Identification of a New Molecular Target and Methods for Treating Pancreatic Cancer

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BACKGROUND

Pancreatic cancer is an aggressive disease with limited treatment options and a high mortality rate. Pancreatic cancer is the 3rd leading cause of cancer death in the United States; despite some recent advances in systemic therapy, survival remains dismal in large part due to its profound drug resistance and its propensity for early metastasis. Typically, diagnosis of pancreatic cancer occurs only with advanced stages of the disease since there are currently no early markers for detection. Individuals with pancreatic cancer have a poor prognosis due to the late diagnosis, the extent of metastasis, and ineffective treatments. Survival rates are dismal, with a one-year survival rate of 25% and a 5-year survival rate of 6%. Currently, approximately 20% of pancreatic cancer patients are able to undergo the Whipple procedure; this surgical procedure involves removal of the affected portion of the pancreas, leading to an increased survival rate. However, the remaining 80% of pancreatic cancer patients cannot undergo this treatment because their tumors or the extent of metastasis are too severe. In addition, pancreatic cancer is not typically responsive to radiation and chemotherapy. An alternative approach for the treatment of pancreatic cancer is a complete pancreatectomy followed by continual supplementation with digestive enzymes and insulin. Thus, more effective drugs are needed to increase the survival rate of pancreatic cancer patients. Targeting RORγ may lead to the design of a new class of therapeutics that can be used to treat this devastating disease.

TECHNOLOGY DESCRIPTION

Researchers at UC San Diego have identified a novel function for the nuclear hormone receptor RORγ in pancreatic cancer for the first time, and show that this molecule is essential for pancreatic cancer initiation and progression. The investigations conclude that RORγ represents a new molecule that can be targeted to treat pancreatic cancer via an inhibitor to RORγ.

APPLICATIONS

The primary application is the administration of the Retinoic acid receptor-related orphan 5 receptor gamma (RORγ) inhibitor to a human subject. This invention could lead to the development of effective drugs against pancreatic cancer and diagnostic and prognostic kits for these diseases.

ADVANTAGES

These studies identify RORγ as a central regulator of pancreatic cancer initiation and progression and suggest that targeting of RORγ could be a new approach to cancer therapy.

STATE OF DEVELOPMENT

This invention is in the experimental data stage. Researchers have shown that loss of RORγ impairs tumor propagation in mouse models of pancreatic cancer as well as blocking growth in human cancer cells.

INTELLECTUAL PROPERTY INFO

This invention is patent pending and available for licensing.

PATENT STATUS

Patent Pending

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OTHER INFORMATION

KEYWORDS

Pancreatic cancer, cancer inhibitors, Retinoic acid receptor-related orphan 5 receptor gamma, tumor propagation, cancer treatment, adenocarcinoma

CATEGORIZED AS

- **Medical**
  - Disease: Cancer
  - Therapeutics
- **Research Tools**
  - Other

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