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As a heterogeneous disease entity, breast cancer can be histologically and molecularly classified into one of at least four subtypes. Each subtype has a separate disease progression and requires a specialized course of treatment. Therefore, to generate effective treatment options matched to the individualized needs of the patient, investigators need *in vitro* research tools that represent the *in vivo* heterogeneity of breast cancers.

ATCC has an extensive collection of biological resources, including tumor cell lines, human telomerase (hTERT) immortalized cells, primary cells, iPSCs, and cell culture reagents, that researchers can use to understand and combat this complicated disease. This month, Cell Passages will highlight some of our available breast cancer resources. For a full description of the items in the collection, please download our new [Breast Cancer Resource Book](#).

## ATCC Tumor Cell Lines

Tumor cell lines have formed the cornerstone of breast cancer research since the early 1970s, when the MCF-7 line and the MD Anderson series were first established. Tumor cell lines have become even more powerful with the advent of next-generation sequencing technologies, which have provided insight into the remarkable genetic complexity of cancers, and are an invaluable resource for understanding disease mechanisms, developing novel drugs and therapeutics, and making new discoveries.

Today, ATCC has developed an extensive collection of breast-cancer related [Tumor Cell Panels](#) to complement our wide array of individual tumor cell lines. Each ATCC Tumor Cell Panel includes low-passage, authenticated tumor cell lines that have been annotated with genetic mutation data (from the Catalogue of Somatic Mutations in Cancer database, Wellcome Trust Sanger Institute, UK), and organized to best represent the specific features of this heterogeneous disease. These panels include:

- Comprehensive Breast Cancer Cell Panel (ATCC® No. 30-4500K™)
- Triple Negative Breast Cancer Cell Panels (ATCC® No. TCP-1001™, TCP-1002™, TCP-1003™)
- Breast Cancer Biomarkers Cell Panel (ATCC® No. TCP-1004™)
- Breast Cancer p53 Hotspot Mutation Cell Panel (ATCC® No. TCP-2010™)
- Breast Cancer Mouse Model Cell Panel (ATCC® No. TCP-1005™)

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### News this Month

[Breast Cancer](#)

[Tumor Cell Lines](#)

[hTERT](#)

[Epithelial Cells](#)

[New Webinar Series](#)

### ATCC Publications

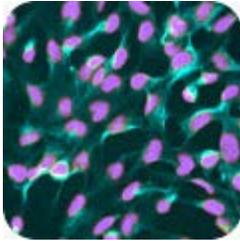
[Breast Cancer Resource Book](#)

[Primary Cell Culture Guide](#)

[hTERT Immortalized Cell Culture Guide](#)

### Announcements

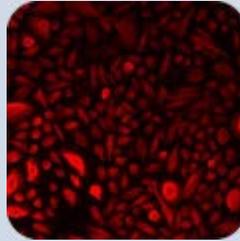
[Visit ATCC at AACR 2014 meeting at booth Booth #2319](#)



### hTERT immortalized human mammary epithelium

The human mammary epithelium cell line, hTERT-HME1 [ME16C] (ATCC<sup>®</sup> No.CRL-4010<sup>™</sup>), was derived from normal primary mammary epithelial cells by transduction with the retrovirus pBabepuro+hTERT vector. These cells are confirmed to express the cytokeratin epithelial marker (immunocytochemistry) and the Mucin 1 transmembrane (MUC1) protein (*Homo sapiens*; detection by flow cytometry). hTERT-HME1 cells have served as normal controls in several studies that sought to unravel the molecular mechanism of breast cancer pathogenesis.

[Find more hTERT cells](#)



### ATCC primary mammary epithelial cells

ATCC Primary Mammary Epithelial Cells (ATCC<sup>®</sup> No. PCS-600-010<sup>™</sup>) are a mixed population of myoepithelial and luminal epithelial cells. They are cryopreserved at low passage (P2) to ensure high post-thaw viability and plating efficiency, thoroughly tested to confirm their proliferative capacity, and confirmed to be free of microbial contamination. Together with the ATCC Mammary Epithelial Cell Basal Medium and Growth kit, they form a complete culture system that you can trust to help you achieve your research objectives.

[Learn more](#)



### Webinar – hTERT Immortalized Cell Lines – Unique Tools for Physiologically Relevant Research

**Presenter:** Chengkang Zhang, Ph.D.

*ATCC Senior Scientist*

**March 27, 2014**

Human telomerase (hTERT) immortalized cell lines combine the properties of primary cells and the long culture life of continuous cell lines. In this webinar, we will provide an overview of the ATCC hTERT immortalized cell line collection, and will examine the use of immortalized renal epithelial cells, keratinocytes, and microvascular endothelial cell lines to demonstrate how hTERT immortalized cell lines can help investigators reach their goals.

Register for a session  
[10:00 AM](#) or [3:00 PM \(ET\)](#)

### AACR Annual Meeting 2014

Meet ATCC at the upcoming AACR Annual Meeting 2014, booth # 2319, April 5-9, San Diego, CA

#### Visit ATCC posters

Tuesday April 8, 1:00 PM - 5:00 PM, Hall A-E

- Understanding the molecular nature of cancer lines - #3920
- Development of lipid-based transfection reagents for efficient expression of transgenes in hard-to-transfect cell types - #LB-248

### FAQs

**Q:** How can you verify the success of cell immortalization with the hTERT plasmid?

**A:** Methods for assessing whether cells have been successfully immortalized with hTERT include: the Telomere Repeat Amplification Protocol (TRAP) assay, karyotyping, observation of morphology

and growth between 25 to 50 PDLs (population doubling levels), and observation of relevant protein expression in early and late passage cells.

[Have more questions?](#)

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