

Англоязычная секция

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Тезис

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Penicillin: discovery and therapeutic value

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Penicillin is one of the earliest discovered and widely used antibiotic agents, derived from the *Penicillium* mold. Antibiotics are compounds produced by bacteria and fungi which are capable of killing or inhibiting bacteria.

Penicillin was discovered by Scottish scientist, Professor of Bacteriology, Alexander Flemming. On September 3, 1928, Fleming noticed that his Petri dishes were full of colonies of bacteria, except for one area in one dish where a bit of mold was growing. The space around the mold was clear, as if the mold had secreted a substance inhibiting bacterial growth. Later it was identified as *Penicillium notatum*.

Fleming found that his mold juice was capable of killing a wide range of harmful bacteria, such as streptococcus, the diphtheria bacillus.

Fleming had a problem of isolating pure penicillin (which could be used in a clinic practice) from the mold juice. It proved to be very unstable, that's why both his assistants and Raistrick, Professor of Biochemistry, failed at purifying penicillin.

In 1939 the team of Howard Florey and Ernst Chain, scientists of Oxford university, worked out technique of penicillin purification.

In 1940, Florey carried out vital experiments, showing that penicillin could protect mice against infection from deadly *Streptococci*. After it there were experiences with real patients that had good results.

Then more effective methods of penicillin production were found and started in the US during WWII.

In clinical studies the drug was shown to be effective in the treatment of a wide variety of infections including syphilis.

In 1945, Florey, Chain and Fleming were collectively awarded the Nobel Prize for Medicine.

This discovery led to the introduction of antibiotics that greatly reduced the number of deaths from infection and saved a lot of lives during the WWII.

Keywords: penicillin, discovery, Fleming, bacteria, fungi