Human Fetal Prostate Cells for the Study of Human Tumors

Tech ID: 23057 / UC Case 2011-414-0

BACKGROUND

Prostate cancer is one of the most common cancers to affect men and is the second leading cause of death amongst cancer victims. For decades, primary cultures of malignant prostatic cells have provided a convenient model system to study prostate cancer and tumorigenesis. However, these cell lines do not adequately recapitulate the microenvironment that supports tumor development in vivo. Many of the available prostate cancer cell lines (PC3, DU145, and LNCaP) are derived from metastases and are not inclusive of all prostate cancer phenotypes. Thus, there is a need for cell culture model systems that more effectively recapitulate the genetic and environmental composition of tumors. Seminal work carried out by Dr. Garraway's research group at UCLA has provided crucial insight into the development of a novel cell line derived from human fetal prostate tissue for the study of prostate tumors and tumorigenesis.

INNOVATION

UCLA researchers in the laboratory of Dr. Isla Garraway have isolated human fetal prostate cells to regenerate primary prostate tumors. The fetal prostate stromal cell line has been shown to support *in vivo* regeneration of human prostate tissue when combined with normal adult or fetal epithelial cells, as well as primary human prostate tumor cells. The present invention provides a unique cell line to investigate the genetic factors in tumorigenesis and disease progression, identify cancer stem cells, and evaluate the effectiveness of potential therapeutic agents.

APPLICATIONS

- The cell line can be used to study *in vivo* tissue and tumor regeneration of human prostate development and tumorigenesis.
- The cell line can be used *in vitro* culture for molecular, cellular and genetic analysis.

ADVANTAGES

- Fetal prostate stroma can be frozen, thawed and expanded indefinitely for prostate tissue regeneration.
- Single cells obtained from dissociated tissue specimens can be grown under simple culture conditions *in vitro*.

STATE OF DEVELOPMENT

The cell line has been shown to support both benign and tumor growth from primary human prostate specimens *in vivo*. The cell lines are established and ready to use.

RELATED MATERIALS

- Isolation and characterization of human prostate stem/progenitor cells. Methods Mol Biol. 2012;879:315-26.

CONTACT

UCLA Technology Development Group
ncd@tdg.ucla.edu
tel: 310.794.0558.

INVENTORS

- Garraway, Isla

OTHER INFORMATION

KEYWORDS

Tumorigenesis, human fetal prostate, fetal prostate, stromal cell, stromal, cell line, cell culture, culture

CATEGORIZED AS

- **Medical**
  - Disease: Cancer
  - Disease: Metabolic/Endocrinology
  - Research Tools
  - Stem Cell
  - Therapeutics
- **Research Tools**
  - Cell Lines
  - Expression System

RELATED CASES

2011-414-0