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# Significant Research Advances Enabled by HeLa Cells

In 1952, HeLa cells became the first human cell line that could grow and divide endlessly in a laboratory, leading scientists to label these cells “immortal”. The immortality of HeLa cells contributed to their adoption across the world as the human cell line of choice for biomedical research. Though additional cells lines have been developed over the years, HeLa cells continue to be widely used to advance biomedical research and medicine.

The enduring use of HeLa cells in biomedical research is represented below through a timeline of events and scientific publications that describe research using HeLa cells. The timeline aims to show the role that HeLa cells have played in some of the major advances in fields such as cancer biology, infectious disease, fundamental microbiology and many others. The hyperlinked text provided in each entry provides the underlying sources for the advances and allows the reader to take a deeper look into the actual science. The events that were selected were based on the number of times researchers cited, or gave credit, to the publication(s) in which the events were described. Research involving HeLa cells has been described in more than 110,00 scientific publications. This staggering number makes it clear just how important these cells have been to research over the past six decades.

The versatility and power of HeLa cells have made them an essential laboratory tool that still continue to provide new clues about the basis of human health and disease.

JUMP TO  
DECADE

[1950s](#)[1960s](#)

1950s

1951: Where It All Begins



FILTER

 Historical  
Event Nobel Prizes

1970s

1980s

1990s

2000s

2010s

1952: Establishing HeLa Cells ✓

Molecular Biology and Genetics

Cell Physiology and Disease

1953: Laying the Ground Work for the Polio Vaccine

Cancer Research and Basic Research Methodology

1956: Understanding the Effects of X-Rays on Human Cells ✓

1956: Developing Cancer Research Methods ✓

1960s

1964: Going to Outer Space ✓

1964: Shedding Light on Treatments for Blood Disorders ✓

1970s

1973: Determining How *Salmonella* Causes Infection ✓

1980s

1985: Making Strides Against Cervical Cancer ✓

1985: Slowing Cancer Growth ✓

1988: Advancing Understanding of HIV Infection ✓

1989: Learning How Cells Age ✓

1990s

1993: Exploring How Tuberculosis Makes People Sick ✓

## 2000s

2001: Innovating Single Cell Imaging ✓


2001: Understanding the Infectivity of Ebola and HIV ✓

2008: Dr. Harald Zur Hausen Wins the Nobel Prize for Showing Viruses Can Cause Certain Cancers ✓

2009: Dr. Elizabeth Blackburn, Dr. Carol Greider, and Dr. Jack Szostak are Awarded the Nobel Prize for their Research on Telomeres ✓

## 2010s

2010: Repurposing Thalidomide to Fight Cancer ✓



2013: Allowing Research to Continue to Advance Science While Protecting Privacy

2014: Dr. Eric Betzig, Dr. Stefan W. Hell, and Dr. William E. Moerner are Awarded the Nobel Prize for Advances in Live Viewing of Cellular Growth

## Research Approach

NIH conducted its literature search by using Scopus, an abstract and citation database that consists of approximately 35,000 peer-reviewed journals. NIH analysis yielded over 110,000 biomedical research articles published between the years 1953-2018 that cited the use of HeLa cells.

Research areas were identified by an algorithm that sorted the articles into categories based on the words used in each article. Although research articles are not a perfect record of scientific research, they do offer a glimpse into the ways that HeLa cells have contributed to science and medicine.

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