



Life's Code Crackers

Nobel Prize Winners in DNA Science



1933

Physiology
or Medicine

Thomas Hunt
Morgan
(1866–1945)



for his discoveries concerning
the role played by the
chromosome in heredity

1957

Chemistry

Lord Todd
(1907–1997)



for his work on **nucleotides** and
nucleotide co-enzymes

1958

Physiology
or Medicine

George Wells
Beadle
(1903–1989)



for their discovery that **genes**
act by regulating definite
chemical events

Physiology
or Medicine

Edward
Lawrie Tatum
(1909–1975)



for their discovery that **genes**
act by regulating definite
chemical events

Physiology
or Medicine

Joshua
Lederberg
(1925–2008)



for his discoveries concerning
genetic recombination and the
organization of the **genetic**
material of bacteria

1959

Physiology
or Medicine

Arthur
Kornberg
(1918–2007)



for their discovery of the
mechanisms in the biological
synthesis of **ribonucleic acid**
and **deoxyribonucleic acid**

Physiology
or Medicine

Severo Ochoa
(1905–1993)



for their discovery of the
mechanisms in the biological
synthesis of **ribonucleic acid**
and **deoxyribonucleic acid**

Physiology
or Medicine

Francis Crick
(1916–2004)



for their discoveries concerning the
molecular structure of nucleic acids
and its significance for information
transfer in living material

1962

Physiology
or Medicine

James Watson
(b. 1928)



for their discoveries concerning the
molecular structure of nucleic acids
and its significance for information
transfer in living material

Physiology
or Medicine

Maurice
Wilkins
(1916–2004)



for their discoveries concerning the
molecular structure of nucleic acids
and its significance for information
transfer in living material



1965

Physiology
or Medicine

François
Jacob
(1920–2013)



for their discoveries concerning
genetic control of enzyme and
virus synthesis

Physiology
or Medicine

André Lwoff
(1902–1994)



for their discoveries concerning
genetic control of enzyme and
virus synthesis

Physiology
or Medicine

Jacques
Monod
(1910–1976)



for their discoveries concerning
genetic control of enzyme and
virus synthesis

1968

Physiology
or Medicine

Robert W.
Holley
(1922–1993)



for their interpretation of the
genetic code and its function in
protein synthesis

Physiology
or Medicine

Har Gobind
Khorana
(1922–2011)



for their interpretation of the
genetic code and its function in
protein synthesis

Physiology
or Medicine

Marshall W.
Nirenberg
(1918–2007)



for their interpretation of the
genetic code and its function in
protein synthesis

1969

Physiology
or Medicine

Max Delbrück
(1906–1981)



for their discoveries concerning the
**replication mechanism and the
genetic structure of viruses**

Physiology
or Medicine

Alfred D.
Hershey
(1908–1997)



for their discoveries concerning the
**replication mechanism and the
genetic structure of viruses**

Physiology
or Medicine

Salvador Luria
(1912–1991)



for their discoveries concerning the
**replication mechanism and the
genetic structure of viruses**

1975

Physiology
or Medicine

David
Baltimore
(b. 1938)



for their discoveries concerning the
interaction between **tumour viruses**
and the **genetic material** of the cell



1975

Physiology
or Medicine

Renato
Dulbecco
(1914–2012)



for their discoveries concerning the interaction between **tumour viruses** and the **genetic material** of the cell

Physiology
or Medicine

Howard Temin
(1934–1994)



for their discoveries concerning the interaction between **tumour viruses** and the **genetic material** of the cell

1978

Physiology
or Medicine

Werner Arber
(b. 1929)



for the discovery of **restriction enzymes** and their application to problems of **molecular genetics**

Physiology
or Medicine

Daniel
Nathans
(1928–1999)



for the discovery of **restriction enzymes** and their application to problems of **molecular genetics**

Physiology
or Medicine

Hamilton O.
Smith
(b. 1931)



for the discovery of **restriction enzymes** and their application to problems of **molecular genetics**

1980

Chemistry

Paul Berg
(1926–2023)



for his fundamental studies of the biochemistry of nucleic acids, with particular regard to **recombinant-DNA**

Chemistry

Walter Gilbert
(b. 1932)



for their contributions concerning the determination of **base sequences in nucleic acids**

Chemistry

Frederick
Sanger
(1918–2013)



for their contributions concerning the determination of **base sequences in nucleic acids**

