

# MOLECULAR BIOLOGY EVOLUTION

## Milestones in Genetic History

### **Discovery of Nuclein**

Friedrich Miescher isolates DNA for the first time from white blood cells.

**1869**

### **DNA as Hereditary Material**

Avery, MacLeod, and McCarty demonstrate that DNA is the substance causing bacterial transformation.

**1944**

### **Double Helix Structure**

Watson and Crick, utilizing Rosalind Franklin's data, publish the molecular structure of DNA.

**1953**

### **DNA Sequencing**

Frederick Sanger develops the chain termination method for sequencing genomes.

**1977**

### **PCR Invention**

Kary Mullis develops Polymerase Chain Reaction, allowing for rapid DNA amplification.

**1983**

### **Human Genome Project**

Completion of the first high-quality sequence of the entire human genetic code.

**2003**

### **CRISPR-Cas9**

Doudna and Charpentier describe a programmable method for precise genome editing.

**2012**