

# Milestones in Biochemistry

Biochemistry · Answer Key · 10 Questions

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**1. Which scientist is credited with the first isolation and identification of urea from urine, a pivotal step in establishing biochemistry as a distinct field?**

- A) Antoine Lavoisier
- B) Friedrich Wöhler**
- C) Jöns Jacob Berzelius
- D) Louis Pasteur

**2. The discovery of the double helix structure of DNA by Watson and Crick in 1953 was heavily reliant on the X-ray diffraction data produced by which other scientists?**

- A) Linus Pauling and Robert Corey
- B) Rosalind Franklin and Maurice Wilkins**
- C) Erwin Chargaff and Erwin Negelein
- D) Arthur Kornberg and Severo Ochoa

**3. Who proposed the 'Lock and Key' model for enzyme-substrate interaction, a fundamental concept in understanding enzyme catalysis?**

- A) Emil Fischer**
- B) James B. Sumner
- C) Hans Krebs
- D) Linus Pauling

**4. The identification of the citric acid cycle (also known as the Krebs cycle) was a major breakthrough in understanding cellular respiration. Who is primarily associated with this discovery?**

- A) Hans Krebs**
- B) Fritz Lipmann
- C) Albert Szent-Györgyi
- D) Otto Warburg

**5. Which biochemist's work on the chemical basis of nerve impulse transmission, particularly the role of acetylcholine, earned him a Nobel Prize?**

- A) Otto Loewi**
- B) Henry Dale
- C) Bernard Katz
- D) Wilhelm Feldberg

**6. The synthesis of urea from inorganic compounds by Friedrich Wöhler in 1828 challenged the prevailing vitalism theory. This synthesis is considered a landmark event because it:**

- A) Proved the existence of enzymes in living organisms.
- B) Demonstrated that organic compounds could be synthesized in a laboratory.**
- C) Isolated the first antibiotic.
- D) Discovered the genetic code.

**7. The discovery of messenger RNA (mRNA) and its role in protein synthesis is largely attributed to the work of:**

- A) Francis Crick and James Watson
- B) Marshall Nirenberg and Heinrich Matthaei**
- C) Arthur Kornberg and Severo Ochoa
- D) Rosalind Franklin and Maurice Wilkins

**8. Who was the first to crystallize an enzyme (urease) and demonstrate that proteins could possess catalytic activity, challenging the notion that enzymes were not proteins?**

- A) Emil Fischer
- B) James B. Sumner**
- C) Friedrich Miescher
- D) Fritz Lipmann

**9. The discovery of the chemical structure of steroids, including cholesterol, and their relationship to hormones was significantly advanced by the research of which Nobel laureate?**

- A) Linus Pauling
- B) Adolf Butenandt**
- C) John Kendrew
- D) Max Perutz

**10. In the early 20th century, which scientist pioneered the use of chromatography for the separation and analysis of biomolecules, a technique that revolutionized biochemical research?**

- A) Marie Curie
- B) Mikhail Tsvet**
- C) Theodor Svedberg
- D) Arne Tiselius