Culturing primary mouse pancreatic ductal cells.

Abstract:

The most common subtype of pancreatic cancer is pancreatic ductal adenocarcinoma (PDAC). PDAC resembles ductal cells morphologically. To study pancreatic ductal cell (PDC) and pancreatic intraepithelial neoplasia (PanIN)/PDAC biology, it is essential to have reliable in vitro culture conditions. Here we describe a methodology to isolate, culture, and passage PDCs and duct-like cells from the mouse pancreas. It can be used to isolate cells from genetically engineered mouse models (GEMMs), providing a valuable tool to study disease models in vitro to complement in vivo findings. The culture conditions allow epithelial cells to outgrow fibroblast and other "contaminating" cell types within a few passages. However, the resulting cultures, although mostly epithelial, are not completely devoid of fibroblasts. Regardless, this protocol provides guidelines for a robust in vitro culture system to isolate, maintain, and expand primary pancreatic ductal epithelial cells. It can be applied to virtually all GEMMs of pancreatic disease and other diseases and cancers that arise from ductal structures. Because most carcinomas resemble ductal structures, this protocol has utility in the study of other cancers in addition to PDAC, such as breast and prostate cancers.

Zeitschriftentitel / Abkürzung:

Cold Spring Harb Protoc

Jahr:

2015