trp53LSL-R172H ki/+;Pdx-1-Cre
KrasLSL-G12D ki/+; Trp53 R172H<wt2mut>/Koz ki/+; Pdx-1-Cre
KrasLSL-G12D ki/+; Trp53 R270H<wt2mut>/Koz ki/+; Pdx-1-Cre
KrasLSL-G12D ki/+; Trp53 LSL-R172H ki/+; ROSA-luc4 ki/+; Pdx-1-Cre
KrasLSL-G12D ki/+; Pdx-1-Cre

**Potential Commercial Applications**

- Can be applied in a variety of translational projects aimed at biomarker discovery and preclinical applications
- Pharmacodynamics/pharmacokinetics, cytotoxicity and efficacy studies
- Testing of new disease-specific imaging agents, imaging modalities and therapeutic strategies, such as immunomodulatory agents or combinatorial approaches
- Models can be further optimized to better mimic clinical impact of metastatic spread after primary tumor resection

**Competitive Advantages**

- Useful as a more accurate and clinically relevant experimental platform for conducting preclinical level cytotoxicity, PK, PD, drug tolerance, and efficacy studies for cancer treatment compounds
- Also suitable for mechanistic studies on cancer disease, biomarker discovery, drug screening, high-throughput mutational analyses in cell lines and in vivo grafted tumors, translational research on drug resistance mechanisms, etc.
- As the only preclinical cancer model type featuring fully functional immune system, widely applicable for informative immuno-oncology research and evaluation of novel therapeutic strategies that include a growing spectrum of immunomodulatory agents

**Inventor(s)**

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**Development Stage**

- Pre-clinical (in vivo)

**Patent Status**

- **Research Material:** NIH will not pursue patent prosecution for this technology

**Therapeutic Area**

- Cancer/Neoplasm