

Introduction



Alexander Fleming was a Scottish scientist who discovered the first **antibiotic** drug, **penicillin**. He shared the **Nobel Prize** for Medicine in 1945 with Howard Florey and Ernst Chain, who had also worked on developing penicillin as a drug. Fleming's research helped pave the way for all modern antibiotics, which have proved to be effective drugs for the treatment of many diseases, including **pneumonia** and **meningitis**.

Early Work



Alexander Fleming was born on August 6, 1881, in Lochfield, Scotland. He studied medicine at Saint Mary's Hospital Medical School, at London University. When his degree was finished, he began researching substances that kill **bacteria** (microorganisms that are responsible for causing some diseases). Fleming continued his work during World War I (1914–18) while serving in the Royal Army Medical Corps. After the war ended he returned to Saint Mary's College.



Alexander Fleming: discovery of penicillin

The Discovery of Penicillin



In 1928, thanks to a lucky accident, Fleming made the most important discovery of his life. He was using *Staphylococcus* bacteria when he noticed that the bacteria could not survive if a mold, called *Penicillium notatum*, contaminated the sample.

Fleming had smeared some *Staphylococcus* bacteria on a culture plate before going on holiday. While he was away, a mold spore had flown into the laboratory from another nearby laboratory where molds were being studied. When he returned, Fleming discovered the bacteria had grown and covered the entire plate except for one area, which was covered in mold. After investigating further, Fleming found a substance in the mold that prevented the bacteria from growing, even if it was diluted 800 times. He named the substance penicillin.

The Development of Useful Drugs



Fleming realized the importance of his discovery in the fight against disease, but he was not able to isolate enough penicillin for its use on humans. Eleven years later two other scientists took Fleming's research to the next stage. Ernst Chain and Howard Florey were able to carry out more experiments on penicillin, producing enough to make effective medicines and test them on patients. In 1941 penicillin was introduced as a worldwide treatment for diseases caused by bacteria, and three years later Alexander Fleming was knighted. He died on March 11, 1955.