1982

Chemistry

Aaron Klug
(1926–2018)



for his development of crystallographic electron microscopy and his structural elucidation of biologically important **nucleic acid-protein complexes**

1983

Physiology
or Medicine

Barbara
McClintock
(1902–1992)



for her discovery of **mobile genetic elements**



1987

Physiology
or Medicine

Susumu
Tonegawa
(b. 1939)



for his discovery of the **genetic principle** for generation of **antibody** diversity

1989

Physiology
or Medicine

Michael
Bishop
(b. 1936)



for their discovery of the cellular origin of **retroviral oncogenes**

Physiology
or Medicine

Harold E.
Varmus
(b. 1939)



for their discovery of the cellular origin of **retroviral oncogenes**

Chemistry

Sidney
Altman
(1939–2022)



for their discovery of catalytic properties of **RNA**

Chemistry

Thomas Cech
(b. 1947)



for their discovery of catalytic properties of **RNA**

Physiology
or Medicine

Richard J.
Roberts
(b. 1943)



for their discoveries of **split genes**

Physiology
or Medicine

Phillip Sharp
(b. 1944)



for their discoveries of **split genes**

1993

Chemistry

Kary B. Mullis
(1944–2019)



for contributions to the developments of methods within DNA-based chemistry [...] for his invention of the **polymerase chain reaction (PCR)** method

Chemistry

Michael Smith
(1932–2000)



for contributions to the developments of methods within DNA-based chemistry [...] for his fundamental contributions to the establishment of oligonucleotide-based, **site-directed mutagenesis** and its development for protein studies

2002

Physiology
or Medicine

Sydney
Brenner
(1927–2019)



for their discoveries concerning **genetic regulation** of organ development and programmed cell death



2002

Physiology
or Medicine

H. Robert
Horvitz
(b. 1947)



for their discoveries concerning
genetic regulation of organ
development and programmed cell
death

Physiology
or Medicine

John E.
Sulston
(1942–2018)



for their discoveries concerning
genetic regulation of organ
development and programmed cell
death

Chemistry

Roger D.
Kornberg
(b. 1947)



for his studies of the molecular
basis of **eukaryotic transcription**

2006

Physiology
or Medicine

Andrew Fire
(b. 1959)



for their discovery of **RNA
interference - gene silencing** by
double-stranded RNA

Physiology
or Medicine

Craig Mello
(b. 1960)



for their discovery of **RNA
interference - gene silencing** by
double-stranded RNA

Physiology
or Medicine

Elizabeth
Blackburn
(b. 1948)



for the discovery of how
chromosomes are protected by
telomeres and the enzyme
telomerase

2009

Physiology
or Medicine

Carol Greider
(b. 1961)



for the discovery of how
chromosomes are protected by
telomeres and the enzyme
telomerase

Physiology
or Medicine

Jack Szostak
(b. 1952)



for the discovery of how
chromosomes are protected by
telomeres and the enzyme
telomerase

2015

Chemistry

Tomas Lindahl
(b. 1938)



for mechanistic studies of **DNA
repair**

Chemistry

Paul Modrich
(b. 1946)



for mechanistic studies of **DNA
repair**



2015

Chemistry

Aziz Sancar
(b. 1946)

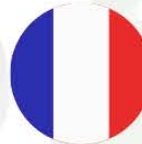


for mechanistic studies of **DNA repair**

2020

Chemistry

Emmanuelle Charpentier
(b. 1968)



for the development of a method for **genome editing**

Chemistry

Jennifer Doudna
(b. 1964)



for the development of a method for **genome editing**

2022

Physiology or Medicine

Svante Pääbo
(b. 1955)



for his discoveries concerning the **genomes** of extinct hominins and human evolution

2023

Physiology or Medicine

Katalin Karikó
(b. 1955)



for their discoveries concerning **nucleoside base modifications** that enabled the development of effective **mRNA vaccines** against COVID-19

Physiology or Medicine

Drew Weissman
(b. 1959)



for their discoveries concerning **nucleoside base modifications** that enabled the development of effective **mRNA vaccines** against COVID-19

2024

Physiology or Medicine

Victor Ambros
(b. 1953)



for the discovery of **microRNA** and its role in post-transcriptional **gene regulation**

Physiology or Medicine

Gary Ruvkun
(b. 1952)



for the discovery of **microRNA** and its role in post-transcriptional **gene regulation**

