

Sir Alexander Fleming

A. Sir Alexander Fleming is a Scottish bacteriologist best known for his discovery of penicillin. Fleming had a genius for technical ingenuity and original observation. His work on wound infection and lysozyme, an antibacterial enzyme found in tears and saliva, guaranteed him a place in the history of bacteriology. But it was his discovery of penicillin in 1928, which started the antibiotic revolution that sealed his lasting reputation. Fleming was recognized for that achievement in 1945, when he received the Nobel Prize for Physiology or Medicine, along with Australian pathologist Howard Walter Florey and German-born British biochemist Ernst Boris Chain, both of whom isolated and purified penicillin.

B. Fleming was the seventh of eight children of a Scottish hill farmer (third of four children from the farmer's second wife). His country upbringing in southwestern Scotland sharpened his capacities for observation and appreciation of the natural world at an early age. He began his elementary schooling at Loudoun Moor and then moved on to a larger school at Darvel before enrolling in Kilmarnock Academy in 1894. In 1895 he moved to London to live with his elder brother Thomas (who worked as an oculist) and completed his basic education at Regent Street Polytechnic. After working as a London shipping clerk, Fleming began his medical studies at St. Mary's Hospital Medical School in 1901, funded by a scholarship and a legacy from his uncle. There he won the 1908 gold medal as top medical student at the University of London. At first, he planned to become a surgeon, but a temporary position in the laboratories of the Inoculation Department at St. Mary's Hospital convinced him that his future lay in the new field of bacteriology. There he came under the influence of bacteriologist and immunologist Sir Almroth Edward Wright, whose ideas of vaccine therapy seemed to offer a revolutionary direction in medical treatment.

C. In November 1921 Fleming discovered lysozyme, an enzyme present in body fluids such as saliva and tears that has a mild antiseptic effect. That was the first of his major discoveries. It came about when he had a cold and a drop of his nasal mucus fell onto a culture plate of bacteria. Realizing that his mucus might have an effect on bacterial growth, he mixed the mucus into the culture and a few weeks later he saw signs of the bacteria having been dissolved. Fleming's study of lysozyme, which he considered his best

Questions 34-36

Reading Passage 3 has seven sections, **A-G**

Which paragraph contains the following information?

Write the correct letter, **A-G**, in boxes 34-37 on your answer sheet.

33. A brief description of Fleming's personalities
34. An anti-bacterial enzyme that was of no use when it comes to getting rid of a certain type of bacteria
35. A reference to a senior in a scientific field that had potential ideas for a medical revolution
36. An unsuccessful result despite assistance from other people

Questions 37-40

Choose **NO MORE THAN TWO WORDS** from the passage for each answer.

Write your answers in boxes 37-40 on your answer sheet.

37. Which relative financially supported Fleming's study in a medical school?
38. What was the initial job that Fleming intended to do after his success at university?
39. What skill that is necessary for developing penicillin's healing property?
40. For how long did Fleming enjoy his marriage before he passed away?