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# HUMAN PROSTATIC EPITHELIAL CELL LINES

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## BRIEF DESCRIPTION

Benign prostate hyperplasia (BPH) is the most common symptomatic neoplastic condition and malignant prostate cancer is the second leading cause of death among men. Yet the biological and molecular characteristics of these diseases remain poorly understood. In vitro and in vivo models of human prostate epithelial cells provide a useful model for the analyses of molecular and genetic mechanisms underlying prostate carcinogenesis. UCSF investigators have developed several immortalized and malignant adult human prostatic epithelial cell lines.

## FULL DESCRIPTON

UCSF investigators have developed several immortalized and malignant adult human prostatic epithelial cell lines. They first immortalized primary epithelial cells from human prostate with SV40 large T antigen. This parental cell line BPH-1 has been extensively characterized and provides a model for addressing fundamental questions related to the role of growth factors in the proliferation and initiation of key developmental events in human prostate epithelium. Our investigators subsequently converted those non-tumorigenic immortalized BPH-1 cells into tumorigenic cells by tissue recombination with either primary cultures of human prostate carcinoma associated fibroblasts (BPH1CAFTD1 thru 8) or with rat urogenital sinus mesenchyme (BPH1TETDA and B). These malignant transformed BPH-1 cells undergo genetic changes, some of which are parallel to those observed in the tumors of human prostate cancer patients. Each cell line has unique genetic characteristics and varies in tumorigenic potential from slow growing and noninvasive to aggressively invasive. Comparison of these characteristics should be helpful for understanding the mechanisms involved in initiation, promotion, and progression of prostate cancer. These human prostatic cell lines can be used as a model for prostatic tumors in particular for implantation of xenograft tumors, drug screening assays and gene expression analysis by microarrays.

## OTHER INFORMATION

- Establishment and characterization of an immortalized but non-transformed human prostate epithelial cell line: BPH-1. In Vitro Cell. Dev. Biol., 1995, 31A: 14-24.

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### OTHER INFORMATION

#### KEYWORDS

prostate carcinogenesis,  
  
cancer, BPH-1

#### CATEGORIZED AS

- [Medical](#)
- [Disease: Cancer](#)
- [Research Tools](#)

#### RELATED CASES

2000-057-0

- ▶ Malignant transformation in a nontumorigenic human prostatic epithelial cell line. Cancer Research, 2001, 61: 8135-42.
- ▶ The consequences of chromosomal aneuploidy on gene expression profiles in a cell line model for prostate carcinogenesis. Cancer Research, 2001, 61: 8143-9.

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