

Milestones in Genetic Discovery

Genetics · Practice Test · 20 Questions

1. Who published the first description of the DNA double helix structure in the journal Nature in 1953?

- A) James Watson and Francis Crick
- B) Rosalind Franklin and Maurice Wilkins
- C) Oswald Avery and Colin MacLeod
- D) Erwin Chargaff and Linus Pauling

2. Which scientist is credited with the first successful isolation of 'nuclein' from white blood cells in 1869?

- A) Gregor Mendel
- B) Friedrich Miescher
- C) Theodor Boveri
- D) Walter Sutton

3. What was the first organism to have its entire genome sequenced in 1995 by The Institute for Genomic Research?

- A) Escherichia coli
- B) Saccharomyces cerevisiae
- C) Haemophilus influenzae
- D) Caenorhabditis elegans

4. The first successful instance of gene therapy in humans, conducted in 1990, targeted which enzyme deficiency?

- A) Adenosine deaminase
- B) Phenylalanine hydroxylase
- C) Glucose-6-phosphate dehydrogenase
- D) Hypoxanthine-guanine phosphoribosyltransferase

5. Who coined the term 'genetics' in a private letter to Adam Sedgwick in 1905?

- A) Thomas Hunt Morgan
- B) Hugo de Vries
- C) William Bateson
- D) Carl Correns

6. In 1944, the Avery-MacLeod-McCarty experiment provided the first definitive evidence that which substance was the 'transforming principle'?

- A) Protein
- B) RNA
- C) Lipids
- D) DNA

7. Which technique, invented by Kary Mullis in 1983, allowed for the rapid amplification of specific DNA segments?

- A) Southern Blotting
- B) Polymerase Chain Reaction
- C) Sanger Sequencing
- D) Restriction Fragment Length Polymorphism

8. The first animal to be cloned from an adult somatic cell using nuclear transfer was Dolly the sheep in what year?

- A) 1994
- B) 1996
- C) 1998
- D) 2000

9. Who discovered the phenomenon of 'jumping genes' (transposons) in maize, for which they were awarded the Nobel Prize in 1983?

- A) Barbara McClintock
- B) Emmanuelle Charpentier
- C) Jennifer Doudna
- D) Elizabeth Blackburn

10. The first linkage map of a chromosome, detailing the linear arrangement of genes, was created in 1913 for which organism?

- A) *Mus musculus*
- B) *Drosophila melanogaster*
- C) *Arabidopsis thaliana*
- D) *Zea mays*

11. Which Nobel laureate was the first to determine the amino acid sequence of a protein, specifically bovine insulin, in 1955?

- A) Frederick Sanger
- B) Linus Pauling
- C) Christian Anfinsen
- D) Stanford Moore

12. What was the first commercially available genetically modified food product approved by the FDA in 1994?

- A) Bt corn
- B) Flavr Savr tomato
- C) Golden rice
- D) Roundup Ready soybean

13. In 1961, which researchers discovered that genetic codons consist of three nucleotides (triplets) by using synthetic RNA?

- A) Marshall Nirenberg and Heinrich Matthaei
- B) Arthur Kornberg and Severo Ochoa
- C) Francois Jacob and Jacques Monod
- D) Sydney Brenner and Francis Crick

14. Which experiment in 1952 provided final confirmation that DNA, not protein, is the genetic material in bacteriophages?

- A) Meselson-Stahl experiment
- B) Hershey-Chase experiment
- C) Griffith's experiment
- D) Beadle-Tatum experiment

15. Who developed the method for DNA sequencing by chain termination in 1977, now known as Sanger sequencing?

- A) Walter Gilbert
- B) Allan Maxam
- C) Frederick Sanger
- D) George Church

16. The first draft of the human genome was publicly announced by the Human Genome Project in what year?

- A) 1998
- B) 2000
- C) 2003
- D) 2005

17. Which scientists were the first to demonstrate that one gene corresponds to one enzyme (or polypeptide) in 1941?

- A) George Beadle and Edward Tatum
- B) Thomas Hunt Morgan and Calvin Bridges
- C) Alfred Hershey and Martha Chase
- D) Joshua Lederberg and Edward Tatum

18. The first transgenic mammal, a mouse created by microinjecting DNA into a fertilized egg, was reported in which year?

- A) 1974
- B) 1980
- C) 1982
- D) 1985

19. In 1910, who identified the White-eyed mutation in fruit flies, proving that genes are located on chromosomes?

- A) Thomas Hunt Morgan
- B) Edmund Beecher Wilson
- C) Nettie Stevens
- D) Theodor Boveri

20. Which groundbreaking tool, published in 2012 by Doudna and Charpentier, revolutionized genome editing?

- A) TALENs
- B) Zinc Finger Nucleases
- C) CRISPR-Cas9
- D) Meganucleases